

Fatal Journeys

Volume 3

PART I

Improving Data on Missing Migrants



IOM's Global Migration
Data Analysis Centre
GMDAC



65
YEARS

International Organization for Migration

IOM is committed to the principle that humane and orderly migration benefits migrants and society. As an intergovernmental organization, IOM acts with its partners in the international community to: assist in meeting the operational challenges of migration; advance understanding of migration issues; encourage social and economic development through migration; and uphold the human dignity and well-being of migrants. The opinions expressed in the book are those of the authors and do not necessarily reflect the views of the International Organization for Migration (IOM).

The designations employed and the presentation of material throughout the book do not imply the expression of any opinion whatsoever on the part of IOM concerning the legal status of any country, territory, city or area, or of its authorities, or concerning its frontiers or boundaries.

This material has been funded by UK Aid from the Government of the United Kingdom; however, the views expressed do not necessarily reflect the Government of the United Kingdom's official policies.

Publisher: International Organization for Migration
17 route des Morillons
P.O. Box 17
1211 Geneva 19
Switzerland
Tel.: + 41 22 717 91 11
Fax: + 41 22 798 61 50
E-mail: hq@iom.int
Website: www.iom.int

© 2017 International Organization for Migration (IOM)

eISBN: 978-92-9068-744-3

Cover Photo: “State of Exception/ Estado de Excepción”. Backpacks of migrants found in the Arizona desert, as part of the Undocumented Migration Project led by Jason De León at the University of Michigan.

Installation: Richard Barnes (Artist/Photographer), Jason De León (Anthropologist), Amanda Krugliak (Artist/Curator). © OTTO 2013 (Photo by Richard Barnes)

No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise without the prior written permission of the publisher.

Fatal Journeys

Volume 3

PART I

Improving Data on Missing Migrants

Edited by
Frank Laczko, Ann Singleton and Julia Black



Foreword

This is the third in the International Organization for Migration's (IOM) series of global reports documenting the number of lives lost during migration. The publication of this report is particularly timely, as the 193 UN Member States prepare to discuss the adoption of a global compact for safe, orderly and regular migration. A key indicator of unsafe migration is the number of migrants who perish each year during their journeys. Sadly, there seem to be few signs that this number is decreasing.

Since the beginning of 2014, IOM has recorded the deaths and disappearances of over 22,500 migrants. IOM has also calculated that at least 60,000 migrants have died since the year 2000. The Mediterranean crossing, which has claimed the lives of 15,000 migrants since it first made headlines in October 2013, is just one example of the many migration routes that see numerous fatalities each year.

However, the true number of migrant fatalities is unknown, as not all deaths and disappearances are reported. In many remote regions of the world, bodies may never be found, and many migrants may never be identified. Each nameless death represents a family missing a loved one.

In addition to providing a global analysis of trends, this year's report focuses on how to improve the data on missing migrants. Although data collection has improved over the last three years, there are many gaps in our knowledge about missing migrants. Basic information such as the sex or the age of the migrant who is reported dead or missing is often lacking. The number of bodies that are retrieved and identified still remains very low. There are many potential sources of data and approaches that could be taken to improve data on missing migrants. The challenge is not simply a lack of data, but the unwillingness of some authorities to collect them, as well as deficiencies in resources and know-how.

I have consistently stressed the importance of saving lives in any response to migration, with a view to protecting migrants' rights, including the right to life. Improving information on who these missing migrants are, where they come from, and above all, when they are most at risk, is crucial to building a holistic response to reduce the number of migrant deaths. As I have argued many times before, making migration safer will require the implementation of a comprehensive set of measures, including more legal pathways to migration. Good data are essential if we are to keep track of our efforts to make migration safer.



William Lacy Swing
Director General

Acknowledgements

We would like to thank all the authors for their excellent contributions to this report. We are especially grateful to Kate Dearden and Marta Sanchez at the International Organization for Migration's (IOM) Global Migration Data Analysis Centre and Frances Marie Solinap at IOM Manila for their invaluable support. This publication would also not have been possible without the assistance of the IOM Publications Team, particularly Valerie Hagger, Melissa Borlaza and Anna Lyn Constantino. We are particularly grateful to the staff of the University of Texas at El Paso for hosting an expert preparatory meeting for this report, and especially to Dr Gabriella Sanchez for her guidance and support. We would also like to highlight the invaluable help of Flavio di Giacomo at IOM Rome, Christine Petre at IOM Libya and staff in US border counties – particularly those at the Pima County Office of the Medical Examiner – for their support in the collection of data on migrant deaths. Special thanks are also extended to Marie McAuliffe, at IOM's Research Division, for her review of some of the contents of this report. We would particularly like to thank Leonard Doyle, Joel Millman and IOM's Media and Communications Division in Geneva for their contributions. Finally, and not least, we are especially grateful to IOM's Director General, William Lacy Swing, for his commitment to this publication and to IOM's Missing Migrants Project.

Table of contents

Foreword.....	iii
Acknowledgements	iv
List of tables and figures	vi
List of maps and text boxes.....	vii
Executive summary	ix
Introduction	xi
Chapter 1	
Global overview of the available data on migrant deaths and disappearances.....	1
<i>by Julia Black, Kate Dearden, Ann Singleton and Frank Laczko</i>	
1.1. Introduction	1
1.2. Regional analyses	6
1.3. Who is most at risk?.....	16
1.4. Conclusion and recommendations.....	21
Chapter 2	
Using big data to study rescue patterns in the Mediterranean	25
<i>by Katherine Hoffmann, Jeremy Boy, James Leon-Dufour, Duncan Breen, Christopher Earney and Miguel Luengo-Oroz</i>	
2.1. Introduction	25
2.2. Discussion of best practices: New data sources.....	26
2.3. Data use cases.....	30
2.4. Methodological challenges	39
2.5. Conclusion and recommendations	40
Chapter 3	
Mixed messages: Media coverage of migration and fatalities.....	47
<i>by Aidan White and Ann Singleton</i>	
3.1. Introduction	47
3.2. Ethics and reporting realities	48
3.3. Missing links and media narratives	50
3.4. In the picture: Humanity or the people’s right to know?.....	52
3.5. How victims figure in the minds of media.....	53
3.6. Developing good practices and monitoring media	54
3.7. Conclusion and recommendations.....	54
Chapter 4	
Migrant bodies in Europe: Routes to identifying the dead and addressing the needs of the families of the missing	63
<i>by Simon Robins</i>	
4.1. Introduction	63
4.2. Impacts on families of missing migrants	64
4.3. Policy responses in Italy and Greece	66
4.4. Conclusion and recommendations	71

Chapter 5

Identifying dead migrants, examples from the United States–Mexico border..... 77

by Robin Reineke and Chelsea Halstead

5.1. Introduction	77
5.2. History of the crisis and state of the data	78
5.3. Forensic human identification along the United States–Mexico border: Problems and challenges	80
5.4. Forensic human identification along the United States–Mexico border: Current practices.....	83
5.5. Non-governmental efforts to assist medical examiners and families of the missing.....	88
5.6. A family-centred approach: The Colibrí Center for Human Rights	89
5.7. Conclusion and recommendations.....	91

Chapter 6

The Border Project: Towards a regional forensic mechanism for the identification of missing migrants..... 99

by Mercedes Doretti, Carmen Osorno Solís and Rachel Daniell

6.1. Introduction	99
6.2. The Border Project	103
6.3. Challenges	113
6.4. Conclusion and recommendations.....	115

List of tables

Table a. Rates of identification of recovered migrant remains in available regions.....	xi
Table 1. Dead and missing migrants: Data quality and the strengths and weaknesses of different sources.....	4
Table 2. Average number of fatalities per incident recorded in the Central Mediterranean, January 2014–June 2017.....	8
Table 3. Migrant arrivals in Balkan States, first quarter 2016 and 2017.....	9
Table 4. Regional data on migrant deaths by age and gender, January 2014–June 2017	20
Table 5. Total number of cases of missing migrants, families and DNA donors in the forensic databanks	108
Table 6. Identifications reached by the Forensic Commission, via the Border Project, by year and by event/massacre	111
Table 7. Border Project identifications per forensic databank (FDB) and per year	111
Table 8. Border Project identifications per forensic databank (FDB) by location of remains discovery	113

List of figures

Figure 1. Monthly search and rescue operations in the Central Mediterranean, January 2016–May 2017	7
Figure 2. Reported causes of death in North Africa, 2016.....	10
Figure 3. USBP apprehensions and migrant fatalities, January–June 2016 and 2017	15
Figure 4. Reports of dead and/or missing people in the Mediterranean by number of survivors, January 2014–April 2017	26
Figure 5. AIS traffic over two weeks in the Central Mediterranean, 11–25 April 2015	28
Figure 6. Sample broadcast warning with automatically extracted features.....	30
Figure 7. An example of a “quantified rescue” with multiple rescue boats.....	31
Figure 8. An example of a “quantified rescue” with multiple sequential rescues	32

Figure 9.	Rescue and non-rescue data points by speed and course over ground.....	33
Figure 10.	Classification of a sample trajectory	34
Figure 11.	An overview of selected rescue vessel traces from Summer to Fall 2016	35
Figure 12.	Density of broadcast warnings, dead and missing, and vessel traffic	36
Figure 13.	Broadcast warnings, 2014–2016.....	37
Figure 14.	Arrivals and broadcast warnings, 2014–2016.....	38
Figure 15.	Pima County Office of the Medical Examiner deaths coded as UBCs, FY 1990–2016 (N=2,776).....	78
Figure 16a.	Cases of missing migrants.....	109
Figure 16b.	DNA donors.....	109
Figure 17a.	Border Project identifications per forensic databank and year	112
Figure 17b.	Border Project identifications by location, 2011–2017.....	112

List of maps

Map 1.	Global migrant fatalities and disappearances worldwide, 1 January–30 June 2017	2
Map 2.	Migrant fatalities and disappearances recorded in the Mediterranean, January 2014–June 2017	6
Map 3.	Migrant fatalities and disappearances recorded in North Africa and the Middle East, January 2014–June 2017	11
Map 4.	Migrant fatalities and disappearances recorded in Asia, January 2014–June 2017	13
Map 5.	Migrant fatalities and disappearances recorded in Central America and the United States–Mexico border, January 2014–June 2017.....	14
Map 6.	Dead and missing migrants in the Central Mediterranean, 2014–2016	69
Map 7.	Border Project identifications per forensic data bank (FDB) by location of remains discovery	113

List of text boxes

Text Box 1.	Methodological challenges	3
	<i>by Ann Singleton, Julia Black and Kate Dearden</i>	
Text Box 2.	MHub Survey data in Europe and North Africa	11
	<i>by Amanuel Mehari</i>	
Text Box 3.	Identification efforts in Arizona	92
	<i>by Reyna Araibi</i>	
Text Box 4.	Search and rescue efforts in Southern Texas	94
	<i>by Eduardo Canales</i>	
Text Box 5.	International Committee of the Red Cross operations in Mexico.....	102
	<i>by Olivier Dubois</i>	

Executive summary

Since 2014, more than 22,500 migrant deaths and disappearances have been recorded by the International Organization for Migration (IOM) globally. The real figure could be much higher, but many deaths are never recorded. The reasons for this may vary. Sometimes, it is because deaths occur in remote regions of the world, while in other cases, it may simply be due to the lack of priority given to collecting such data by national authorities, or a lack of resources to collect such information.

This is the third volume in IOM's series of global reports on missing migrants.ⁱ It is published in two parts. Part 1 examines the existing and potential sources of data on missing migrants. Part 2, to be published later this year, provides an in-depth regional analysis of the currently available data. The first section of *Fatal Journeys Volume 3 – Part 1* provides an update of data on global migrant fatalities since 2014, and highlights the risks faced by migrant women and children. Data collected by IOM's Missing Migrants Project, the only existing database on migrant deaths at the global level, are used to present the known number and profile of dead and missing migrants in different regions of the world.

The reports discuss the methodological challenges of gathering data on missing migrants. Data are gathered from official records, including coast guards and medical examiners, and also include information from media reports, non-governmental organizations (NGOs) and surveys and interviews with migrants. Information derived from such a variety of sources is of varying quality, and the many inconsistencies in the available data make comparison across regions or over time difficult.

The main focus of this year's report is on how to improve data on missing migrants, to help prevent such tragedies from occurring and to enable the families left behind learn more about the fate of their loved ones. Despite all the media and policy attention given to reporting migrant deaths, data on the subject remains very limited. Relatively little is known about the migrants who die. Many bodies are never found, and even if discovered, it may take years before the person can be identified, if at all. Often, it is difficult even to establish the age or sex of the person who died. The report suggests that the problem is not simply a lack of potential data. There are many ways in which data on missing migrants could be improved, but national authorities may not have the resources or interest to prioritize data collection and analysis.

The report highlights in particular three key ways in which to improve the collection, sharing and reporting of data on missing migrants.

1. Making better use of potential new sources of data

The report illustrates that there are a growing number of potential sources of data on missing migrants. One chapter of the report shows, for example, that the analysis of "big data" can provide a better understanding of the context of search and rescue operations in the Mediterranean. New data sources can supplement traditional data sources. Big data can provide further indications of vessels that go missing, and where rescue efforts are concentrated. Another new approach to data gathering has been to collect more data directly from migrants who may have witnessed a death. The report suggests, however, that such data needs to be interpreted with care. For example, such surveys may not be representative and there is a risk of double-counting if different interviewees have witnessed the same death(s), and these are recorded as separate incidents.

ⁱ Volume 1 of the *Fatal Journeys* series, published in 2014, was the first effort to examine, in different regions across the world, how data on migrant deaths are collected and shared. *Fatal Journeys Volume 2*, published in 2016, highlighted the many difficulties relating to the identification and tracing of dead and missing migrants.

2. Better data to improve identification rates

The report shows that the percentage of missing migrants who are identified can vary a great deal by region. While in some cases the proportion of migrants identified can be as low as 25 per cent, in other places, it can be nearly 75 per cent. This suggests that much more could be done to gather data to increase identification rates. For example, developing mechanisms to share data more effectively could help to increase identification rates. An interesting approach highlighted in the report is the work of forensic teams in Latin America, which have been working together with NGOs and governments to promote the sharing of data to facilitate the identification of missing migrants. Too often, such data is fragmented and not shared effectively either within or between countries. In another chapter, focusing on Europe, it is argued that closer contact with the families of missing migrants is also likely to generate more data about the profiles of those who are missing. Too often, families are prevented from travelling to places where their relatives may have died due to immigration restrictions or lack of resources.

3. Communicating data differently

Third, improving data on missing migrants also requires more thought and improved practice in the use and communication of such data. It is not sufficient to collect the data if they are not interpreted and presented accurately and in a balanced manner. One chapter of the report focuses on the ways in which the media cover stories about missing migrants. It notes that current standards of media coverage vary widely, and the tone of the content ranges from humanitarian concern to reproduction of negative narratives about migration. Often the information media provide about migrant fatalities is flawed, inaccurate, incomplete or exaggerated. This is important from a data perspective as a great deal of data on missing migrants is drawn from media sources.

Looking ahead, it is hoped that the findings of this report will inform discussions relating to the Global Compact on Safe, Orderly and Regular Migration. The inclusion of migration in the United Nations' 2030 Global Agenda for Sustainable Development, and the commitment of States to promote safe, orderly and regular migration, require improved data on "unsafe migration". One key indicator of the progress that is being made to promote safe migration is the number of migrants who are reported dead or missing each year. *Fatal Journeys Volume 3 – Part 1* provides a global review of existing data sources, and illustrates the need for improvements in the ways that data on missing migrants are collected, analysed and communicated.

Introduction

Frank Laczko, Ann Singleton, and Julia Black^a

This is the third in the International Organization for Migration’s (IOM) series of global reports on migrant deaths. When this series was launched in 2014, it was hoped that the number of migrant deaths would decrease, and that there would be less need for a global report of this kind. Sadly, that has not been the case. Since 2014, IOM has documented more than 22,500 migrant deaths around the world. During the first half of 2017, 3,110 migrants worldwide were reported dead or missing by IOM. Although this figure is somewhat lower than that of 4,348 for 2016, the risk of dying has actually increased along some migratory routes. For example, despite considerable policy and media attention and increased search and rescue efforts by a range of actors,^b the death toll in the Mediterranean has continued to rise. In the Mediterranean region, the rate of death^c increased from 1.2 per cent in the first half of 2016, to 2.1 per cent in the first half of 2017. Although fewer migrants crossed the Mediterranean in 2017, a higher percentage of those on this journey perished.

The weekly release of data on the number of migrants dying around the world may give the impression that we know a great deal about the total numbers of deaths or the perilous journeys that migrants undertake, in fact there are huge gaps in our knowledge. In the Mediterranean, as elsewhere, it is not known how many bodies are never discovered. Nor, in many cases, is it possible to say whether the missing migrant is male or female or a child or adult. Even when these facts are known, in the majority of cases, it is not possible to identify the migrant. This means that families left behind can spend years searching for information about their loved ones and living in limbo (see Table a).

Table a. Rates of identification of recovered migrant remains in available regions

Region	Share of remains identified	Time frame	Source
European States and territories bordering the Mediterranean ^d	35%	1990–2013	Deaths at the Borders Database, Vrije Universiteit Amsterdam
Rhodes Island, Greece	74%	January 2015–February 2016	National and Kapodistrian University of Athens
Thrace region, Greece	25%	2010–2015	Dr Pavlidis, Laboratory of Forensic Sciences, Democritus University of Thrace
October 2013 shipwrecks off the coast of Lampedusa, Italy	50%	-	LABANOF Institute, University of Milan
Southern Arizona	66%	1990–2013	Pima County Office of the Medical Examiner
Webb County, Texas	58%	Mid-2013–mid-2015	Webb County Medical Examiner

Source: Adapted from *Fatal Journeys volume 2: Identification and Tracing of Dead and Missing Migrants*, 2016.

Note: Pima County Office of the Medical Examiner has investigated an estimated 95 per cent of migrant deaths in Arizona since 2003. The Webb County Medical Examiner investigates deaths in 10 counties in Southern Texas.

^a Frank Laczko is the Director of IOM’s Global Migration Data Analysis Centre (GMDAC). Ann Singleton is Senior Research Fellow at the University of Bristol and Senior Advisor to GMDAC. Julia Black is the Project Coordinator for IOM’s Missing Migrants Project, and is based at GMDAC.

^b See chapter 2’s discussion of search and rescue efforts in the Mediterranean.

^c Calculated by dividing the number of Mediterranean migrant fatalities by the sum of the following: (a) migrant arrivals in Italy, Greece and Spain; (b) the number of migrant fatalities in the Mediterranean; and (c) the number of migrants rescued by the Libyan Coast Guard.

^d Italy, Greece, Malta, Spain and Gibraltar.

The primary purpose of this report is to present, as accurately as possible, the best available data on the number and profile of missing migrants globally, and the data on the numbers of persons who are identified, as well as explain how such numbers are collected. In addition, this year's report focuses on how to improve data on missing migrants. This is not simply a question about collecting more statistics. Obtaining better data on missing migrants could make a real difference to the lives of the families left behind, if they are able to obtain more information about their missing relatives. At the same time, learning more about those who do embark on dangerous journeys can help to inform policymakers about the reasons for such migration.

Finding better ways to measure and document unsafe migration is also important, given the inclusion of migration in the 2030 Global Agenda for Sustainable Development. All countries have agreed, according to this agenda, to work towards promoting safe, orderly and regular migration. Furthermore, this language is also used in the New York Declaration for Refugees and Migration signed in September 2016, which will be followed by the signing of a Global Compact on Migration in 2018. Building upon the New York Declaration for Refugees and Migrants, the Global Compact on Safe, Orderly and Regular Migration will set out a range of principles, commitments and understandings among UN Member States regarding international migration in all its dimensions.

This report focuses in particular on three key ways in which to improve the collection, analysis and reporting of data on missing migrants. As noted in our previous reports, official data on the number of missing migrants are scarce as few national authorities collect such figures. This has meant that there has been a great deal of reliance on collecting data from media reports. However, new sources of data and new approaches to collecting data on missing migrants are emerging. It is important that information about such practices are shared widely.

Innovative data methods

First, the report highlights the potential of using several innovative methods of collecting data on missing migrants. For example, chapter 2 demonstrates the potential of using “big data” for the analysis of migration trends. Katherine Hoffman and her colleagues at UN Global Pulse and United Nations High Commissioner for Refugees explore how big data can reveal the pattern of search and rescue efforts in the Central Mediterranean region. They show in their chapter how big data can be used to complement other sources of data relating to missing migrants. Using the Automatic Identification System and Broadcast Warning data, they were able to study the precise location of rescue ships in the Mediterranean, and gather data about migrants and refugees on vessels in distress. This method provides a comprehensive picture of rescue efforts, whereas existing methods of data collection tend to focus on the most dramatic or severe incidents. This analysis is important, given the growing scale of search and rescue operations.

Another new approach to data gathering has been to collect more data directly from migrants who may have witnessed a death. This is a method used increasingly by a number of organizations (see chapter 1: Global overview of the available data on migrant deaths and disappearances). While this approach is a potentially useful means of gathering more data, care should be taken when interpreting the results. There are ethical problems in interviewing people who may still be in trauma (and whose recollections may also be affected). There is a risk of double-counting if different interviewees have witnessed the same death(s), and these are recorded as separate incidents. It should also be kept in mind that the migrants who are surveyed may not be a representative sample of persons on the move. Given the clandestine nature of such movements, it is very difficult for researchers to draw fully representative samples. Surveys also tend to take place during different time periods, making it difficult to draw accurate comparisons over several years.

Another new approach has been to produce estimates of migrant deaths based on demographic data. Due to the lack of disaggregated data, IOM's Missing Migrants Project has only been able to establish that 424 women and 481 children died between 2014 and 2017 trying to cross the Mediterranean. The real figures are likely to be much higher if it is assumed that women and children are at least as likely to die as men during these crossings. Analysis based on UNICEF's methodology of demographic data for those arriving in Italy suggests that at least 1,200 women and 1,300 children died along the Central Mediterranean route between 2014 and 2017 (see chapter 1).

In some countries, non-governmental organizations (NGOs) have been created to assist the families of missing migrants. The primary goal of such agencies is clearly to provide services and assistance to migrant families, rather than collect data. Nonetheless, such organizations may collect useful data that can be used to identify the scale of migrant deaths, the profile of those who die, and the circumstances of a migrant's death. In chapter 5 focusing on the United States, Robin Reineke and her colleagues demonstrate how such data can provide a potentially rich source of information to inform policy. Data collected by NGOs working with and on behalf of migrants across the world could be an important source of information on missing migrants. However, at present, NGOs often work in isolation, and there is no mechanism to support the sharing of non-personal data between such organizations.

Improving identification rates in partnership with families

A second way in which to improve data on missing migrants is to increase identification rates. Data collection on missing migrants has tended to focus on counting the dead and missing, and less on identifying those who have died. Less attention has been given to collecting data from the families left behind who have to live with the consequences of not knowing whether a relative is alive or dead, or how they may have perished. Three chapters in this volume focus on different aspects of this problem.

In chapter 4, Simon Robins reports on the findings of an innovative study focusing on the Mediterranean region. The research conducted by the Mediterranean Missing Project addressed the responsibilities of States and the needs of families. Investigation of the formal and informal practices surrounding the management of bodies in Lesvos and Sicily provided insights into the major problems and gaps in knowledge faced by the families and the authorities. Closer contact with the families of missing migrants is also likely to generate more data about the profile of those who are missing and their reasons for embarking on their journeys.

In chapters 5 and 6, efforts to improve identification rates in the United States and Central America are discussed that may be of relevance to other countries. A key message from these chapters is that much relevant data exists, but too often the coverage is fragmented and scattered between different authorities within countries. Few countries have national databases for missing migrants. Furthermore, there is relatively little sharing of relevant data between countries in the same region. Developing mechanisms to share data more effectively could increase identification rates of missing migrants. There is also a lack of capacity for the identification of migrant remains in many county, regional or city authorities, given the different resources available to forensic services. Practices can also vary within and between countries due to the absence of common identification standards used by forensic services. In response to this challenge, the Border Project (see chapter 6) created "forensic databanks" for missing migrants in several Central American countries. An especially important feature of this initiative is that representatives of the families of missing migrants were invited to work with authorities to develop practices to increase identification rates.

Communicating data differently

Third, improving data on missing migrants also requires more thought and improved practice in the use and communication of such data. It is not sufficient to collect the data if they are not interpreted and presented accurately and in a balanced manner. Globally, the same problems can be observed in media coverage. These problems have been identified by the Ethical Journalism Network (2016) as including the following: (a) censorship, particularly self-censorship; (b) lack of resources; (c) lack of skills and knowledge; (c) casual stereotyping; (d) uniform, superficial coverage of complex questions; (e) inexact use of terminology; (f) undue political pressure; (g) the rise of hate speech; (h) the limited range of sources, including the lack of migrant voice and over-reliance on “official” information; and (i) lack of international focus.

The current standards of media coverage vary widely, and the tone of the content ranges from humanitarian concern to reproduction of negative narratives about migration. Very often the information media provide about migrant fatalities is flawed, inaccurate, incomplete or misinterpreted and exaggerated. Stories of migrant suffering have been illustrated in sensationalist and harmful ways. Clarity is needed about the responsibilities of authorities, researchers and the media towards the victims and their families and a better understanding is needed of the interplay between media reporting, public opinion and establishment discourse. Crucial questions include the following: (a) What are the ethical challenges of reporting on the missing and injured migrants, on the dying and the dead? (b) How can information be presented without dehumanizing the victims or breaching their rights to privacy? (c) What are the specific responsibilities when reporting on children?

In chapter 3, Aidan White and Ann Singleton address these questions and highlight the importance of communicating data about missing migrants sensitively and effectively.

Detailed recommendations are addressed to all who are conducting research and reporting on dead and missing migrants. Such continued efforts, knowledge exchange and training will be needed to ensure that researchers, journalists, NGOs and officials apply the highest standards in working with and reporting the data.

Outline of the report

This report is organized as follows. The first chapter presents an overview of key global trends documenting the number of reported cases of dead and missing migrants worldwide. The second chapter focuses on the potential of using big data to understand search and rescue efforts. The third chapter focuses on media coverage of missing migrants. The following three chapters of the report focus on the gathering of data to facilitate the identification and tracing of missing migrants, so that their families can be better informed about their loved ones.

Julia Black, Kate Dearden, Ann Singleton and Frank Laczko¹

I.1. Introduction

This chapter, produced by the International Organization for Migration's (IOM) Global Migration Data Analysis Centre, examines the available data on migrant deaths for the period January 2014–June 2017. Key figures for regions in which migrant deaths have been recorded are explored. The approximate locations of these incidents are illustrated in regional maps. The chapter also presents a global overview to complement part two of this volume – the regional chapters.

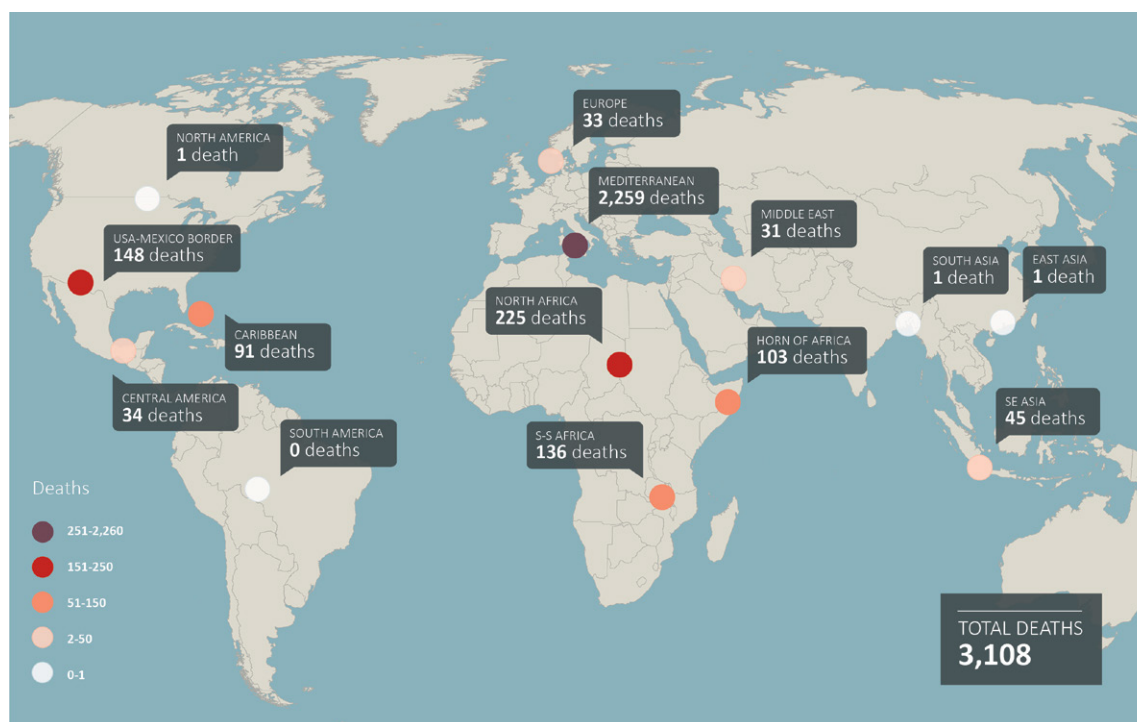
During the first six months of 2017, 3,110 deaths and disappearances of international migrants were recorded worldwide. This figure is lower than the 4,376 recorded in the first half of 2016, but still represents a significant increase over the number of fatalities recorded in the first six months of 2014 and 2015. The year 2017 has been marked by fewer large shipwrecks² in the Mediterranean than in previous years, but as discussed below, nearly 2,200 fatalities were recorded in the Central Mediterranean in the first six months of 2017. Additionally, the 464 migrant fatalities recorded in Africa in the first half of 2017 are significantly fewer than the 1,035 recorded in the equivalent period of 2016. Excluding these two regions, the number of migrant deaths and disappearances recorded between January and June 2017 are comparable to the equivalent period of 2016, and significantly higher than the number recorded in 2015 or 2014.

Total numbers of deaths and cases of missing people reported as lost en route during their migration journeys cannot be known for certain, so data presented here are best understood as minimum estimates. The strengths and limitations of data on migrant deaths and disappearances are discussed in Text Box 1. Since 2014, a year in which more than 5,000 migrant fatalities were recorded, the annual recorded number of deaths during migration has increased each year – totalling more than 22,500 over the four-and-a-half-year period to mid-2017. Almost half of these deaths (nearly 14,500) have been recorded in the Mediterranean, including an estimated 2,500 women and children.³ The next section of this chapter provides an overview of regional trends in migrant fatalities and disappearances for 2016 and the first half of 2017, before discussing what the data indicate about risks faced by women and children during migration and the challenges of collecting such data.

¹ Julia Black is the Project Coordinator for IOM's Missing Migrants Project, and is based at IOM's Global Migration Data Analysis Centre (GMDAC). Kate Dearden is a Data Analyst also working on IOM's Missing Migrants Project at GMDAC. Ann Singleton is Senior Research Fellow at the University of Bristol and Senior Advisor to GMDAC. Frank Laczko is the Director of IOM's GMDAC.

² Defined as incidents in which more than 100 migrants are estimated to have died at sea.

³ For a discussion of the methodology used to create this estimate, refer to the section on "Addressing the challenges of data collection on female and child migrant fatalities" at the end of this chapter.

Map 1. Global migrant fatalities and disappearances worldwide, 1 January–30 June 2017

Source: IOM's Missing Migrants Project, 2017.

Note: Names and boundaries indicated on map do not imply official endorsement or acceptance by IOM.

This chapter draws on data from IOM's Missing Migrants Project, which are collected from many different sources worldwide.⁴ The Project records deaths during international migration, excluding those which take place in refugee camps, migrant detention centres and during or after forced returns. Deaths that occur as a result of social and economic marginalization and exploitation in the labour market; poor or dangerous housing; ill health and lack of access to health care (including maternity services) are also not included. This approach to the data collection and analysis is a pragmatic one, based on a clearly definable category of reports that represent a body of data not otherwise collated at international levels by State or local authorities. The collection and analysis of such data on deaths during migration allows for a better understanding of the scale and incidence of death and disappearance en route and of some of the contributory factors and causes of deaths.

The Missing Migrants Project database provides a global overview of data on migrant fatalities but is dependent on secondary sources. The reliability and completeness of data varies greatly from country to country and region to region. The sources range, for example, from official coroner autopsies on the United States–Mexico border to unverifiable testimonies from migrants who have witnessed the deaths of their peers in North Africa. All data are cross-checked, where possible, with existing data to minimize double-counting, but Missing Migrants Project data are best understood as estimates or indicators of the numbers of migrant fatalities and disappearances worldwide. In most regions, the figures are likely to be gross undercounts of the true number of lives lost.

⁴ For a list of types of data sources used by the Missing Migrants Project, see Text box 1.

Text Box 1. Methodological challenges

by Ann Singleton, Julia Black and Kate Dearden

This report is based on analysis of data on migrant fatalities from a wide range of sources. The data presented are, for the most part, not based on estimates but on reports of deaths and disappearances of migrants. The data sources are indicated in each chapter of this volume (parts 1 and 2), and the source for the global figures is the Missing Migrants Project database (available from missingmigrants.iom.int).

The International Organization for Migration (IOM) decided to start preparing a series of global reports to document migrant fatalities around the world following two shipwrecks off Lampedusa, Italy, in October 2013, when at least 387 migrants lost their lives. The global reports provide a detailed analysis of the data that are collected on a daily basis through IOM's Missing Migrants Project. The latter project monitors and counts migrants who have died at State borders, or in the process of migrating to an international destination. While reporting of migrant deaths has improved since 2014, IOM is acutely aware that there is still a great deal more that needs to be done to improve data collection in some regions of the world.

Caution is therefore needed throughout this report in interpreting the numbers. In most cases, they reflect only that which has been recorded, compiled and reported by a wide range of organizations and individuals, and then gathered by the Missing Migrants Project. The reported numbers of dead and missing migrants collapse together two categories: (a) those known deaths recorded because of the discovery of a body or of some human remains; and (b) those who are reported (usually by survivors) to be missing and who are assumed to have died, often reported on an "incident" basis. These two categories of data are recorded separately in the Missing Migrants database, but are usually reported as a combined total.

Even when deaths are recorded, many migrant fatalities are never identified. Local authorities responsible for the investigation of these deaths are often severely under-resourced, and the consequent ad hoc and/or uncoordinated processes of collecting, recording and preserving data taken from unidentified bodies obstructs processes of identification.

Globally, the data present only some partial insight into the total numbers of people who are dying during migration. Estimating global migrant deaths is difficult largely because of a lack of reliable and comparable data sources.

Readers of this report should note in particular the following:

- It is difficult to compare migration data between regions and countries and over time.
- Data sources used in each country and region vary widely and are often not published regularly or updated.
- Definitions both of "migrants" and of "deaths" are inconsistent across sources, and the definition of a "migrant death" varies between data sources.
- It is often difficult to identify that a death has taken place during migration – e.g. if a person is staying in a transit country and working to earn money for next segment of travel, or is trapped in a country and unable to leave.
- Deaths in immigration detention are excluded.

The table that follows indicates some of the problems and strengths of the various sources used in the Missing Migrants database.

Table 1. Dead and missing migrants: Data quality and the strengths and weaknesses of different sources

Data source	Data format	Where is this information available?
Government: Data on repatriations	Database (bodies)	Mexico, Honduras, Bangladesh, Guatemala, El Salvador
Government: Press releases, official statements	Incident reports	Some countries in Europe, South America
Government: Record of border deaths	Database (bodies)	US counties bordering Mexico
Forensic data (i.e. from medical examiners/coroners)	Database (bodies) or summary figures	US counties on United States–Mexico border, European countries (see Vrije Universiteit’s Deaths at the Borders database ^a)
Coast guards/ police/border patrol/non-governmental organizations (NGOs)	Incident reports	Greece, Italy, Spain, Turkey, Libya, United States–Mexico border
Testimonies of shipwreck survivors	Incident reports	Mediterranean (IOM, United Nations High Commissioner for Refugees (UNHCR)), Bay of Bengal/Andaman Sea (UNHCR)
Testimonies of migrants: Survey programmes	Summary figures. Incident-based database often available on request	Mediterranean (IOM), North Africa (MHub) ^b and Regional Mixed Migration Secretariat (RMMS) ^c , sub-Saharan Africa (RMMS)
NGO reports	Summary figures, incident-based database often available upon request	South-East Asia (Office of the United Nations High Commissioner for Human Rights), Middle East (several NGOs), Western Mediterranean (Asociación Pro Derechos Humanos de Andalucía)
Media: Traditional media reporting	Incident reports	Coverage in Central America, United States–Mexico border, Europe; to a lesser degree in Asia and Africa
Media: Social media	Incident reports	Middle East, Central America, Mediterranean

Notes: ^aSee www.borderdeaths.org/; ^bSee www.mixedmigrationhub.org/; ^cSee www.regionalmms.org/

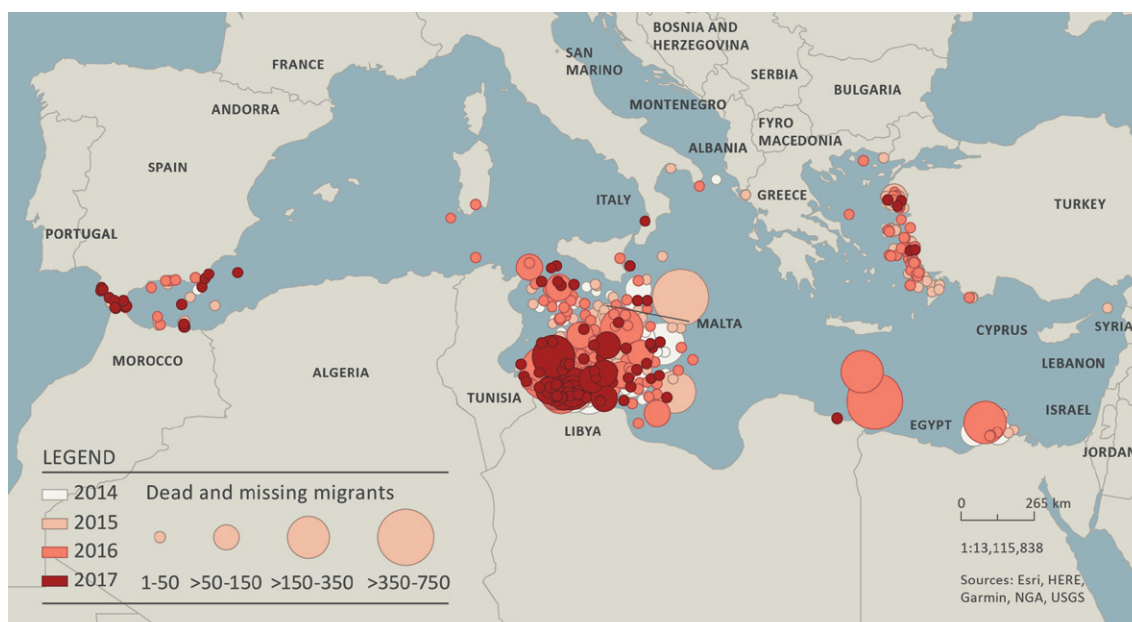
Strengths	Weaknesses
<ul style="list-style-type: none"> • Credible information, covers many cases (not just individual incidents) 	<ul style="list-style-type: none"> • Available for very few countries • Can be outdated • Includes only information on the recovered bodies and not on missing persons
<ul style="list-style-type: none"> • Credible information about individual events 	<ul style="list-style-type: none"> • Available for few, isolated events • Often need to request more detailed information • Usually includes only information on bodies recovered and not missing persons • Media may only report most sensational cases • Different media may report same incident with risk of double counting
<ul style="list-style-type: none"> • (Can) provide credible information 	<ul style="list-style-type: none"> • Coverage is unknown, as many deaths are unidentified as migrants or not reported to consulates
<ul style="list-style-type: none"> • Credible and detailed information about individual incidents 	<ul style="list-style-type: none"> • Data disaggregated by migrant deaths are rarely available (only one example: Pima Country, Arizona) • Includes only information on bodies recovered and not missing persons • Extremely labour-intensive to request information and parse records; consequently often outdated
<ul style="list-style-type: none"> • Credible information for individual cases 	<ul style="list-style-type: none"> • Completeness of coverage is unknown • Often includes only information on bodies recovered and not missing persons (e.g. Spanish coast guard reports)
<ul style="list-style-type: none"> • Indicative data where little other information exists • Useful to estimate number of missing persons at sea 	<ul style="list-style-type: none"> • Impossible to verify reports, survivors may provide range of estimates of missing persons (MMP always uses lowest estimate)
<ul style="list-style-type: none"> • Indicative data where no other data sources exist, interviewees may speak more honestly with interviewers who speak their native language and/or are also migrants 	<ul style="list-style-type: none"> • Impossible to verify reports for veracity or double-counting, sample size is generally small and unrepresentative • Breaks between funding can inhibit comparison • Dates of deaths are often imprecise
<ul style="list-style-type: none"> • (Can) provide credible information from local contexts, sometimes with specialized knowledge from NGO staff. Though usually these are summary figures released annually, NGOs are generally willing to provide underlying data if asked 	<ul style="list-style-type: none"> • Cover only regional or localized areas • Often release data annually as summary figure, which are impossible to check for veracity and double counting • Definition of “migrant death” may vary
<ul style="list-style-type: none"> • Provides current information on events that may not be reported otherwise • Contextual information may be included that doesn’t come across in data sets 	<ul style="list-style-type: none"> • Quality varies significantly, and information can be incomplete or inaccurate • Generally no follow-up reporting (e.g. the aftermath of a car crash) • “Big” news is more likely to receive pickup – i.e. smaller incidents not part of a “crisis” may not be reported • Requires frequent data mining/searching of sources
<ul style="list-style-type: none"> • (Can) provide the most current information about incidents, can foster connections between data sources (e.g. IOM with local NGOs), information about cases not reported in news (e.g. European Asylum Support Office weekly social media monitoring reports^d) 	<ul style="list-style-type: none"> • Little information is provided that can be incomplete or inaccurate • It can be difficult/unfeasible to follow-up to get more information and/or verify • False information can travel quickly • Requires frequent data mining/searching of sources

Note: ^dSee www.easo.europa.eu/news-events/easo-newsletter-0

I.2. Regional analyses

Mediterranean

Map 2. Migrant fatalities and disappearances recorded in the Mediterranean, January 2014–June 2017



Source: IOM's Missing Migrants Project, 2017.

Note: Names and boundaries indicated on map do not imply official endorsement or acceptance by IOM.

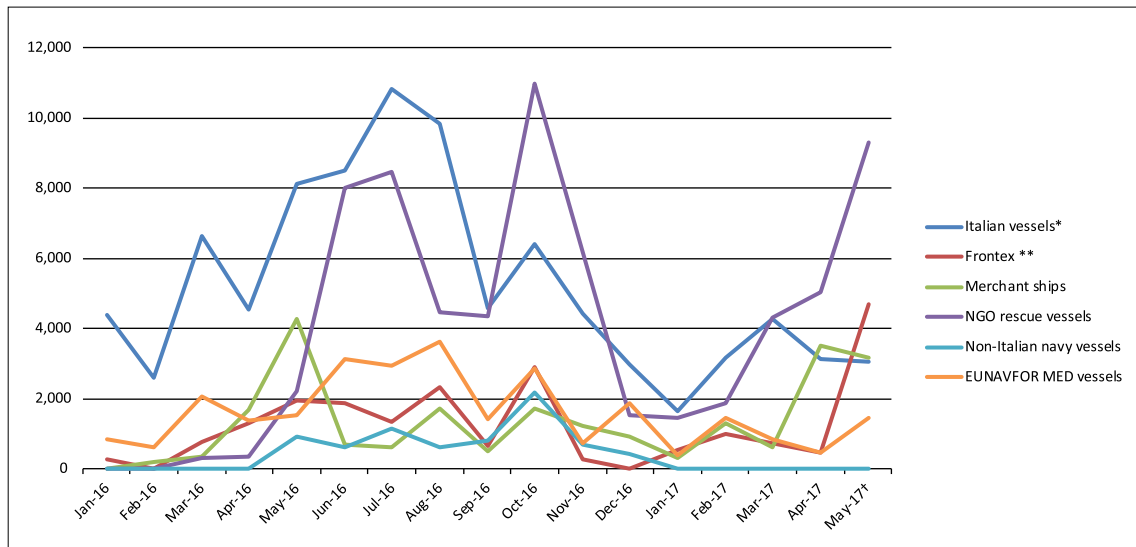
The Mediterranean continues to account for the vast majority of deaths recorded globally. As noted earlier, since 2014, nearly 14,500 deaths in total have been recorded across the region, with 5,143 migrant deaths and disappearances in 2016, the highest number recorded since the year 2000. The rate of death⁵ for migrants attempting to cross the Mediterranean was almost twice as high in 2017 than in 2016. The total of 2,259 fatalities recorded between January and June 2017 was 23 per cent lower than the 2,946 recorded in the first half of 2016. In both 2015 and 2016, the rate of death for migrants crossing the Mediterranean in the first half of the year was about 1.2 per cent, compared with 2.1 per cent in the first six months of 2017. More migrants now cross via the Central Mediterranean than the comparatively short Eastern Mediterranean route and the rise in the death rate was also accompanied by a 23 per cent increase in the number of rescued migrants in the Central Mediterranean during the five-month period (January–May 2017) compared with the same period in 2016 (see Figure 1).

⁵ This "rate of death" is calculated by dividing the number of Mediterranean migrant fatalities by the sum of the following: (a) migrant arrivals to Italy, Greece and Spain; (b) number of migrant fatalities in the Mediterranean; and (c) number of migrants rescued by the Libyan Coast Guard.



Migrants on board a truck leaving from IOM transit centre in Niger. © IOM 2016 (Photo: Amanda Nero)

Figure 1. Monthly search and rescue operations in the Central Mediterranean, January 2016–May 2017



Source: Italian Coast Guard, Rome Maritime Rescue Coordination Centre.

Notes: * Includes rescues by Italian assets assigned to Frontex.
 ** Excludes rescues by Italian assets assigned to Frontex.
 † May 2017 data includes Italian cofinanced assets in Frontex rescues.

Between 2014 and 2016, the majority of migrant fatalities in the Central Mediterranean were recorded during large incidents in which 100 or more people died or went missing. The frequency of such large-scale incidents and the proportion of total deaths attributed to them has declined each year. In the first half of 2017, seven incidents occurred in which 100 or more people died,

totalling 929 dead/missing. During the same period in 2016, 1,848 migrants are estimated to have died in large incidents in the Central Mediterranean, and 1,457 migrant fatalities were recorded in such incidents in the first half of 2015. Most notably, the proportion dying in large-scale incidents in the Central Mediterranean fell from 60 per cent between January and June 2016, to 49 per cent in the first half of 2017. The average number of migrant fatalities per incident decreased during the same period (See Table 2). The marked decrease in the number of large-scale shipwrecks resulting in hundreds of deaths may indicate that search and rescue efforts in the Central Mediterranean were more effective in 2017.

Table 2. Average number of fatalities per incident recorded in the Central Mediterranean, January 2014–June 2017

	Incidents recorded	Total migrant fatalities recorded	Average number of fatalities per incident
2014	20	703	35.15
2015	25	1,764	70.56
2016	45	2,484	55.20
2017	118	2,158	18.29

Source: IOM's Missing Migrants Project, 2017.

Since 2014, more deaths have been recorded on the Central Mediterranean route than any migration route worldwide, with a greater number recorded in 2016 than in the previous two years. The available evidence indicates that the rise in the number of migrant deaths on this route is a result of several factors, including increasingly dangerous smuggling practices (Black et. al, 2017). IOM staff in Libya and Italy have reported that smugglers increasingly use less-seaworthy vessels to send migrants across the Central Mediterranean (ibid.). There has also been an increased number of instances in which multiple boats leave the North African coast at the same time. Additionally, there is evidence that embarking from Libya to Europe is no longer restricted to particular seasons with better weather and sea conditions; the four-month period between November 2016 and February 2017 saw 35,448 arrivals in Italy, a 61 per cent increase compared with the winter months of 2015–2016.

The records of deaths in the Mediterranean do not include all deaths that occur in this body of water, as many people drown and are not recovered from the sea. Without passenger lists of those on boats, IOM relies on the estimates of survivors once they are rescued, with the lowest reasonable estimate always used as the number of missing persons. This information is then cross-checked with that of the United Nations High Commission for Refugees and of various non-governmental organizations (NGOs) operating in the Mediterranean. As such, the numbers of persons known to be missing in the Mediterranean remain, at best, a minimum estimate, especially in large shipwrecks where estimates vary greatly. The number of human remains found on the shores of Libya and Tunisia, which are not associated with any known incident, indicates that many deaths are unknown. During the first half of 2017, the number of bodies found washed up on the shores of North Africa was significantly higher than in previous years. Between January and June 2016, 32 bodies were found in five separate incidents in Libya and Tunisia, while in the first half of 2017, 303 bodies were recovered in 47 separate incidents.⁶ The increased numbers of recovered human remains found on the shores of North Africa may be due to the increased operational capacity of the Libyan Coast Guard.⁷

⁶ The bodies of 74 people were washed up on the shores of Libya on 20 February 2017. A total of 89 additional bodies were recovered on the shores of North Africa between January and June 2017, nearly three times the number recorded in the previous year.

⁷ In June 2016, the Council of the European Union extended Operation Sophia's mandate to include capacity-building and training of the Libyan Coast Guard and Navy (Council of the European Union, 2016).

Europe (deaths on land)

In 2017, an increased number of migrant deaths on land were recorded in Europe compared to previous years. During the first six months, 32 were recorded, whereas the number for the same period in 2016 was 23. In the Western Balkans, a total of 28 deaths were recorded in 2016, 12 of which occurred between January and June. In the first half of 2017, 21 deaths have been recorded on this route, with 7 migrants dying of hypothermia during the winter months. This increase reflects more dangerous conditions given the huge reductions in the number of migrants travelling from Greece through Balkan States in the first quarter of 2017 (see Table 3).

Table 3. Migrant arrivals in Balkan States, first quarter 2016 and 2017

Country	Arrivals Q1 2016	Arrivals Q1 2017	Percentage change
Croatia	102,275	0	-100.00%
Hungary	6,353	336	-94.71%
Serbia	96,117	0	-100.00%
Slovenia	88,187	0	-100.00%
The former Yugoslav Republic of Macedonia	89,623	72	-99.92%

Source: IOM's Displacement Tracking Matrix (DTM), 2017.

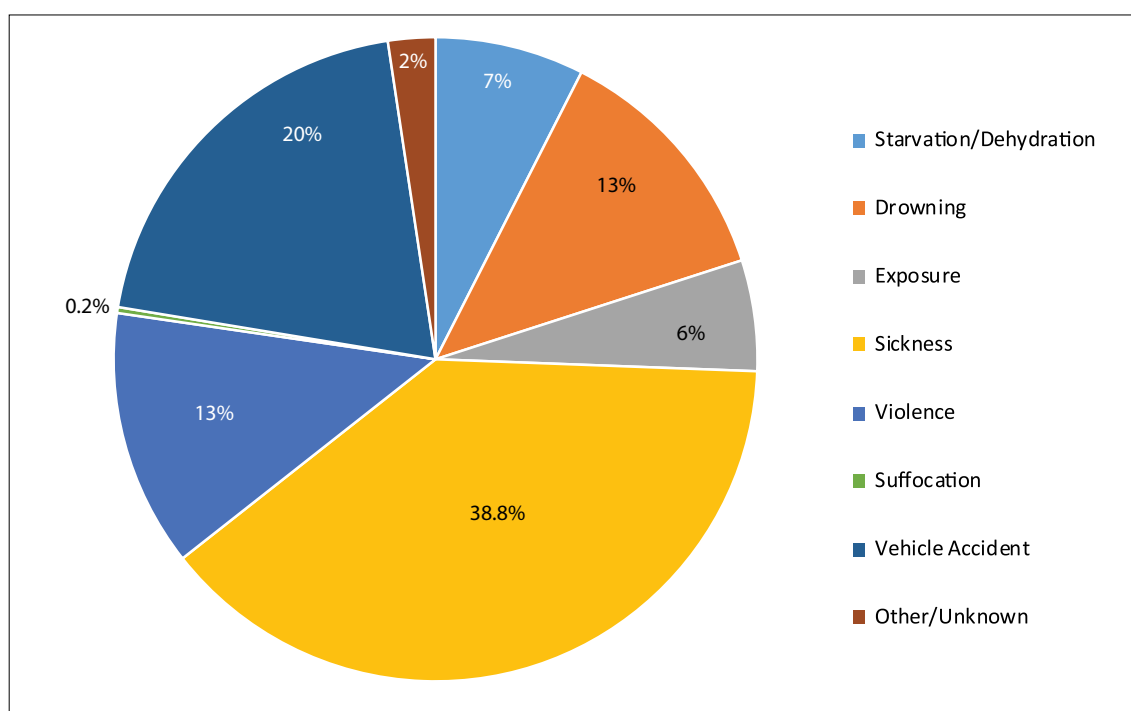
Missing Migrants Project data for Europe also show that migrants often take unsafe modes of travel. Vehicle-related accidents are implicated in roughly three-quarters of deaths recorded in Europe since 2014, totalling 185 migrant fatalities. Of these, 16 occurred between the informal migrant camp in Calais, France and the United Kingdom. The French authorities closed the camp in late October 2016, and one migrant death has been recorded near Calais since.⁸ Eleven train-related deaths of migrants were recorded in the last quarter of 2016 and the first half of 2017 on Italy's borders with France, Switzerland and Austria – the only time such deaths have been recorded by the Missing Migrants Project since 2014. There are no publicly available data on migrant arrivals on this route, but the increase in the number of deaths, and both formal and informal migrant camps along the Italian border (Croce Rossa Italiana, 2017; Spagnolo, 2017), indicate an increase in use, or an increase the risks undertaken by migrants travelling from Italy.

Africa

Missing Migrants Project data show that more than 3,800 migrants have died travelling in Africa since 2014. There are many data challenges in the continent, but it is thought that the majority of incidents occur along routes from Western Africa and the Horn of Africa north towards Libya and Egypt, since 2014 hundreds of fatalities have been recorded in Sahara Desert alone.

Eyewitness testimonies indicate that there are considerable dangers for migrants travelling irregularly through the region. These dangers include the inhospitable geographical terrain, dangerous smuggling practices and insecurity in transit and destination countries. Most of the deaths recorded in North Africa have occurred in remote areas, away from urban centres; however, this may be due to the fact that migrant deaths in cities may not be identified as such. Average temperatures in southern Libya are around 38 degrees Celsius for much of the year, which may contribute to many deaths found in the available data (see Figure 2).

⁸ Although a truck driver was killed in a migrant-related accident in June 2017.

Figure 2. Reported causes of death in North Africa, 2016

Source: IOM's Missing Migrants Project, 2017.

In 2016, 1,380 migrant deaths were recorded in North Africa, compared with 800 in 2015 and 89 in 2014. This stark increase in the recorded numbers reflects the increase over the past three years in the number of migrants from Eastern and Western Africa travelling through North Africa (IOM, 2017). It is also indicative of the risks along this route. The availability of data sources recording deaths has improved to some degree, though many reported fatalities remain unverifiable.

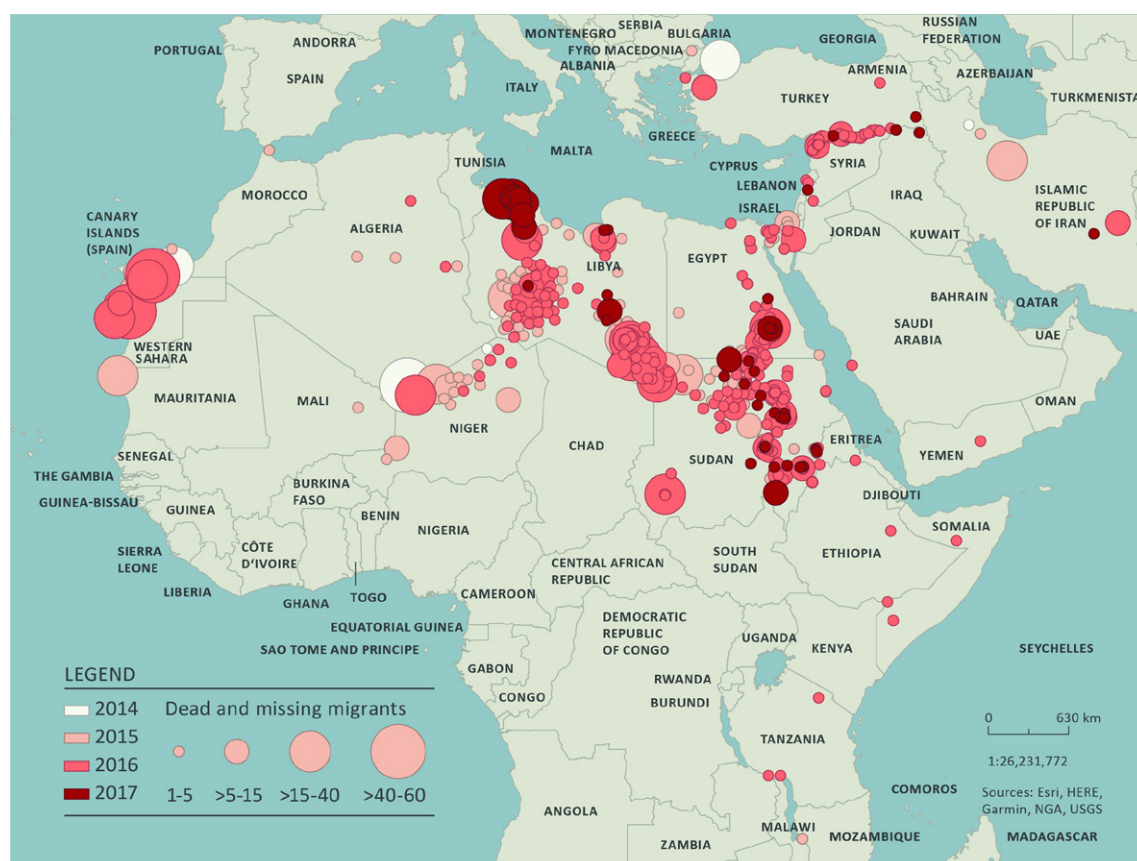
While there are now data where before there were none, there are still shortcomings when it comes to data sources in Africa. The Missing Migrants Project relies largely on media reports, accounts from local IOM missions in the region and surveys of migrants.⁹ In 2014 and 2015, programmes to survey migrants en route were established by the Regional Mixed Migration Secretariat (RMMS) and the Mixed Migration Hub (MHub) (respectively). IOM staff sort the survey data to remove any possible instances of double-counting; however, this process can never be precise as most incidents reported are unverifiable. The recording of deaths reported by these surveys is tied to the schedule and project phases of the surveyors. For example, although the RMMS and the MHub carry out larger surveys than ever before, there can be gaps in data collection and changes to the sample sizes, rendering direct comparison across years virtually impossible.

The survey data provide strong indications that many migrant deaths occur during migration in North Africa. In an MHub survey of 375 migrants in January 2017, 244 interviewees (65%) said that they had personally witnessed a death on their journey, most of these deaths reportedly taking place in Libya. When asked how many deaths they had witnessed, 83 of the migrant interviewees (22%) simply responded "many". Similarly, the majority of more than 1,300 migrants interviewed by RMMS's 4mi between 2014 and 2016 reported witnessing migrant deaths – and again, the majority of which apparently occurred in Libya. Adding to the assertions that as many migrants die in North Africa as in the Mediterranean, in a survey of 136 migrants in Europe, those who travelled through Libya reported that more people travelling on the Central Mediterranean route die in the desert than in the sea (United Nations High Commissioner for Refugees (UNHCR), 2016).

⁹ The surveys are conducted by the Regional Mixed Migration Secretariat's 4mi project, based in Nairobi, and by the Mixed Migration Hub (MHub), based in Cairo.

The 2,497 migrant deaths recorded in North Africa between 2014 and June 2017 is likely a conservative estimate of those who actually died on their journeys. The sample size of approximately 4,000 migrants surveyed by MHub and RMMS is relatively small given that an estimated 330,000 migrants travelled through North Africa via Niger in 2016 (IOM, 2017). Furthermore, continuing reports of migrant deaths in the region indicate not only that North Africa is a very dangerous place for migrants, but that in most cases, the only proof of a person's death is testimonies from their fellow migrants.

Map 3. Migrant fatalities and disappearances recorded in North Africa and the Middle East, January 2014–June 2017



Source: IOM's Missing Migrants Project, 2017.

Note: Names and boundaries indicated on map do not imply official endorsement or acceptance by IOM.

Text Box 2. MHub Survey data in Europe and North Africa

by Amanuel Mehari¹⁰

Mixed Migration Hub (MHub) is the public-facing platform of the North Africa Mixed Migration Task Force (NAMMTF). The Task Force is an inter-agency working group of eight agencies and organizations that aims to promote a human rights-based approach to ensure the protection of people moving in mixed and complex flows to, through and from North Africa. The genesis of the Task Force came about as a result of a recognized need for more collaborative approaches among the key actors in the field, with a view to inform policy and programme development.

¹⁰ Amanuel Mehari is the Coordinator of the North Africa Mixed Migration Hub.

MHub was established as an independent research entity to support the work of the NAMMTF. MHub functions as both the secretariat of the Task Force and as a regional knowledge hub. MHub is hosted by the International Organization for Migration's (IOM) Middle East and North Africa Regional Office and fully financially supported by IOM since 2013. MHub, in its role as knowledge hub to the NAMMTF, undertakes research on irregular migration trends focusing on movements from, through and to Northern Africa.

MHub has developed a field research questionnaire and successfully carried out field data collection to understand the full gamut of the migration process. The questions cover, among other issues, demography of migrants, push and pull factors, vulnerabilities en route, level of organized crime engagement, past and present intentions of migrants and the migration route as narrated by the migrants. MHub has conducted field surveys using the MHub questionnaire in six countries in the region and is currently conducting active collection of data and analysis in Morocco and Italy.

MHub publishes an analysis of the data being collected via the field survey interviews as short monthly survey snapshot documents. To date, MHub has conducted more than 1,500 interviews with newly arrived, migrants, refugees and asylum seekers. The current data being collected are not representative, but provide insights and generates areas for further in-depth research and help to identify future trends.

MHub plans to expand its data collection reach by expanding its staffing and engaging in collaborations with other like-minded organizations to incorporate the various components of the MHub research questionnaire into already existing structures. MHub also provides data analysis support to external partners upon request. MHub has developed and is currently testing in the field an Android app that simplifies the data collection process and analysis of collated data.

One of the initiatives undertaken by the MHub on behalf of the NAMMTF is the development of the Footprints database,¹¹ which is currently in beta release stage and expected to be fully operational by August 2017. The database is a data hub and a knowledge production, analysis and communication tool designed to make the patchwork of information held at the regional, country and individual levels available to stakeholders in an easy-to-use and efficient platform. It is a database composed of a variety of tools created to allow for easy data importing, sharing and analysis.

The database collates existing information on thematic areas that are closely interlinked to mixed migratory movements. This includes information on displacement, conflict, asylum, transit, arrivals and returns and demographic characteristics. The MHub survey data include factors surrounding mixed migratory movements from, to and through Northern Africa. The data currently collated in the database include data from the Internal Displacement Monitoring Centre, the International Institute for Strategic Studies, Italian Ministry of Interior, MHub field survey, Migrantfiles.com, United Nations High Commissioner for Refugees and the World Bank. MHub aims to expand the number of sources and types of data available on the database by incorporating that produced by national governments, international organizations, non-governmental organizations, researchers and the media.

The database is equipped with dynamic visualizations and comparison tools for exploring the complexity of migration in North Africa. Analysed data are available in a variety of exportable formats, including maps, images and spreadsheets on the database and can be exported for further analysis and use in informing policy, programming, advocacy and further research.

¹¹ See <https://footprintsdatabase.info/>

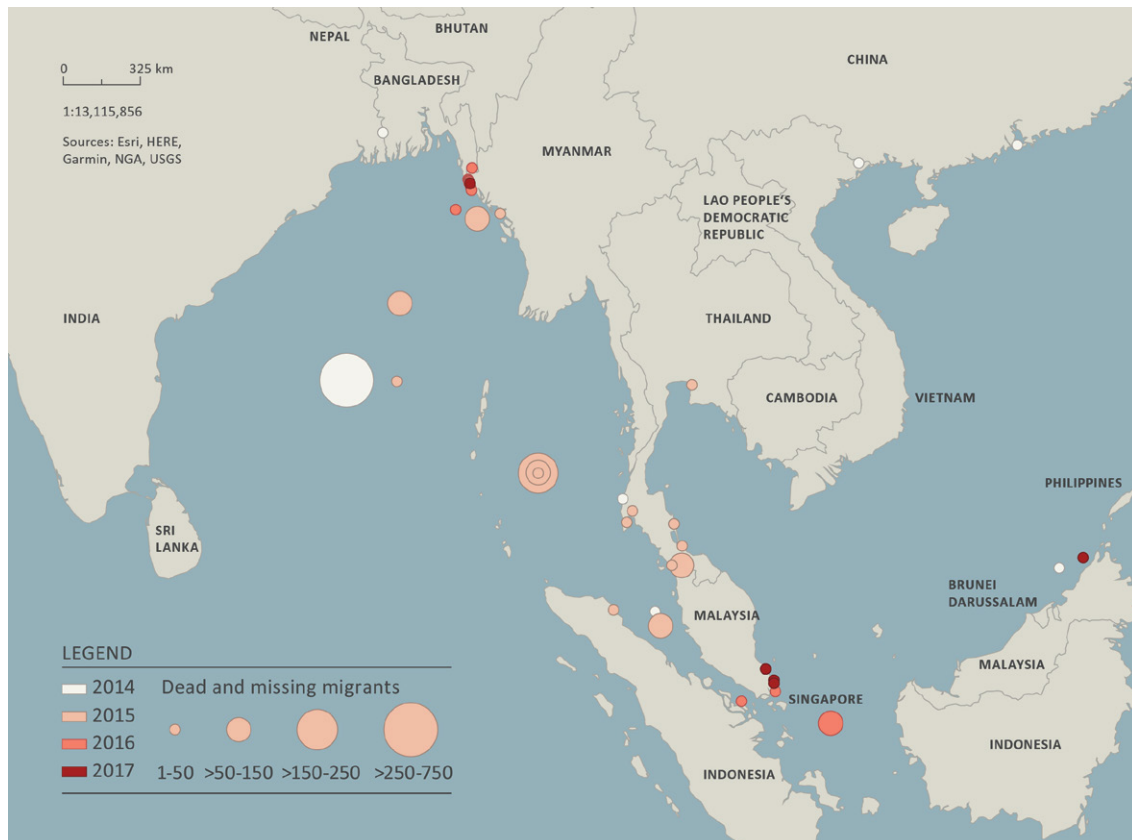
Middle East

In 2016, 114 migrant fatalities were recorded in the Middle East region,¹² a sharp increase compared with the 36 recorded in 2015 and 39 in 2014. The most common causes of death in this region have been due to travel through difficult terrain, including drowning and hypothermia, or violence at international borders.

In the first six months of 2017, 31 migrant deaths were recorded in the region; however there are strong indications that many more migrant fatalities occur that are not captured in the data. A recent study in which 122 Afghan migrants were interviewed in locations across Europe found that all interviewees reported that they had witnessed deaths or personally experienced violence and abuse along their journey (UNHCR, 2016). However, reliable data sources on migrant deaths in the Middle East, such as government reports, are virtually non-existent across the region, and media reporting may not distinguish migrant deaths from those that occurred in ongoing conflicts. The wars in the Syrian Arab Republic, Iraq and Yemen have led the Middle East region to become one of the largest producers of forcibly displaced persons worldwide (Brian, forthcoming). These ongoing conflicts both increase the dangers of journeys out of war-torn countries and reduce the opportunities for detection of deaths during migration (ibid.).

Asia

Map 4. Migrant fatalities and disappearances recorded in Asia, January 2014–June 2017



Source: IOM's Missing Migrants Project, 2017.

Note: Names and boundaries indicated on map do not imply official endorsement or acceptance by IOM.

¹² States in the UN-designated region of Western Asia are categorized here under Middle East, as data on migrant fatalities are more available in this region of Asia. IOM's Missing Migrants Project categorizes incidents into a set of geographical regions defined by current migration patterns and contemporary common language usage.

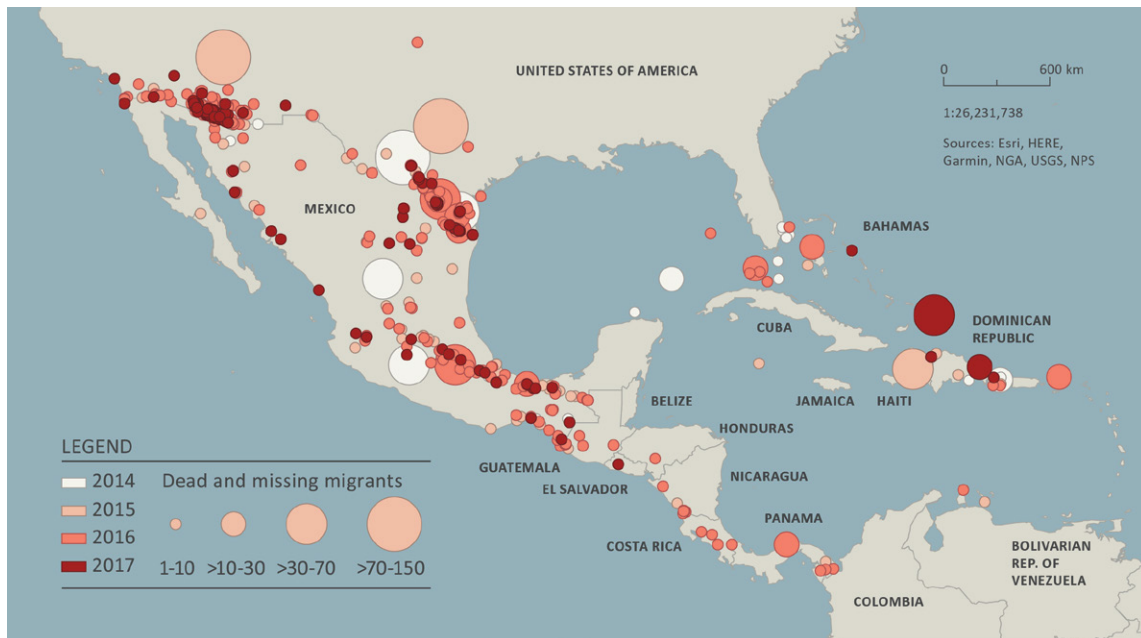
For most of Asia,¹³ the data on migrant fatalities are sparse, as there is currently no systematic collection of data by officials or NGOs on migrants who die en route. Between January 2014 and June 2017, 28 migrant deaths were recorded in East Asia and 3 in South Asia. Again, this is likely to be a gross undercount. The number of migrants who were unable to complete their journeys from, to or within Asia is unknown.

More data are available for South-East Asia, probably because of the relative visibility of migrant deaths at sea and the increased media attention during the Bay of Bengal crisis. More than 1,850 fatalities during overseas migration in South-East Asia were recorded between January 2014 and June 2017. An estimated 800 of these occurred in 2014 and 2015 in the Bay of Bengal and Andaman Sea, when large numbers of stateless persons attempted to reach Thailand and Malaysia from Myanmar and Bangladesh by boat. In late 2016 and early 2017, four boat sinkings between the coasts of Indonesia and Malaysia have resulted in the deaths of more than 100 migrants.

In South-East Asia, 89 per cent of recorded migrant deaths were recorded at sea between January 2014 and June 2017. These deaths include those due to gunfire, torture or beatings that occurred on board ships. However, it is likely that there are many migrant deaths over land that have also gone unrecorded. The discovery of mass graves on the Thailand–Malaysia border in 2015, containing nearly 200 migrant remains, indicate the dangers of irregular overland migration in South-East Asia. However, these deaths are much less visible to authorities, researchers and the media than those at sea, as they often occur in smaller numbers and may be difficult to distinguish from deaths due to factors not related to migration.

Americas

Map 5. Migrant fatalities and disappearances recorded in Central America and the United States–Mexico border, January 2014–June 2017



Source: IOM’s Missing Migrants Project, 2017.

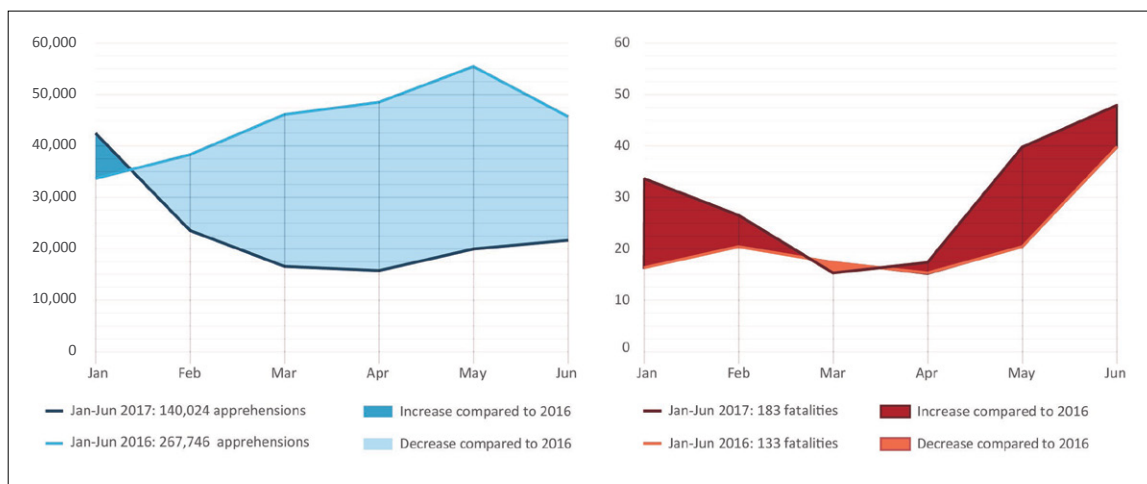
Note: Names and boundaries indicated on map do not imply official endorsement or acceptance by IOM.

¹³ Excluding Western Asia, which is discussed above.

Of the nearly 2,000 deaths recorded in the Americas between 2014 and June 2017 that we know about, most occurred on the United States–Mexico border. These numbers are due to the availability of data from official sources, namely the United States Border Patrol (USBP) and county authorities in the border region. Along the border, irregular migrants avoid coming into contact with authorities in well-patrolled areas and are often forced to cross natural hazards such as the desert of Arizona or the fast-running Rio Grande River. In 2016, 403 deaths were recorded along the border, with 163 inside the state of Arizona and another 198 during the crossing to Texas (of these, 53 died by drowning in the Rio Grande). In 2017, the number of migrant fatalities due to drowning in this border crossing more than doubled compared with the same period in previous years, with 53 deaths recorded between January and June 2017.

Between January and June 2017, 150 migrant deaths have been recorded on the United States–Mexico border, compared to 133 in the first half of 2016, and 81 between January and June 2015. This increase in migrant fatalities comes despite the fact that in 2017, there has been a significant decrease in border apprehensions by the United States of people crossing the border illegally between January and June 2017 compared with previous years (US Customs and Border Protection, 2017).

Figure 3. USBP apprehensions and migrant fatalities, January–June 2016 and 2017



Source: US Customs and Border Protection, 2017; Missing Migrants Project, 2017.

Across the Americas, most of the migrants who die are not identified. The remoteness of many irregular routes means that they may not be found for long periods of time and, consequently, their remains deteriorate. For those whose country of origin is known, between 2014 and 2017, more than 50 per cent came from Central America, predominantly Mexico and Honduras (15.5% each). Another 37 per cent came from the Caribbean, and 4 per cent from South America. In the first half of 2017, twice as many migrant decedents from South America were recorded in Central America compared to the previous year, despite the fact that no deaths within South America itself have been recorded.

In the first half of 2017, 34 deaths were recorded in Central America, a much lower number than that of 56 for the first six months of 2016 but similar to the 37 recorded for the same period in 2015. This route presents numerous risks to migrants, including trekking through remote environments in extreme weather, taking unsafe transportation options and being kidnapped and held for ransom. Missing Migrants Project data for Central America are largely drawn from media reports, many of which are added to the database months, if not years, after the incident occurred. Therefore, the available data are very likely to be lower than the true numbers of migrant fatalities.

In the first seven months of 2017, Canada saw a higher number of people crossing the border by foot to claim asylum than in each of the previous six years (Government of Canada, 2017).

1.3. Who is most at risk?

There is a lack of gender and age disaggregation in the available data on migrant deaths, but anecdotal and qualitative evidence indicates that certain groups are at greater risk of death during migration. Women and children, in particular, are of concern, as there are indications that both of these groups increasingly migrate without men, leaving them vulnerable to violence and exploitation (IOM and UNICEF, 2015; Pickering and Powell, 2017). In recent years, migration has become increasingly differentiated and diverse, which means that, inter alia, an increased number of persons may face vulnerability while migrating (Gerard, 2014; Pickering, 2011).

Many deaths of women and children migrants occur in seas, rivers and lakes, and in large numbers. Their remains are either not recovered from the water, or information about them is not reported by those managing the bodies. It is likely that higher proportions of women and children are included in the data on unidentified migrants (Pickering and Cochrane, 2012). The following section discusses the risks faced by female and child migrants, paying special attention to the shortcomings of existing data on these vulnerable populations, before briefly discussing other at-risk groups.



Risks faced by women during migration

Until relatively recently, female migrants have been largely “invisible” in migration literature or have been mentioned as companions or dependants of male migrants. It is now increasingly recognized in the literature that migration is a gendered process and experience. Female migrants differ from males not only in terms of the legal migration channels available, but the labour sectors into which they enter and the forms of abuse they suffer (Committee on the Elimination of Discrimination against Women, 2009). The estimated 117 million international migrant women worldwide represent just under half of the world’s migrant population (United Nations Department of Economic and Social Affairs, 2015).

The risks involved in irregular migration are often gendered, especially for female migrants who travel alone. In addition to the many non-gendered risks faced during migration, women are exposed to sexual and gender-based violence (SGBV) at every stage of the migration process, regardless of age, marital status or preparation for travel, and are therefore at greater risk of human rights abuses and death during migration than men (IOM, 2015; Falcon, 2001; Gerard and Pickering, 2013). Irregular female migrants face dual discrimination – that is, discrimination both on the basis of their gender and their legal status – at all stages of migration, which may exacerbate exclusion from legal protections and increase the risk of exploitation. Women are often forced to provide sexual services when negotiating border crossings, meaning that those who are repeat border-crossers are at greater risk of abuse (IOM Argentina, 2015; Pickering, 2011).

Data for many regions are not available, or are sparse, but there are strong indications that SGBV is prevalent for women migrating to and through Latin America and North Africa and Europe. In 2010, Amnesty International estimated that 60 per cent of irregular female migrants travelling through Mexico experienced sexual assault, with many female migrants reportedly using birth control pills in anticipation of SGBV during migration (Amnesty International, 2010). Similarly, analysis of data collected by the North Africa Mixed Migration Hub in 2017 indicates that women are much more likely to experience sexual assault and trafficking than their male counterparts.¹⁴ Anecdotal reports indicate that in certain areas, such as refugee camps and immigration detention centres, women are especially vulnerable to sexual abuse, including reports of multiple killings of women who resist sexualized violence and rape (Pickering and Cochrane, 2013).

Female migrants are especially vulnerable to trafficking, related human rights abuses and death (US Department of State, 2016). In addition, anecdotal and qualitative evidence indicates that in many regions, women are drawn into sex work in exchange for assistance during migration (Falcon, 2001; Gerard and Pickering, 2013). In addition to sexual exploitation, trafficked women may be subjected to forced labour, marriage and other practices not dissimilar to slavery, and are also vulnerable to stigmatization after the trafficking experience (IOM Argentina, 2015).

Risks faced by children during migration

It is estimated that one in eight migrants in the world is a child (UNICEF, IOM and UNHCR, 2017). Whether fleeing from conflict and violence or searching for economic and educational opportunities to support themselves and their families, children can be found crossing dangerous terrain and multiple borders, which present serious risks to life at any age. Those who travel unaccompanied or who are separated from their families are at heightened risk, and the proportion of children migrating alone has grown significantly in recent years. UNICEF found that, worldwide, five times as many children were migrating alone in 2015–2016 than in 2010–2011 (UNICEF, 2017).¹⁵

¹⁴ Based on author’s analysis of MHub survey sample of 381 migrants interviewed in Italy in January 2017.

¹⁵ This report only counts migrant children recorded/apprehended at border crossings or in asylum claims. The true number of child migrants is likely to be much higher.

Many risks experienced by irregular migrants are magnified for children. Children who migrate irregularly face greater risk of sickness, injury and violence, as well as trafficking and exploitation compared with their adult counterparts. A 2017 report from Harvard University described a market for sexual services from unaccompanied minors who lack resources to continue their travel. The report finds that young Afghan males are resorting to this practice, while they are stranded in Greece and waiting for their refugee status or to move on to another European country, during which time they are without access to money or the option to legally work (Digidiki and Bhabha, 2017). Other reports from migrants and asylum seekers on social media say that along the migration route through the Balkans, many migrants, including children, have been kidnapped and trafficked (European Asylum Support Office, 2017).

Examining the available fatalities data on vulnerable migrant populations

Although prior to 2014 there was no attempt to collect data on migrant deaths on a global basis, quantitative analyses of regional data collected in earlier years indicate that female migrants are more likely to die or go missing during migration than their male counterparts. (Martinez et al., 2014; Cochrane and Pickering, 2013). In a study examining migrant deaths records collected by the Pima County Office of the Medical Examiner, which has processed more than 95 per cent of migrant decedents found in Arizona since 2003, female migrants were overrepresented in the death rates compared with the share of women apprehended by the US Border Patrol in Arizona, indicating that women are at a higher risk of death during migration across the United States–Mexico border than their male counterparts (Martinez et al., 2014). Furthermore, analysis of shipwrecks in the Mediterranean between 2000 and 2011 indicate that women are more vulnerable to drowning than men. While the exact reasons for this are not clear, other research may shed light on the reasons for this. For example, in an epidemiological study following the 2004 tsunami in Indonesia, it was shown that, in addition to children and older people, women caring for children were more likely to have drowned than other groups (Doocy et al., 2007 in Cochrane and Pickering, 2013).

Qualitative evidence indicates that women’s role as the primary caregiver for their children may place them at additional risk of human rights abuses and, ultimately, of death during migration. Due to the frequency of sexual abuse of female migrants, some women become pregnant during their journey. Pregnant and lactating women have special health needs that often go unaddressed during migration, which may also have negative impacts on the health of the child (Gerard, 2014). Analysis of data from the United States–Mexico border indicates that pregnant women are more prone to death by dehydration, and qualitative and anecdotal evidence suggests that pregnant women in maritime emergencies are at risk of premature birth, which may give rise to life-threatening health issues for both mother and child (Gerard and Pickering, 2013; Pickering and Cochrane, 2012).

Anecdotal evidence also indicates that women and children are more likely to be left behind if they cannot keep up during their journey, which is especially of concern for the many irregular migrants who travel through remote regions in order to avoid detection (Malakooti, 2015). Similarly, migrants report that women and children making overseas journeys are more likely to be placed below deck, where they face heightened risk of fuel inhalation and burns, as well as being more likely to be trapped in the event of a shipwreck (Gerard and Pickering, 2013).

Addressing the challenges of data collection on female and child migrant fatalities

Compounding the issues relating to the general collection of data on deaths during migration discussed above, information on the deaths of migrant women and children is highly contingent on the identification of bodies.¹⁶ Consequently in incidents in which many migrants are lost at sea, the gender and age breakdown of the decedents remains unknown, which is of concern given that the majority of migrant deaths are recorded as taking place over water. Additionally, media articles on migrant deaths often fail to mention the gender and age of the decedents, as do nearly all aggregate figures from NGO and official sources. Data derived from interviews from migrants, such as from RMMS and MHub surveys in Africa, or UNHCR and IOM estimates of missing migrants in the Mediterranean, rarely includes gender or age-disaggregated data. Similarly, many implicitly or explicitly assume that migrant populations are dominated by adult males – meaning that female and child migrants who die during their journeys may not be identified as such, especially in situations complicated by trafficking.

The realities of policy and practice on the ground can make data collection on migrant children generally extremely challenging. For instance, while the number of unaccompanied or separated child arrivals is publicly available information in Greece and Spain, in Spain it is not. Children may also avoid being registered by authorities, or claim to be older than 18 so that they can continue their journeys and not be taken into protection. According to Frontex (2010), child migrants are most often discovered to be unaccompanied at their final destination when applying for asylum, rather than when they arrive at an external border. Additionally, migration data relating to children are often inconsistent, as the definitions and categories used by government officials in the collection of information at border entry points varies significantly. The international legal definition of a minor is a person who is under the age of 18, but various States and agencies use different age categories. Many official sources report only data on unaccompanied child migrants, and may aggregate women and accompanied child migrants. Children avoiding being registered by authorities or claiming to be older than 18, or accompanied by a guardian so that they can continue their journeys and not be taken into protection, is another challenge involved in data collection of migrant flows disaggregated by age (Humphris and Sigona, 2016). This is especially problematic given the high risk of trafficking for both women and children, as data aggregated in such a way prevents an accurate assessment of at-risk populations.

As a result of these difficulties, the completeness of migrant deaths data by gender and age varies greatly by region. Of the incidents of death recorded by the Missing Migrants Project, only half of incidents have information on either age or gender, but the proportion in each region ranges from 5 to 85 per cent (see Table 4). Consequently, the 4,207 migrant decedents who were identified as men, women or children represent less than 20 per cent of the more than 22,500 migrant deaths recorded between January 2014 and June 2017.

That being said, having more demographic information on those who die or go missing is essential to knowing more about the circumstances of deaths, to develop policies to minimize the risks that people face while migrating, and also, and more importantly, to allow for relatives to be traced and notified.¹⁷

¹⁶ Though a rough estimate of the age may be possible for unidentified bodies, if such information exists, it is neither recorded nor published in any systematic way.

¹⁷ For further discussion, see chapters 4 and 5 on the needs of families of the missing or dead.

Table 4. Regional data on migrant deaths by age and gender, January 2014–June 2017

Region	Proportion of incidents containing information on age or gender	Proportion of dead/missing containing information on gender/age	Number of female deaths	Number of child deaths	Number of male deaths	Total number of deaths recorded
Central Mediterranean	36%	12%	375	136	826	12,781
Eastern Mediterranean	86%	84%	201	377	204	1,336
Europe	90%	85%	7	24	173	246
Africa	17%	8%	51	52	118	3,805
South-East Asia*	59%	58%	35	30	285	1,835
United States–Mexico border	80%	52%	51	13	544	1,194
Central America	52%	66%	19	33	179	431

Source: Missing Migrants Project, 2017.

Notes: Only regions in which more than 100 incidents were recorded are included in this table. The omitted regions represent less than 1 per cent of the total number of deaths recorded.

* The figure in South-East Asia includes a UNHCR estimate of the total number of deaths in the Bay of Bengal in 2016, which includes an estimated 250 child deaths.

With very few confirmed data on women and child migrant deaths, estimates could serve to provide a better idea of the dangers faced during migration. However, several assumptions come with making any estimates of migrant deaths; the most significant being: (a) that it is known precisely how many people attempt migration journeys; and (b) that we know how many people die during migration. Neither assumption can be correct. Also problematically, with any estimate of migrant fatalities, an assumption must be made that the risks during migration to men, women and children migrating are the same.

Nevertheless, estimating the numbers of deaths of women and children on the United States' southern border is hypothetically possible based on the number of apprehensions reported by the USBP. The USBP, however, may know how many people are apprehended, but this number will exclude any irregular migrants who escape apprehension. Additionally, the USBP does not collect gender-disaggregated apprehensions data. As many of the bodies that are recovered along the United States–Mexico border have been reduced to bones, children may be identifiable, but distinguishing between sexes based on the bones of adults is more difficult. The lack of gender-disaggregated data, as well as the high likelihood that the available apprehensions data do not reflect the true demographic distribution of migrants crossing this border renders any attempt at estimating the number of child and female migrant fatalities on the United States–Mexico border dubious at best.

The other region for which it is possible to estimate the number of children and women among the dead is in the Mediterranean, as Greek and Italian authorities have recorded relatively¹⁸ complete data on migrant arrivals since 2015. Because of the vastly different geographies and seasonal trends associated with the three routes across the Mediterranean, relatively more accurate estimates are possible for the separate routes. However, in addition to the assumptions discussed above, such an approach excludes the number of men, women and children who attempt the Mediterranean crossing and are returned to Libya and Turkey. This estimate necessarily excludes any migrant deaths that may not have been recorded.

¹⁸ The estimate discussed below uses only months in which the monthly arrivals data in Italy or Greece are available with complete demographic information. This means that the resulting estimate excludes fatalities on the Eastern Mediterranean except for 2016, the Central Mediterranean prior to 2015, and the Western Mediterranean entirely.

IOM's Missing Migrants Project has recorded the deaths of 658 women and 532 children of nearly 13,000 total fatalities in the Mediterranean between January 2014 and June 2017. However, the age and gender of more than 10,000 of these migrant deaths is unknown. By assuming that women and child migrants are as likely to die as their male counterparts, it is possible to estimate that at least 1,200 women have died in the Mediterranean during this period, as have at least 1,300 children. These estimated numbers are large compared with the confirmed cases, and the assumptions discussed above mean that any such figures should be treated as estimates. Nonetheless, the extensive literature testifying to the heightened risks faced by children and women during migration indicate that these 2,500 fatalities minimize the true number to have died the Mediterranean in recent years.¹⁹

I.4. Conclusion and recommendations

From region to region, data on migrant fatalities are, at best, estimates and at worst, serious undercounts of the real number of deaths and disappearances during migration. While the frequency of deadly incidents at sea means that data on migrant fatalities on these routes will always be approximate, the significant number of deaths that remain undetected are estimated as being between three to ten times the number of bodies currently recovered (Blanchard et al., 2008 in Pickering and Cochrane, 2012). Therefore, the data collected by the Missing Migrants Project, and the analysis of the trends in migrant fatalities presented in this chapter, should be understood in the context of the serious need for more robust reporting mechanisms and research into the issue of deaths during migration. Expanding data collection and reporting enables empirical analysis of trends in migrant fatalities, which can further strengthen policy effectiveness. Where possible, this data should be sex- and age-disaggregated, in order to better understand the risks specific to women and children on migration routes worldwide.

Migrants, refugees and asylum seekers alike deserve the right to life regardless of their motivation for migration. Although the data collected by the Missing Migrants Project are highly incomplete, these data enable investigation into an issue that is largely overlooked. However, as evidenced by the highly variable quality of data from region to region, the issue of improving data collection on migrant fatalities, though a global one, is a problem that needs to be addressed at a local level. The many excellent suggestions for improvement of data on migrant deaths presented in the following chapters, if carried out, will lead to a better understanding of the risks migrants face on their journeys in each region, and a more comprehensive picture of migrant fatalities worldwide.

¹⁹ The authors are grateful to Jan Beise for his guidance on the UNICEF method for estimating the number of child fatalities in the Central Mediterranean.

References

Amnesty International

- 2010 *Víctimas Invisibles: Migrantes en movimiento en México*. Amnesty International Publications, London and Madrid. Available from www.amnesty.org/en/documents/AMR41/014/2010/en/%20

Black, J., K. Dearden and A. Montes

- 2017 Migrant deaths and disappearances worldwide: 2016 analysis. *Global Migration Data Analysis Centre Briefing Series*, Issue 8. IOM, Geneva. Available from https://publications.iom.int/system/files/pdf/gmdac_data_briefing_series_issue_8.pdf

Brian, T.

- The Middle East and North Africa. In: *Fatal Journeys volume 3 Part 2: Regional Reports*. IOM, Geneva (forthcoming).

Committee on the Elimination of Discrimination against Women

- 2008 General recommendation No. 26 on women migrant workers. CEDAW/C/2009/WP.1/R. Available from www2.ohchr.org/english/bodies/cedaw/docs/GR_26_on_women_migrant_workers_en.pdf

Council of the European Union

- 2016 Council Decision (CFSP) 2016/993 of 20 June 2016 amending Decision (CFSP) 2015/778 on a European Union military operation in the Southern Central Mediterranean (EUNAVFOR MED operation SOPHIA). L 162/18. Available from <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016D0993&from=EN>

Croce Rossa Italiana

- 2017 *Ventimiglia: dal campo Roya sogni e speranze di migranti in transito*. Available from www.cri.it/09-11-2016-migranti-ventimiglia-campo-roya-croce-rossa

Digidiki, V. and J. Bhabha

- 2017 *Emergency Within an Emergency: The Growing Epidemic of Sexual Exploitation and Abuse of Migrant Children in Greece*. FXB Center for Health and Human Rights, Harvard University, Cambridge. Available from <https://cdn2.sph.harvard.edu/wp-content/uploads/sites/5/2017/04/Emergency-Within-an-Emergency-FXB.pdf>

European Asylum Support Office

- 2017 *Social Media Monitoring – Monthly Analytical Report June 2017*. EASO, Valletta.

Falcon, S.

- 2001 Rape as a weapon of war: Advancing human rights for women at the U.S.-Mexico border. *Social Justice*, 28(2):31–50.

Frontex

- 2010 Unaccompanied Minors in the Migration Process. Frontex, Warsaw. Available from http://frontex.europa.eu/assets/Attachments_News/unaccompanied_minors_public_5_dec.pdf

Gerard, A.

- 2014 *The Securitization of Migration and Refugee Women*. Routledge, Oxon.

Gerard, A. and S. Pickering

- 2013 Gender, securitization and transit: Refugee women and the journey to the EU. *Journal of Refugee Studies*, 27(3): 338–359.

Government of Canada

- 2017 Asylum Claimants Processed by Canada Border Services Agency (CBSA) and Immigration, Refugees and Citizenship Canada (IRCC) Offices, January 2011 - July 2017. Available from www.cic.gc.ca/english/refugees/asylum-claimants-historical.asp

Humphris, R. and N. Sigona

- 2016 Children and unsafe migration in Europe: Data and policy, understanding the evidence base. *Global Migration Data Analysis Centre Briefing Series*, Issue 5. Available from <http://gmdac.iom.int/gmdac-data-briefing-5>

International Organization for Migration (IOM)

- 2017 Displacement Tracking Matrix Flow Monitoring Report – Niger (May 2017). IOM, Geneva. Available from https://drive.google.com/drive/folders/OB_hLuy9q1oXQT3NNOWN5RVdwc1E
Migrant Vulnerability to Human Trafficking and Exploitation: Evidence from the Central and Eastern Mediterranean Migration Routes. IOM, Geneva (forthcoming).

IOM Argentina

- 2015 *Migrant Women and Gender Violence: Strategies and Perspectives for Interventions*. IOM, Buenos Aires. Available from http://argentina.iom.int/co/sites/default/files/publicaciones/Manual_OIM-ENG-web-23-11.pdf

IOM and UNICEF

- 2015 Migration of children to Europe. IOM and UNICEF Data Brief, 30 November. Available from www.iom.int/sites/default/files/press_release/file/IOM-UNICEF-Data-Brief-Refugee-and-Migrant-Crisis-in-Europe-30.11.15.pdf

Malakooti, A.

- 2015 *Migration Trends Across the Mediterranean: Connecting the Dots*. Altai Consulting for IOM MENA Regional Office. Available from www.altaiconsulting.com/wp-content/uploads/2016/03/Altai_Migration_trends_accross_the_Mediterranean.pdf

Martinez, D.E. et al.

- 2014 Structural violence and migrant deaths in Southern Arizona: Data from the Pima County Office of the Medical Examiner, 1990-2013. *Journal on Migration and Human Security*, 2(4):257–286.

Pickering, S.

- 2011 *Women, Borders, and Violence: Current Issues in Asylum, Forced Migration, and Trafficking*. Springer, New York.

Pickering, S. and B. Cochrane

- 2012 Irregular border crossing deaths and gender: Where, how and when women die crossing border. *Theoretical Criminology*, 17(1):27–48.

Pickering, S. and R. Powell

- Asia-Pacific. In: *Fatal Journeys volume 3 Part 2: Regional Reports*. IOM, Geneva (forthcoming).

Chapter 1

Global overview of the available data on migrant deaths and disappearances

Spagnola, A.

- 2017 Ventimiglia, il ritorno dei migranti sulle sponde del torrente Roja. *Riviera24*, 27 January. Available from www.riviera24.it/2017/06/ventimiglia-il-ritorno-dei-migranti-sulle-sponde-del-torrente-roja-258505/

United Nations Department of Economic and Social Affairs (UN DESA)

- 2015 International migrant stock – 2015. Available from www.un.org/en/development/desa/population/migration/data/estimates2/estimates15.shtml (accessed 17 July 2017).

United Nations High Commissioner for Refugees (UNHCR)

- 2016 *From a Refugee Perspective: Discourse of Arabic speaking and Afghan refugees and migrants on social media from March to December 2016*. Available from <https://data2.unhcr.org/en/documents/download/58018>

United Nations Children's Fund (UNICEF)

- 2017 *A Deadly Journey for Children: The Central Mediterranean Migration Route*. Available from www.unicef.org/publications/files/EN_UNICEF_Central_Mediterranean_Migration.pdf

UNICEF, IOM and UNHCR

- 2017 *Refugee and Migrant Children: Including Unaccompanied and Separated Children in the EU – Overview of Trends in 2016*. Available from <https://data2.unhcr.org/en/documents/download/55971>

United States Customs and Border Protection

- 2016 *Southwest Border Migration*. Available from www.cbp.gov/newsroom/stats/sw-border-migration (accessed 17 July 2017).

United States Department of State

- 2016 *Trafficking in Persons Report, June 2016*. Available from www.state.gov/documents/organization/258876.pdf

Chapter 2

Using big data to study rescue patterns in the Mediterranean

Katherine Hoffmann, Jeremy Boy, James Leon-Dufour, Duncan Breen, Christopher Earney and Miguel Luengo-Oroz²⁰

2.1. Introduction

In 2016, over 363,000 migrants and refugees are known to have arrived in Europe by sea (International Organization for Migration (IOM), 2017). Migrants and refugees are counted in two ways: (a) when they reach Europe and their arrival is recorded and administratively processed by the authorities; or (b) when they are reported dead or missing at sea. However, there is much less quantitative data available on the conditions of their journeys across the Mediterranean.

In 2016, 5,143 migrants and refugees were reported dead or missing in the Mediterranean Sea (ibid.). This represents 1.17 per cent of all those attempting the maritime crossing into Europe – as if every boat or rubber raft lost at sea is accompanied by 80 other vessels that are successfully rescued. Furthermore, from January 2014 to April 2017, over 17 per cent of all reports of dead and missing people in the Mediterranean include references to accompanying survivors (see Figure 4) (IOM, n.d.), implying that many who die or disappear are on board vessels that are attended to by search and rescue operations. This highlights the need for better understanding of the maritime crossings and rescues, in the study of missing migrants and refugees. Reducing the numbers of deaths and missing people requires an understanding of the entire process of maritime crossing, to identify where the greatest dangers lie and to more effectively direct rescue efforts.

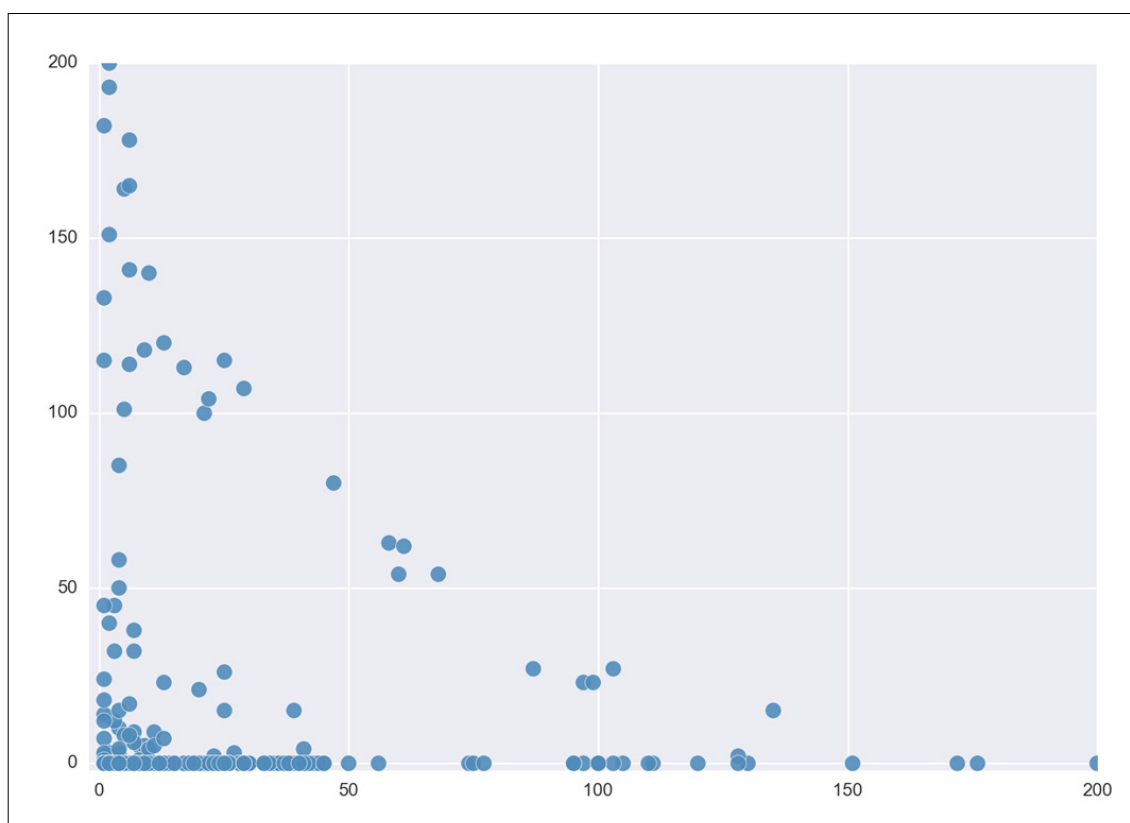
This chapter explores the potential of big data to further understand human migration in the Central Mediterranean. It presents an original combination and analysis of two readily available data sets: (a) ship Automatic Identification System (AIS) data,²¹ which can reveal patterns of search and rescue operations; and (b) Broadcast Warning data, which disclose maritime alerts, issued on behalf of migrant and refugee vessels in distress. The advantages and disadvantages of these data sources are addressed below, with a focus on the types of questions they can answer. Several examples are included, which highlight how these data have been used in a joint effort between UN Global Pulse and United Nations High Commissioner for Refugees, to generate insights on the situation in the Central Mediterranean. The chapter concludes with a discussion of how new methodologies that coincide with the rise of big data – specifically, artificial intelligence – may be applied to these data sets for the study of migratory phenomena at scale.

²⁰ Katherine Hoffmann is a Data Science Fellow at UN Global Pulse and PhD candidate at New York University. Dr Jeremy Boy is a Data Visualization Specialist at UN Global Pulse based in New York. James Leon-Dufour is an Information Management Officer at the United Nations High Commissioner for Refugees (UNHCR) Bureau for Europe and UNHCR Innovation Fellow. Duncan Breen is a Communications and Advocacy Officer at the UNHCR Bureau for Europe. Christopher Earney is co-founder and Deputy Director of the UNHCR Innovation service in Geneva. Dr Miguel Luengo-Oroz is Chief Data Scientist at UN Global Pulse, a United Nations innovation initiative that leverages big data and artificial intelligence for sustainable development and humanitarian action. UN Global Pulse thanks the Government of the Netherlands for its support. The opinions expressed in this paper are those of the authors and do not necessarily represent the position of the United Nations or the UNHCR.

²¹ AIS data is available in real time. It is possible to retrieve archived broadcast warnings within a matter of a few days.

Big data, and their associated methodologies, can be considered complements to more traditional approaches to counting missing migrants and refugees. They can help further highlight the need for safe and legal passage as an alternative to such dangerous journeys, and can strengthen the capacity and preparedness of search and rescue operations responding to the sustained tragedy in the region. More generally, big data can act as a valuable tool in the arsenal of methods for the study of the numbers of dead and missing people in the process of global human migration.

Figure 4. Reports of dead and/or missing people in the Mediterranean by number of survivors, January 2014–April 2017



Note: Extreme incidents with more than 200 dead or surviving are not shown. Data accessed on 25 April 2017.

Source: IOM Missing Migrants Project, 2017.

2.2. Discussion of best practices: New data sources

2.2.1. The data revolution

The idea of using data to better understand a situation, to make decisions and to advocate for change is not new. Governments, non-governmental organizations (NGOs) and businesses have a long and rich history of collecting detailed information and acting upon extracted insights. However, the growing availability of new data sources, and the rapid emergence of innovative methodologies for understanding them, is fundamentally changing these processes. A “data revolution” is taking place, both in the type, and in the scale of information available. In general, these big data are (relatively) easy to acquire, comprehensive in nature and updated in real or near real time.²²

²² Some big data sets are publicly available, while others must be purchased or obtained through partnership agreements. A guide to data innovation for development, including advice for working with new data sources, can be found in UN Global Pulse (2016b:31).

Big data frequently leverage information that was generated for a purpose other than the one at hand.²³ For example, Twitter users' complaints about high food costs can become a proxy indicator for food price fluctuations (UN Global Pulse, 2014b). As a result, these data may be relatively inexpensive to obtain, since the biggest costs are those of data storage and transfer, rather than those of data collection. The data can also be acquired in retrospect if needed. For example, bank financial transactions can be used to study the economic impact of a hurricane in its aftermath, even if it was impossible to establish an impact evaluation system beforehand (UN Global Pulse, 2016a).

Since big data are often passively generated by people – when calling with a cell phone, navigating from one place to another, or “liking” a friend’s social media post – they also carry the advantages of high frequency and large scale. Rather than requiring elaborate sampling methods to achieve a representative survey, big data can be used to approximate comprehensive, population-level coverage of a phenomenon of interest.²⁴

These uses of big data have traditionally been spearheaded by data-rich industries, such as online advertising, and high-frequency financial trading. However, the data revolution is gaining traction within the development community and the United Nations system (UN Secretary-General, 2014), as a tool for measuring and achieving the Sustainable Development Goals. This chapter contributes to this strategic effort by exploring the potential of two new sources of big data for the study of human migration: AIS data on vessel movements at sea, and broadcast warning data containing maritime alerts. It begins with a discussion of how these data sources can be used, along with their strengths and weaknesses.

Big data for migration

A number of studies have used big data to study global migration and movement patterns (de Backer, 2014). Some examples include:

- A study that used the volume of online search queries to estimate interest in migration to Australia (UN Global Pulse, 2014a);
- Research that paired Facebook records of individuals' hometowns and current cities of residence to study coordinated migration from one city to another (Hofleitner, 2013);
- A study that looked at e-mail account logins from IP addresses in different geographic locations to study tourism and migration flows (State, Weber and Zagheni, 2013);
- Research that used analysis of the Ebola genome to study the geographic evolution of the epidemic associated with human mobility (Dudas et al., 2017);
- The use of cell phone call detail records to track population displacement in the aftermath of the 2010 Haiti earthquake, and the 2015 Nepal Earthquake (Lu, Bengtsson and Holme, 2012; Wilson et al., 2016);
- Two Data for Development (D4D) challenges in which several scientific groups used mobile phone network data to study mobility patterns in Senegal and Côte d'Ivoire (NetMob, 2013, 2015); and
- Research examining the use of postal data to track communication flows between countries and proxy economic well-being (Hristova et al., 2016).

²³ This is also a matter of concern for ethical and privacy reasons, which are discussed later in this chapter.

²⁴ Of course, no use of big data is valid without an examination of potential bias; any discussion of “population-level” coverage should always be cognizant of those undercounted or ignored, and this limitation is described in more depth below.

2.2.2. Automatic Identification System data

The first section of this chapter is an exploration of the potential of AIS data to track rescue ships that work actively in the Central Mediterranean. AIS is a maritime communications system through which passenger ships, cargo ships over 500 tons, and international ships over 300 tons regularly broadcast both *static* information – including their identifiers, their vessel type and the flag under which they sail – and *dynamic* information – including their latitude and longitude, speed, course over ground and destination (International Maritime Organization (IMO), n.d.). This information is used by maritime authorities and ships to locate nearby vessels and avoid collisions. Figure 5 shows aggregated traffic patterns derived from two weeks' worth of AIS data in the Mediterranean.

Figure 5. AIS traffic over two weeks in the Central Mediterranean, 11–25 April 2015



Source: UN Global Pulse, 2017.

NGO-led rescue activities have accelerated substantially in the Central Mediterranean since April 2015, offering the potential to leverage AIS data from the region on a large scale.²⁵ AIS data have already been used to characterize ship behaviour in a wide variety of applications, including efforts to automate recognition of fishing activity and detect anomalies for port security purposes (Mazzarella et al., 2014; Natale et al., 2015; Rhodes et al., 2005; Ristic et al., 2008; Vespe et al., 2012). Recent seminal work has also used AIS data to investigate individual rescue incidents – in particular, the mass tragedies that occurred on 12 and 18 April 2015 (Heller and Pezzani, 2016).

The strengths of AIS data include regular reporting at short-time intervals, and (relatively) comprehensive coverage of maritime movement. AIS transmissions occur as often as once every two minutes, which provides extremely fine-grained information on vessel behaviour (see Figure 5). AIS data can be collected by anyone with a receiver,²⁶ and the typical range of a receiver is 15 to 20 nautical miles, with a maximum of about 60 nautical miles – although satellite receivers have been used to extend this range further offshore (All About AIS, n.d).

²⁵ According to the Italian Coast Guard, the number of people rescued by NGOs in the Central Mediterranean jumped from 1,450 in 2014 to 20,063 in 2015 and 46,796 in 2016. In 2016, NGOs were responsible for 26 per cent of all people rescued (MRCC, 2016:4).

²⁶ An AIS receiver is a piece of commercially available hardware; receivers might be used on shore and in ports to collect AIS data, or mounted on ships that are not required to transmit AIS signals. Some companies also gather data with satellite receivers, as noted above. AIS messages can also be collected by transceivers (such as those typically mounted on ships), which are also capable of transmitting AIS messages (Raymarine, 2016).

A number of organizations and companies aggregate these data and share or sell them in the form of compiled data sets (exactEarth, n.d.; OrbComm, n.d.; MarineTraffic, n.d.(b); VesselFinder, n.d.; VesselTracker, n.d.; Open Weather Map Automatic Identification System, n.d.; and FleetMon, n.d.). Tu et al. (2016) review the strengths and weaknesses of common AIS providers, considering factors such as the temporal resolution of the reporting, the precision in latitude and longitude readings, and whether the data are historical or available in real time. Regardless of the source, AIS data typically require pre-processing steps, such as removing positions erroneously reported on land, inferring gaps between points to create trajectories, and identifying mistakes in the entry of ship names and identifiers (such as a single ship entered under different names, or different ships entered under the same identifier).

2.2.3. Broadcast warning data

The second section of this chapter addresses the use of broadcast warning data to capture the positions of migrant vessels, in order to supplement the inferences drawn from the trajectories of rescue ships. Broadcast warnings are produced by the World-Wide Navigational Warnings Service, and are used to warn ships of potential safety risks in a region. They contain a wide variety of information – including alerts on vessels adrift at sea, cable laying operations and debris in the water. Most importantly for the purposes described here, they also notify ships of nearby emergencies, invoking a responsibility to respond according to the 1974 International Convention for the Safety of Life at Sea (SOLAS).²⁷

The strengths of broadcast warning data are that they are consistent, repeated records with coverage dating back to 1993, which often include an estimate of the number of people on board, and the approximate GPS coordinates of the ship. Broadcast warnings are an excellent supplement to AIS data, because they provide an objective observation of migrants and refugees in distress at sea even before rescue operations begin.

However, like AIS data, broadcast warnings require some pre-processing to be truly useful. To create a data set for quantitative analysis, data from the Mediterranean region were collected from the US National Geospatial-Intelligence Agency, and processed to select relevant records (National Geospatial-Intelligence Agency, n.d.). The warning text was automatically parsed to extract date and time information, GPS coordinates, the number of people on board, and other incident characteristics. Figure 6 shows a sample message from the region, along with the extracted features.

²⁷ Chapter V, Regulation 10 of this convention states: “The master of a ship at sea, on receiving a signal from any source that a ship or aircraft or survival craft thereof is in distress, is bound to proceed with all speed to the assistance of the persons in distress informing them if possible that he is doing so” (UN Treaty Collection, 1974).

The 1979 International Convention on Maritime Search and Rescue further requires that “assistance [is] provided to any person in distress at sea ... regardless of the nationality or status of such a person or the circumstances in which that person is found” and that effort is made to “provide for their initial medical or other needs, and deliver them to a place of safety” (IMO, UNHCR and International Chamber of Shipping, 2015).

Figure 6. Sample broadcast warning with automatically extracted features

```

HYDROLANT 934/2015 (53,56)
(Cancelled by HYDROLANT1007/2015)
EASTERN MEDITERRANEAN SEA.
LIBYA.
DNC 09.
VESSEL, 700 PERSONS ON BOARD, CAPSIZED IN 33-57N 014-28E.
VESSELS IN VICINITY REQUESTED TO KEEP A SHARP LOOKOUT,
ASSIST IF POSSIBLE. REPORTS TO ITALIAN COAST GUARD
VESSEL GREGORETTI CP 920, PHONE: 8707 7314 1107
OR MRCC ROME,
INMARSAT-C: 424744220,
PHONE: 39 065 908 4527, 39 065 908 4409,
FAX: 390 6592 2737, 3906 5908 4793,
E-MAIL: ITMRCC@MIT.GOV.IT.
( 182359Z APR 2015 )

```

Date	Sea	Country	People	Vessels_ multiple	Status	Latitude 1	Longitude 1
4/18/2015 11:59:00 PM	Eastern Mediterranean Sea	LIBYA	700	No	Capsized	33.95	14.46667

Source: National Geospatial-Intelligence Agency, 2015 and UN Global Pulse, 2017.

2.3. Data use cases

AIS data and broadcast warnings have the potential to advance the understanding of migrants and refugees' journeys in the Mediterranean, and to better explain the events that lead to migrants and refugees dying or going missing. This section describes how these data can be used to support existing observations and generate new insights. It highlights ideas for potential use cases and describes current work in progress.

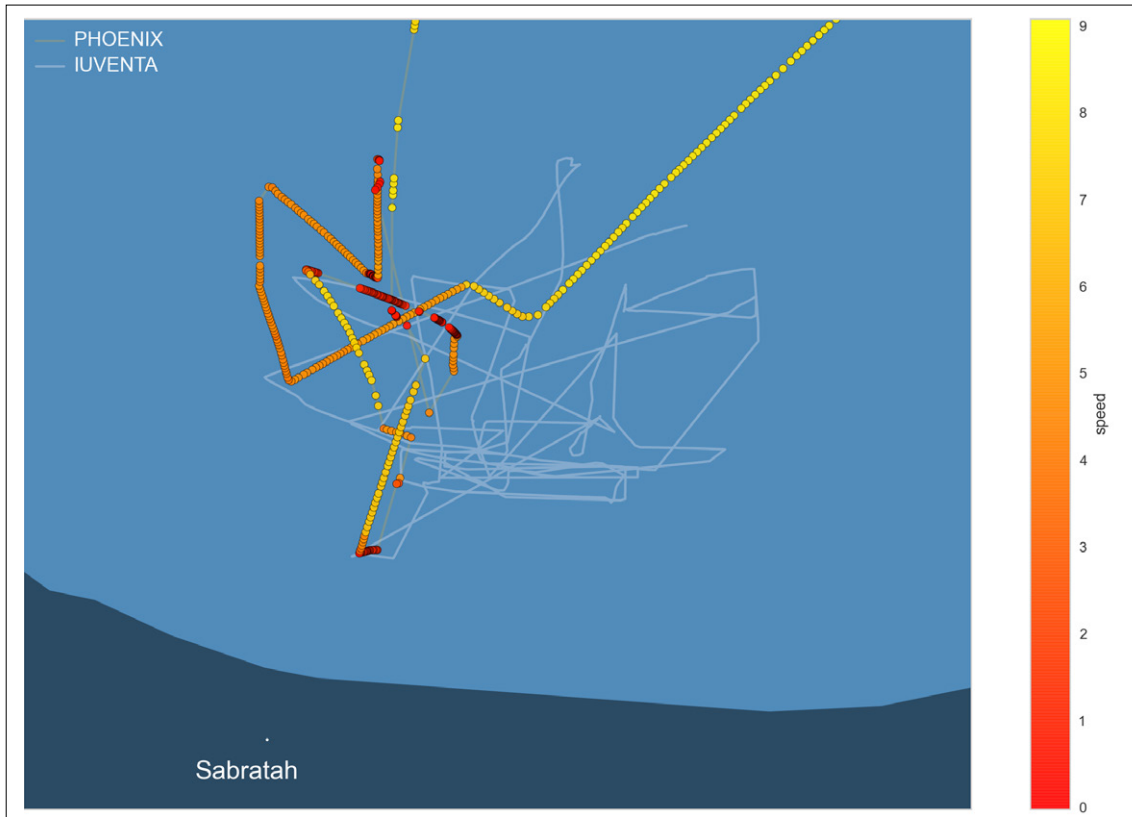
The quantitative approach presented here adds two distinct insights to supplement the large amount of qualitative, descriptive coverage already produced by NGOs and the news media. First, reporting on individual rescue efforts can be less than comprehensive, and tends to focus on the most dramatic or severe incidents; in contrast, this approach captures the routine, "successful" rescues that occur almost every day, and often go underreported. Second, while first-person accounts anecdotally highlight emerging trends in the rescue situation, it is hard for external observers to obtain a high-level picture of what is happening in the region over time. An overview of these patterns is critical for coordination and advocacy purposes; it enables stakeholders to see the true magnitude of rescue operations, and to quantify costs, shortcomings and future needs.

2.3.1. The quantified rescue

The primary building block of the analysis described below is the quantified rescue: a concise summary of a ship's behaviour in a specific rescue sequence. At UN Global Pulse, this approach has been used to unify narrative threads from a variety of sources, tying the observable physical traces of a rescue operation to qualitative sources of information on what happened and how events unfolded. This is illustrated in Figure 7; the map shows the AIS position readings of the Migrant Offshore Aid Station (MOAS) Phoenix, an NGO-operated rescue ship, from 10–15 October

2016. For context, the figure also shows the traces of an additional ship – Jugend Rettet’s Iuventa – as lines in the background. A MOAS press release from 13 October details how both NGOs were engaged in a rescue operation on the previous day, in which 113 individuals were saved and 17 were lost at sea, despite a search for survivors (MOAS, 2016).

Figure 7. An example of a “quantified rescue” with multiple rescue boats

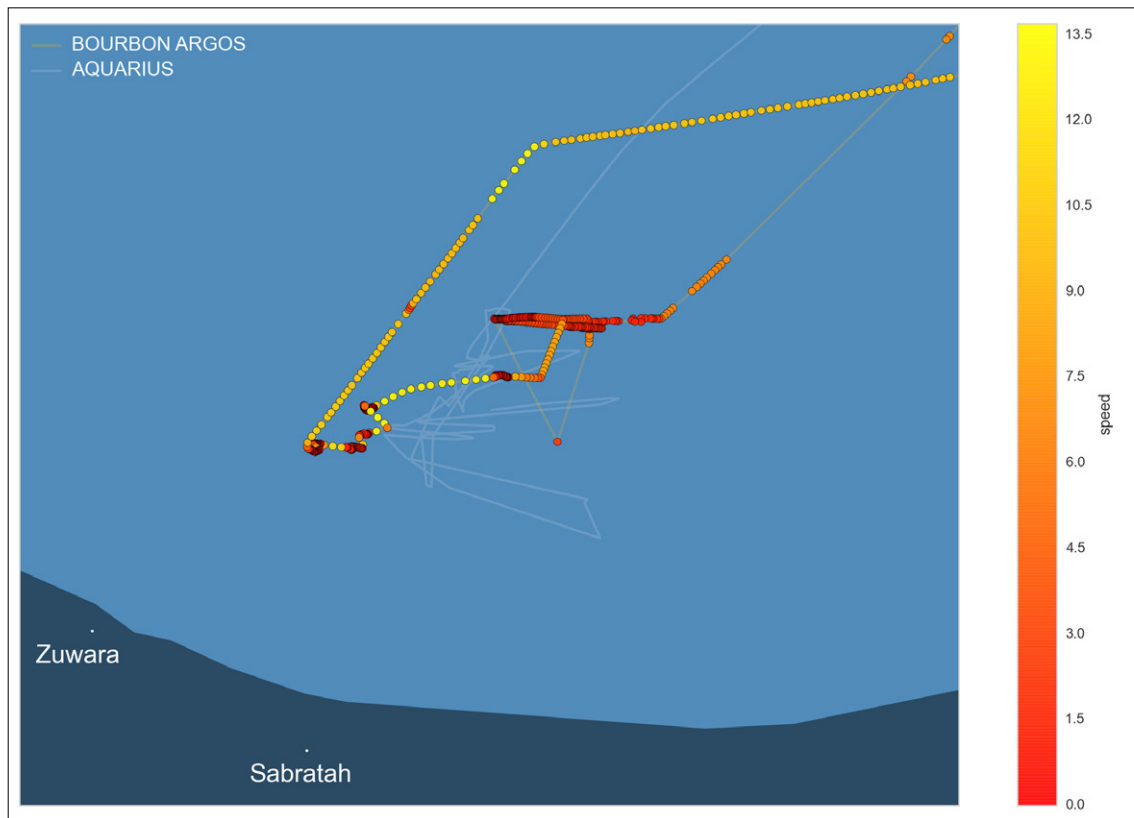


Source: UN Global Pulse, 2017.

Note: Each point represents an AIS position reading, with point colour illustrating speed in nautical miles per hour. The top (coloured) track shows the MOAS Phoenix, while the underlying (light blue) track shows Jugend Rettet’s Iuventa. According to MOAS (2016):

At least 17 people are considered to be dead/missing according to the 113 survivors rescued from a single rubber boat. ... The Phoenix crew was alerted of the vessel in distress following a call received at 19:00 from the Maritime Rescue Coordination Centre (MRCC) in Rome last night. Still, it was only at 21:20 that the rubber boat was sighted ... Thanks to the great effort from the crews of Proactiva Open Arms, Jugend Rettet, the Boat Refugee Foundation and the joint MOAS-CRI mission, the rescue operation was swiftly carried out and all the survivors quickly transferred on board the Phoenix. Following the rescue operation, a search to recover bodies was launched, however this had to be interrupted due to persistent rough weather at sea. ... According to survivors, they departed from Sabrata[h] in Libya at around 14:00 yesterday afternoon. At the time of rescue, many people had already been in the water for several hours.

A systematic analysis of such quantified rescues can yield insights into exactly how many rescue ships are conducting, where and how they happen, and how long they take. In addition to revealing how multiple vessels may coordinate to conduct a single rescue, quantified rescues can demonstrate how multiple migrant boats may be discovered in sequence by a single rescue vessel, forcing it to work continuously to bring people on board until it reaches full capacity. For example, Figure 8 shows rescue tracks from two Médecins Sans Frontières (MSF) vessels, the Bourbon Argos and the Aquarius, from 1 to 6 October 2016. According to MSF, on 3 October, the Argos conducted eight separate rescues, and accepted over 1,000 people on board, while the Aquarius was engaged in a large rescue of a single boat carrying over 700 people (MSF International, 2016).

Figure 8. An example of a “quantified rescue” with multiple sequential rescues

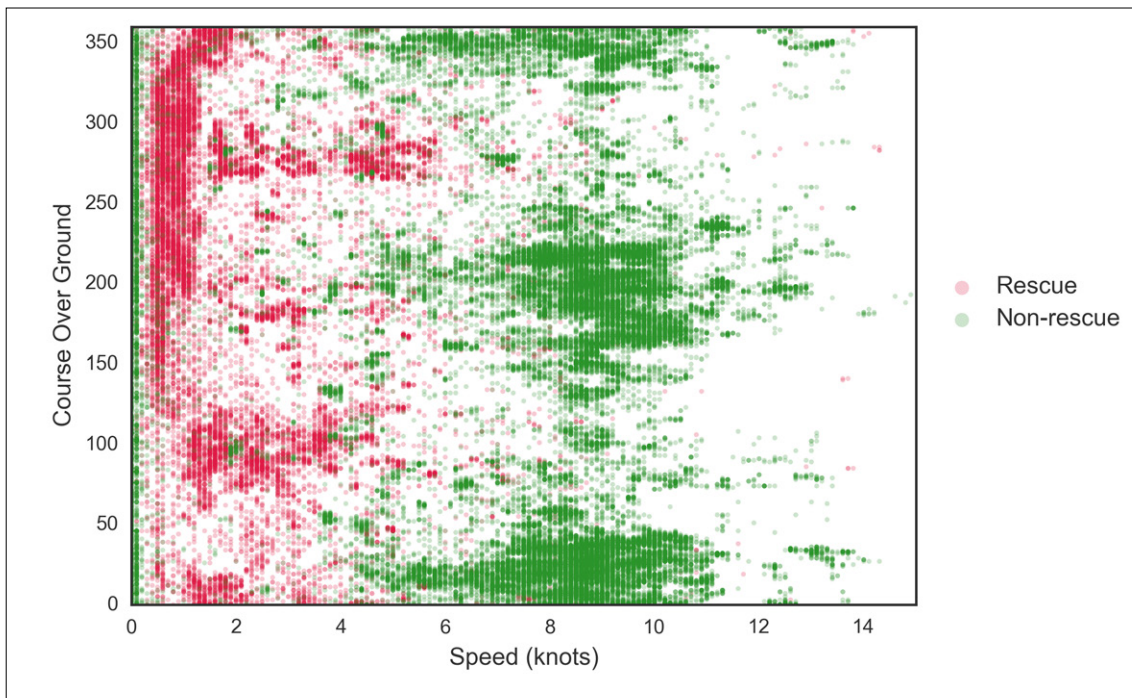
Source: UN Global Pulse, 2017.

Note: Each point represents an AIS position reading, with point colour illustrating speed in nautical miles per hour. The top (coloured) track shows the Bourbon Argos, while the underlying (light blue) track shows the Aquarius. According to MSF International (2016):

Today's intense rescues come just after the Bourbon Argos' return to operations. ... The 60 metre vessel was ... engaged in eight separate rescues, taking on board a total of 1,019 people. At the same time the Aquarius was involved in the painstaking rescue of a staggering 720 people from one very overcrowded wooden boat.

Quantified rescues can also help to systematically profile rescue activity patterns, and create data models of rescue operations. For example, speed and course over ground appear to be relatively good predictors of whether a vessel is conducting a rescue operation or not (see Figure 9), with most rescues associated with speeds of less than two nautical miles per hour. Such information could be used to measure the conditions under which rescues are most effective; to predict which rescues are likely to be associated with fatalities; or to produce input for operational predictive modelling. However, truly leveraging the potential of quantified rescues at scale will require new methodologies. Manually characterizing the behaviour of four rescue ships in the Central Mediterranean over a 100-day period required labelling over 77,000 points; and in a mere two-week sample of AIS data in the region, there are traces from almost 10,000 unique ships.

Figure 9. Rescue and non-rescue data points by speed and course over ground



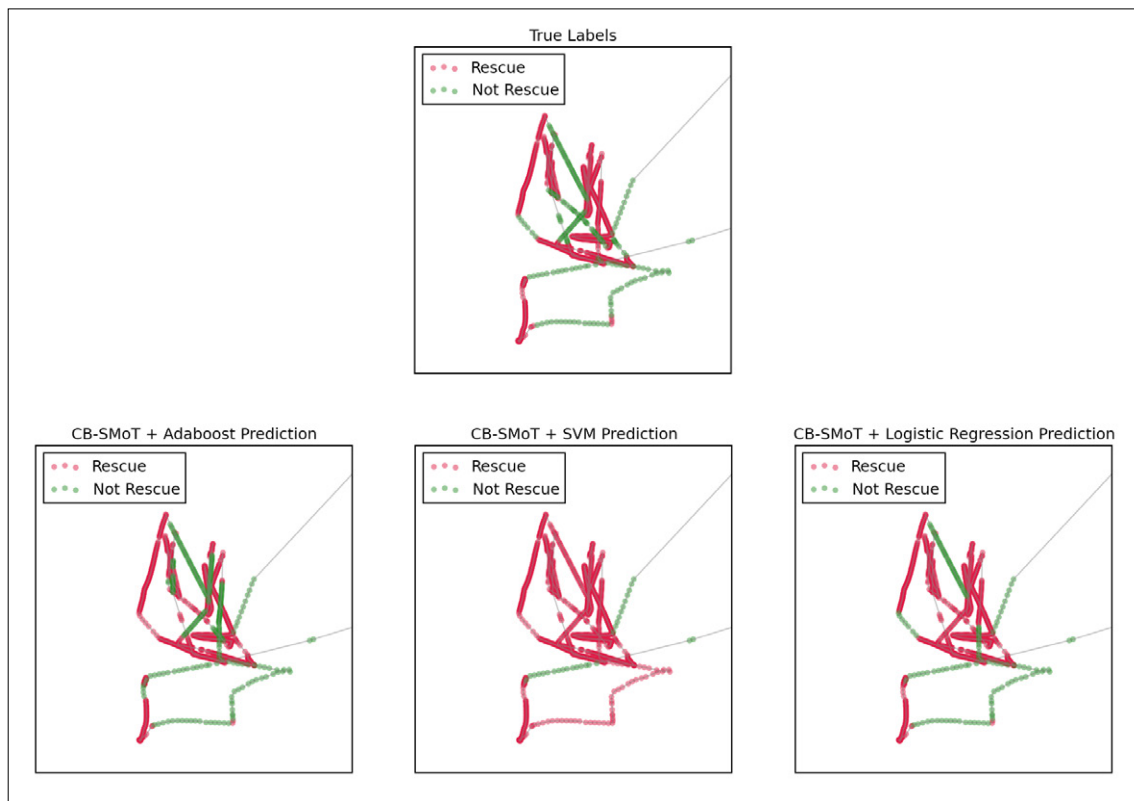
Source: UN Global Pulse, 2017.

Note: Points were manually labeled as “rescue” or “non-rescue” through visual inspection of the AIS data.

2.3.2. Automating the characterization of rescue activities using artificial intelligence

Artificial intelligence (AI) offers one approach to making the analysis of AIS data more tractable. Specifically, the automated detection of rescues can be framed as a classification problem, in which AIS data points are characterized according to particular features. Much as an analyst might look for rescue traces by scrutinizing vessel behaviour within a certain geographic area, artificial intelligence will search for predictors of rescue activity. As described above, speed and course over ground might already have some power to separate rescue from non-rescue operations.

Figure 10 illustrates the potential of AI in this context. The images show how a clustering algorithm can be used to group similar points in a ship’s trajectory, and how different machine learning algorithms can be applied to automatically classify these groups as rescues and non-rescues. Comparing the predicted rescue points in the bottom cells to the expert-labelled rescue points in the top cell demonstrates how these early approaches are promising for automatically separating rescues from non-rescues.

Figure 10. Classification of a sample trajectory

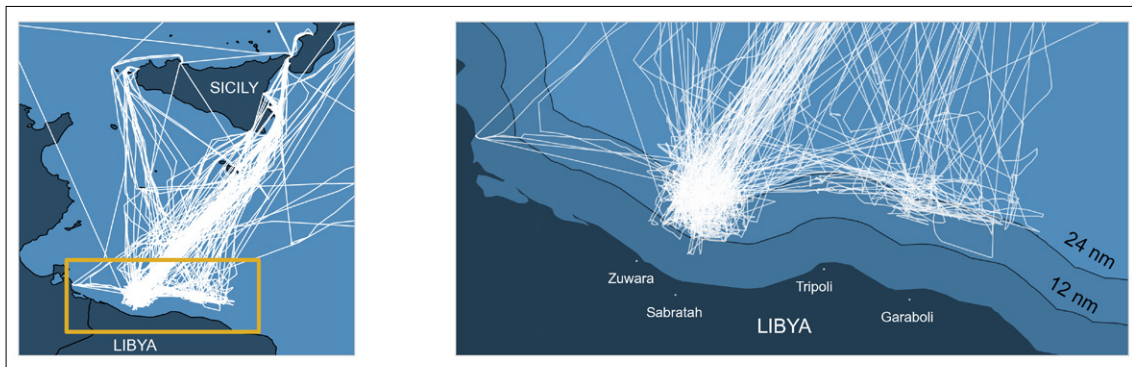
Source: UN Global Pulse, 2017.

Note: The top cell describes a “ground truth” trajectory from a single ship, where rescue and non-rescue data points have been manually tagged through a visual inspection of ship location, speed and behaviour. A clustering algorithm, CB-SMoT, was used to automatically group similar points within the trajectory based on how far apart they were in distance and time (Palma et al., 2008). Three standard classification methods (AdaBoost, support vector machines and logistic regression) were then applied to these clusters; the results are shown in the second row of the figure.

AI can also be used in combination with human expertise to better direct analysts’ attention. For example, presenting automatically detected patterns can facilitate the identification of interesting or unusual behaviours that merit further inspection, a method that has been applied to the detection of anomalous activities in port regions (Rhodes et al., 2005). With the right approach, algorithms can be modified to over- or under-identify rescue behaviour, selecting many candidates for possible rescue activity, or focusing attention on only the largest rescue efforts.

Once the model performs well in separating rescue from non-rescue points, AI can then be used to pre-process data, with predicted rescues acting as a building block to make larger-scale abstract inferences about the situation at sea. A particularly interesting application would be to use these algorithms to identify when commercial vessels are conducting (or avoiding) rescues; these tracks are difficult to tag by hand, since there may be many boats in a given region, and there is little data on when and where they support the rescue effort.

Figure 11. An overview of selected rescue vessel traces from Summer to Fall 2016

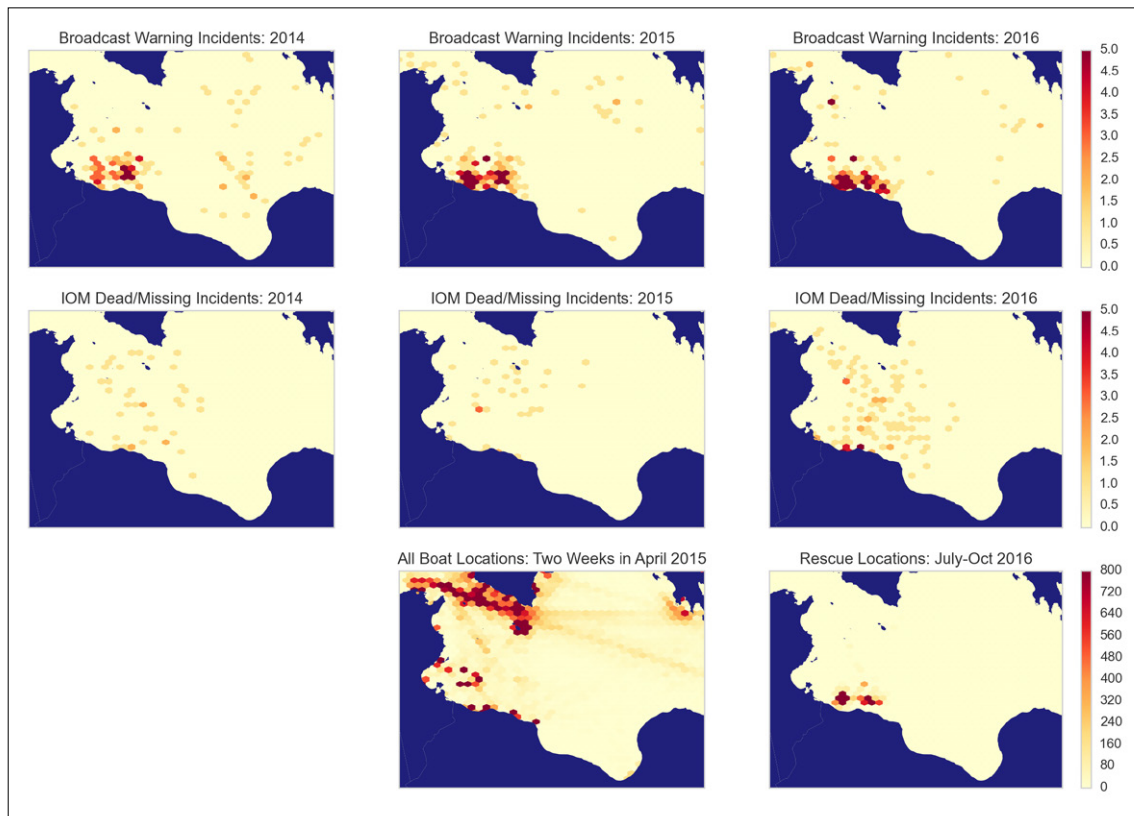


Source: UN Global Pulse, 2017.

2.3.3. Broader rescue trends

The broader patterns of quantified rescues across space and time can reveal additional important insights. For example, Figure 11 shows that NGO-led operations are generally tightly concentrated off the coast of Libya, and the known departure towns of Zuwara and Sabratah. While some rescue ships have been attacked (rhetorically and literally) for venturing too close to Libyan shores, it appears that they generally do try to adhere to the 12- and 24-nm boundaries demarcating Libyan territorial waters, and the adjacent contiguous zone (Campbell, 2017; Kingsley and Stephen, 2016; *Reuters*, 2016).

These aggregate patterns can also contribute to an understanding of why people still go dead and missing at sea. For example, Figure 12 shows that from 2014 through 2016, IOM reports of dead and missing people were recorded over a larger area than broadcast warnings. They also appear to cover a broader area than NGO-led rescues observed from July to October 2016, though this may be due to imprecise reporting of the location of deaths. Reports also identify incidents to the east of Libya and off the Egyptian coast (not shown), a region in which migrant or refugee vessels periodically go missing, but where rescue capacity seems far more limited. Although there appear to be fewer migrant and refugee departures in that area, the distance between these departure points and rescue boats' typical positions makes it unlikely that an emergency rescue could be conducted in a timely fashion.

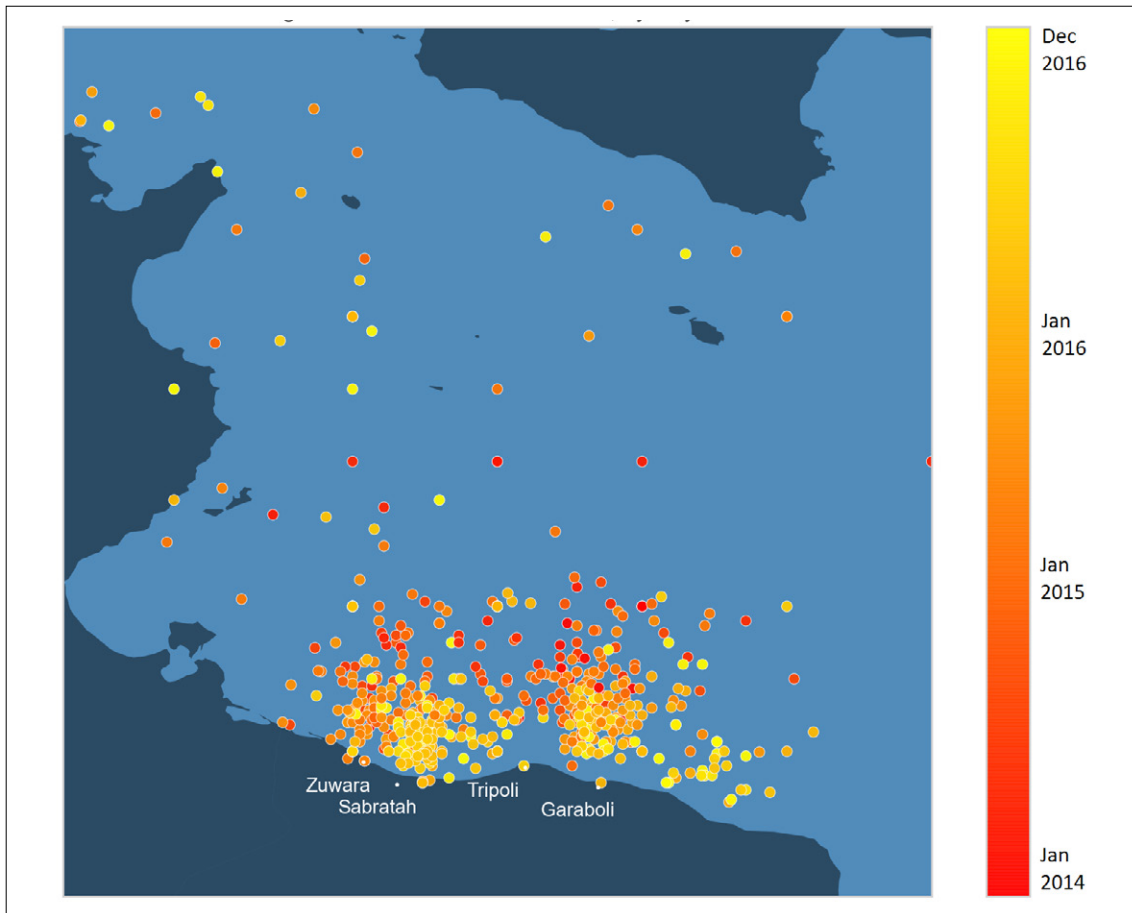
Figure 12. Density of broadcast warnings, dead and missing, and vessel traffic

Source: UN Global Pulse, 2017.

An additional advantage of this quantitative approach is that it is relatively easy to access historical data, which facilitates the analysis of aggregate trends, not only in space, but also over time. For example, the broadcast warnings in Figure 13 show how distress calls in the Central Mediterranean are progressively moving closer to shore. This seems consistent with claims that rescues have become part of an smuggling strategy – by which migrants and refugees are never intended to reach Italy or Malta on their own – although it could also be a reflection of the extent to which European Union-led Operation Sophia’s efforts to destroy smuggling vessels are driving migrants and refugees to travel in less seaworthy crafts.²⁸

²⁸ For further discussion, see Heller and Pezzani (2017).

Figure 13. Broadcast warnings, 2014–2016

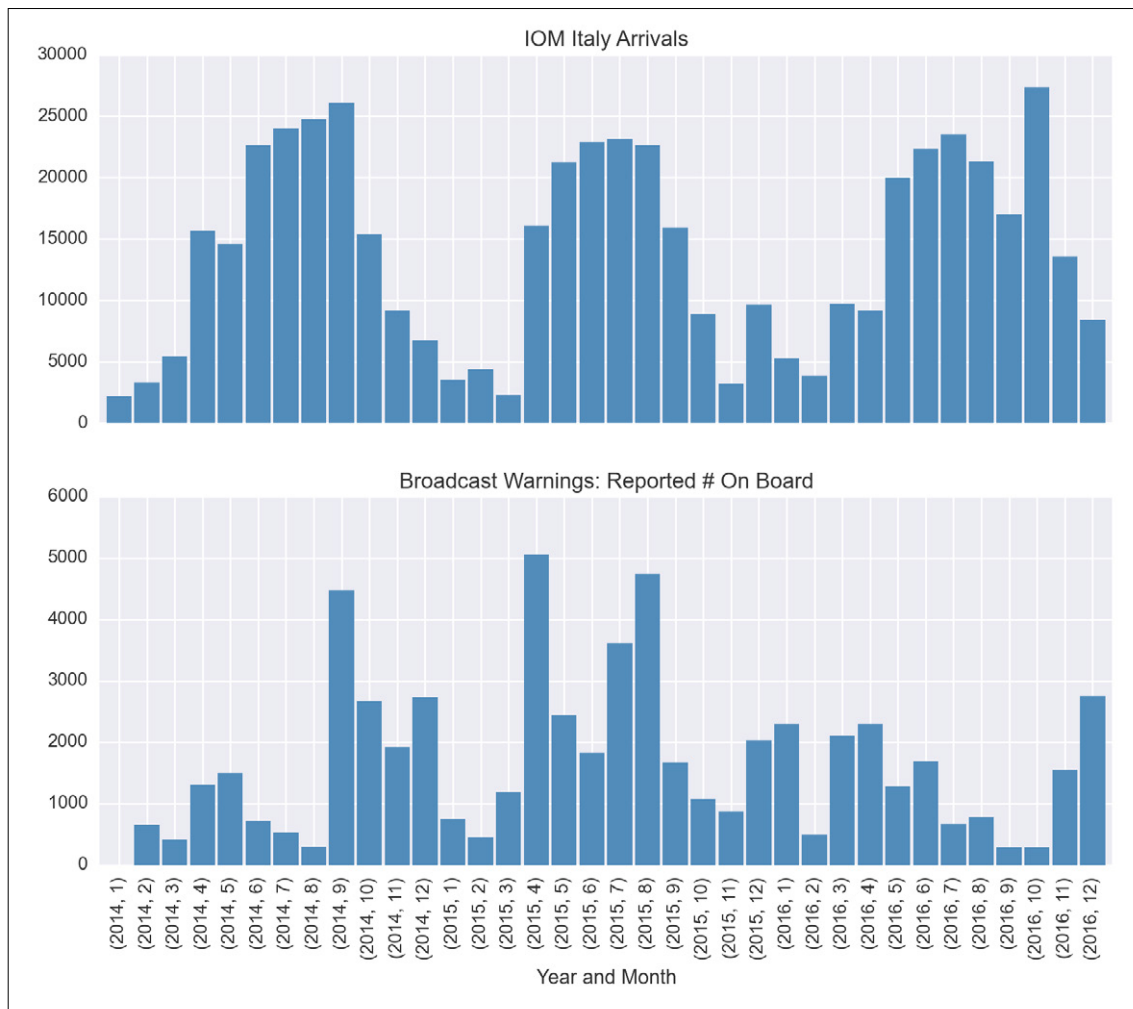


Source: UN Global Pulse, 2017.

Note: Each data point represents a single broadcast warning, with the colour representing time passed since January 2014. Yellow points indicate more recent warnings, while red points indicate older warnings.

Furthermore, comparing broadcast warnings with arrivals data in Figure 14 reveals a large disparity between the number of migrants and refugees mentioned in distress calls, and those reported to have successfully crossed the Mediterranean. During peak periods, the Italian authorities report arrivals of over 20,000 migrants and refugees per month, while explicit references to the number of passengers on board vessels that appear in the regional distress call data set only add up to a maximum of roughly 5,000. This discrepancy suggests that many migrant vessels are being found through other means. However, the fact that these data sets also show different trends makes it plausible that broadcast warnings may be reflecting a different subset of migrant ships.

Figure 14. Arrivals and broadcast warnings, 2014–2016



Source: UN Global Pulse, 2017.

Note: IOM arrivals data is derived from reports by the Italian authorities. Broadcast warnings data were calculated by parsing the text of the broadcast warning and extracting the reported number of people on board; note that not all broadcast warnings contain details on how many passengers are on board.

Ultimately, it can be helpful to think of the numbers observed as a simple equation, where:

$$\begin{aligned}
 \# \text{ departures} &= \# \text{ arrivals} + \# \text{ dead and missing at sea} \\
 &= \# \text{ boats requesting help} + \# \text{ boats discovered without requesting help} + \# \text{ boats lost without requesting help or being discovered}
 \end{aligned}$$

and each data source reflects a portion of the total. Figure 12, which displays: (a) broadcast warning calls; (b) reports of dead and missing migrants and refugees; and (c) search and rescue activity density, highlights the extent to which a single data set may fail to capture the whole equation, and stresses the value of recombining these data sources.

2.4. Methodological challenges

2.4.1. Biases and data quality

Despite the promise of these new data sets, their biases pose an important challenge for analysis. While this research has shown that AIS data can be used to understand rescue operations, they are generally less useful for identifying the movements of migrant vessels; Langford, Cheng and Vespe (2016) have attempted this on a small scale. Collecting AIS data requires that ships be equipped with a transmitter that is actively broadcasting information; in many cases, the vessels carrying migrants and refugees seem to have their transmitters off, or they are simply too precarious to be equipped with a transmitter in the first place, as is the case for rubber life rafts and dinghies.

AIS data also omit some vessel types altogether, including many small boats, some navy craft and any ships that intentionally turn off their receivers. For example, a recent study found 2,850 cases in which ships suppressed their AIS signals prior to entering European waters in January–February 2017 alone (Robinson, 2017). Data quality issues are also evident, with some ships providing fake IMO identifying numbers or intentionally reporting the wrong GPS coordinates (Windward, 2014). Even cooperative users may accidentally introduce errors in manual-entry fields, like the ship's length, or vessel's type. Ultimately, Robards et al. describe studies that had to drop 28 to 74 per cent of records, due to data quality problems (2016).

Similarly, there are limitations to using broadcast warning data. Producing a broadcast warning requires the vessel in distress to have a satellite phone on board that is able to call in to a local Maritime Rescue Coordination Centre (MRCC) to report an incident,²⁹ or at least for it to be in contact with someone who can.³⁰ Anecdotally, even if the MRCC is successfully reached, it may not issue a broadcast warning if it is already communicating with a nearby rescue ship that can assist. Together, these factors restrict the sample of incidents observed. Finally, use of these data relies on the ability to distinguish relevant from irrelevant warnings, and to pre-process the data accordingly; for example, multiple boats might be described in a single warning, even as the same boat may appear in multiple records.

More generally, using rescues as a proxy for understanding migration introduces a default selection bias, as focusing on rescues obviously leaves out migrants and refugees who go unrescued. That is, in studying an invisible phenomenon – migrants and refugees departing from shore in untracked boats – it is only possible to observe a manifestation of this phenomenon (a distress call) or a reaction to this phenomenon (a rescue). There is no rescue of boats that are never seen, or which never place a successful call; in this sense, observed rescue behaviour may be a function of where ships are already patrolling. Figure 12 indicates that this may be a narrow area relative to the full region in which individuals may have been lost at sea.

As a result of these limitations, analysis of these new sources should continually seek to remember the ways in which they may be skewed or misrepresentative – especially over time. For example, an observed rise in rescue activity can be the result of either an increase in migration, or in the NGOs' response. Similarly, a decline in the number of distress calls can reflect the fact that: (a) more boats are being rescued before they are in an emergency situation; or (b) fewer migrant boats are being equipped with satellite phones.³¹

²⁹ In fact, the Italian authorities have reported that the proportion of boats equipped with a satellite phone has fallen, resulting in a larger share of rescues occurring through visual sightings of migrant vessels (MRCC, 2016:12).

³⁰ Watch the Med's Alarm Phone was formed expressly for the purpose of communicating with ships in distress and ensuring appropriate follow-up; it pressures local MRCCs to respond and confirms the successful rescue of the migrants and refugees on board in a series of incident reports (Watch the Med, n.d.; Schwartz, 2014).

³¹ Anecdotal reports have also described the opposite scenario: smugglers are actually calling in to report migrants and refugees they have deposited at sea. For more analysis of MRCC calls and NGO rescue trends, see Frontex (2017).

2.4.2. Learning from the data

A second challenge posed by AIS data is that they are unlabelled; specifically, it is easy to see patterns in ship trajectories, but hard to identify the precise nature of an incident that occurred. The “ground truth” must be inferred through visual inspection and expert labelling of the data, supplementing these interpretations with the broadcast warnings data and reports from the news media, NGO Twitter accounts, Watch the Med and others. Consequently, labelling requires a very systematic and time-consuming manual investigation, and it is ultimately hard to provide any confidence interval on the reliability of the coded data. The recommendation section of this chapter offers suggestions for an enhanced data collection strategy that may facilitate this labelling process.

An additional challenge related to the automated detection of rescues is that features which may have been key predictors of rescue activity in previous years – like a specific latitude and longitude – might no longer be relevant today. For example, because the main port from which refugee and migrant vessels depart may change. Similarly, while the identification of rescues can be framed as an anomaly detection problem, rescue activities in the Central Mediterranean have become so concentrated, and so frequent, that they might now characterize normal behaviour for the area.³² Further research is needed to develop a suitable classification approach.

2.4.3. Privacy

A final concern with many big data projects is individual privacy. Although the data used in this chapter are publicly available, they can be recombined in ways that allow the intimate study of the behaviour of individual ships. Public access to AIS data itself is not without controversy, with IMO’s Maritime Safety Committee raising concerns about port security (IMO, n.d.). Furthermore, rescue organizations may not want the full details of their operations to be publicly known.³³ The sensitive political situations from which many migrants and refugees are fleeing doubly compounds the risk, given that vessel GPS tracks can be successfully matched to actual photos and statements from the migrants and refugees on board. Adversarial users could take advantage of the data to track the location of individual refugees, attack rescue boats or guide piracy operations. With this in mind, privacy-sensitive analysis of these data requires careful attention to the anonymization and aggregation of observations, including the reduction of potentially risky identifying details.

2.5. Conclusion and recommendations

This chapter presents insights, challenges and lessons learned from the use of two novel data sources – AIS data and broadcast warnings – for the study of migration in the Central Mediterranean. An analysis of these sources shows how big data can complement broader data collection efforts on missing migrants and refugees. In particular, new data sources can supplement and not substitute the traditional methods for measuring dead and missing people by capturing the related phenomenon of avoided deaths. As part of a broader set of tools for the study of missing migrants and refugees, these data sources draw attention to situations in which the humanitarian community has successfully recovered people at sea.

³² As previously described, there are some reports that commercial maritime activity has actually shifted away from the rescue region, so as to avoid the delays incurred when migrants and refugees are sighted and assisting them is legally required. If ships are not near migrants and refugees in distress, they cannot be held responsible for rescuing them.

³³ For example, one European far-right group expects to deploy a boat of its own with the goal of hindering NGO rescue activity (Townsend, 2017).



Search and rescue operation in the Central Mediterranean. © MOAS.eu 2016 (Photo: Christian Werner)

By combining data from very different sources, new and meaningful inferences can be drawn. For example, the high concentration of rescue activity relative to the reported locations of deaths and disappearances at sea suggests that there may be a need for increased geographic coverage, and coordination by search and rescue ships in the region. More generally, this research highlights the need for improved monitoring of migrants and refugees from the moment they depart from North African shores, which would make it possible to directly compare boats that are rescued with those that go missing at sea.^{34, 35}

Three main action points may be helpful for moving forward. First, the creation of a real-time common database for keeping track of the date, time, vessel, location and number of passengers for all rescues in the region could assist coordination and analysis of the situation. The Maritime Rescue and Coordination Centre in Rome would be an ideal curator for this data set, since it already plays a central role in allocating rescue resources. For research purposes, such data could be aggregated and shared using a standardized intermediary platform like the Humanitarian Data Exchange (Humanitarian Data Exchange, n.d). These data could even be combined with additional big data sources. For example, there have been some attempts to use satellite imagery to pinpoint boats that do not generate AIS signals, although the usefulness of these data is limited by the resolution of the images and the frequency with which they are updated (Heller and Jones, 2014).

Second, the analysis here represents just a small fraction of the insights that can be found in these data; there is a need for sustained, in-depth research to address ongoing open questions. For example, future topics of interest might include: (a) whether gaps in NGO-led rescue operations lead to ships sinking undetected; (b) whether rescue vessels are successfully coordinating their presence in the region; (c) how much impromptu rescues are costing the commercial shipping industry; (d) how shipping routes have changed in response to the evolving situation; and (e) how migration activity changes with trends in weather and sea currents.

³⁴ Watch the Med's work is particularly useful in this context, as it records calls from ships that have not received assistance, and may not yet have contacted the MRCC. On occasion, they even receive calls from relatives on shore who are hoping to track a specific migrant or refugee boat. However, their Alarm Phone hotline unfortunately captures only a fraction of incidents.

³⁵ One organization appears to have actually equipped a migrant boat with a GPS tracking device to follow its progress from Libya; however, this type of data is not currently available at scale (Jones, n.d.).

Third, there is an opportunity for productive collaboration between AIS data providers, the scientific community and humanitarian actors. A rich body of research has developed methods for applying these data in a variety of domains. For example, a review by Robards et al. highlights how AIS data has been adopted within the environmental conservation community, drawing attention to 25 different studies that used AIS data for the following: (a) track compliance with environmental regulation; (b) assess environmental risks posed by shipping activity; and (c) describe underlying patterns of maritime traffic (2016). Similarly, the AIS data provider MarineTraffic identifies over 150 academic publications that have used its data to study topics ranging from ship collisions to import/export behaviour (MarineTraffic, n.d.(a)). As both the volume of AIS data and the capacity to process them grow, new opportunities will arise for applying these data to the study of migration in the Mediterranean, and elsewhere at sea.

Ultimately, the inferences that can be drawn from data are only as valuable as the actions they induce. There is a need for political momentum to address the situation in the Mediterranean, and this problem will not be solved with data alone. Nevertheless, data can help citizens demand accountability; they can assist organizations in advocating and coordinating on behalf of migrants and refugees; and they can help produce recommendations for the optimization and performance improvement of rescue activities.

References

All About AIS

n.d. FAQs section. Available from www.allaboutais.com/index.php/en/faqs (accessed April 2017).

Campbell, Z.

2017 Abandoned at sea: Europe keeps its rescue ships far from the coast of Libya – Where thousands of refugees have drowned. *The Intercept*, 1 April. Available from <https://theintercept.com/2017/04/01/europe-keeps-its-rescue-ships-far-from-the-coast-of-libya-where-thousands-of-refugees-have-drowned/>

de Backer, O.

2014 Big data and international migration. *Pulse Lab Diaries*. 16 June. Available from www.unglobalpulse.org/big-data-migration

Dudas, G., et al.

2017 Virus genomes reveal factors that spread and sustained the Ebola epidemic. *Nature*, 544 (7650):309–15.

exactEarth

n.d. exactEarth homepage: AIS vessel tracking – Maritime ship monitoring. Available from www.exactearth.com/ (accessed April 2017).

FleetMon

n.d. FleetMon homepage: Live AIS vessel tracker with ship and port database. Available from www.fleetmon.com/ (accessed April 2017).

Frontex

2017 *Risk Analysis for 2017*. Frontex, Warsaw. Available from http://frontex.europa.eu/assets/Publications/Risk_Analysis/Annual_Risk_Analysis_2017.pdf

Heller, C. and C. Jones

- 2014 Eurosur: Saving lives or reinforcing deadly borders? *Statewatch*, 23 (3/4). Available from <http://database.statewatch.org/article.asp?aid=33156>

Heller, C. and L. Pezzani

- 2016 *Death by Rescue: The Lethal Effects of the EU's Policies of Non-Assistance*. Forensic Oceanography. Available from <https://deathbyrescue.org>
- 2017 *Blaming the Rescuers: Criminalising Solidarity, Re-enforcing Deterrence*. Forensic Oceanography. Available from <https://blamingtherescuers.org>

Hofleitner, A.

- 2013 Coordinated migration. Facebook (note), 17 December. Available from www.facebook.com/notes/facebook-data-science/coordinated-migration/10151930946453859

Hristova, D., et al.

- 2016 The international postal network and other global flows as proxies for national wellbeing. *PLoS ONE*, 11 (6).

Humanitarian Data Exchange

- n.d. Humanitarian Data Exchange homepage. Available from <https://data.humdata.org/> (accessed 31 July 2017).

International Maritime Organization (IMO)

- n.d. AIS transponders. Available from www.imo.org/en/OurWork/Safety/Navigation/Pages/AIS.aspx (accessed 31 July 2017).

IMO, UNHCR and International Chamber of Shipping

- 2015 *Rescue at Sea: A Guide to Principles and Practice as Applied to Refugees and Migrants*. Available from www.ics-shipping.org/docs/default-source/resources/safety-security-and-operations/imo-unhcr-ics-rescue-at-sea-guide-to-principles-and-practice-as-applied-to-refugees-and-migrants.pdf?sfvrsn=25

International Organization for Migration (IOM)

- 2017 Mediterranean migrant arrivals top 363,348 in 2016; deaths at sea: 5,079. IOM press release, 6 January. Available from www.iom.int/news/mediterranean-migrant-arrivals-top-363348-2016-deaths-sea-5079
- n.d. Missing Migrants Project homepage. Available from <https://missingmigrants.iom.int/> (accessed April 2017).

Jones, M.

- n.d. Migration geo-portal - Italy. *Xchange*. Available from <http://xchange.org/map/GeoPortal.html> (accessed 31 July 2017).

Kingsley, P. and C. Stephen

- 2016 Libyan navy admits confrontation with charity's rescue boat. *The Guardian*, 28 August. Available from www.theguardian.com/world/2016/aug/28/libyan-navy-admits-confrontation-charity-rescue-boat-msf

Langford, C., T. Cheng and M. Vespe

- 2016 Data driven identification of migrant vessels at sea. In: *Maritime Knowledge Discovery and Anomaly Detection Workshop Proceedings* (M. Vespe and F. Mazzarella, eds.). Publications Office of the European Union, Luxembourg, pp. 69–73. Available from <https://ec.europa.eu/jrc/en/publication/data-driven-identification-migrant-vessels-sea>

Lu, X., L. Bengtsson and P. Holme

- 2012 Predictability of population displacement after the 2010 Haiti earthquake. *Proceedings of the National Academy of Sciences*, 109 (29):11576–81.

MarineTraffic

- n.d.(a) MarineTraffic research publications database. Available from www.marinetraffic.com/en/ais-research-publications/ (accessed 31 July 2017).
- n.d.(b) Global ship tracking intelligence – AIS marine traffic. Available from www.marinetraffic.com/en/ais/home/centerx:-12/centery:25/zoom:4 (accessed 31 July 2017).

Maritime Rescue Coordination Centre Rome

- 2016 *Attività SAR nel Mediterraneo Centrale connesse al fenomeno migratorio* (in Italian). Comando Generale del Corpo delle Capitanerie di Porto Guardia Costiera. Available from www.guardiacostiera.gov.it/attivita/Documents/attivita-sar-immigrazione-2016/rapporto-sull-attivita-sar-nel-mediterraneo-centrale-anno-2016.pdf

Mazzarella, F. et al.

- 2014 Discovering vessel activities at sea using AIS data: Mapping of fishing footprints. Conference paper for the 17th International Conference on Information Fusion. Institute of Electrical and Electronics Engineers (IEEE), Salamanca.

Médecins Sans Frontières (MSF) International

- 2016 Mediterranean: MSF rescued nearly 2,000 people in less than seven hours. 3 October. Available from www.msf.org/en/article/mediterranean-msf-rescued-nearly-2000-people-less-seven-hours

Migrant Offshore Aid Station (MOAS)

- 2016 MOAS-Italian Red Cross late night rescue: 113 people rescued; at least 17 missing, among which a 3-year-old baby. MOAS press release, 13 October. Available from www.moas.eu/moas-italian-red-cross-late-night-rescue-113-people-rescued-least-17-missing-among-3-year-old-baby/

Natale, F. et al.

- 2015 Mapping fishing effort through AIS data. *PLOS ONE*, 10 (6).

National Geospatial-Intelligence Agency

- n.d. Broadcast warnings. Available from http://msi.nga.mil/NGAPortal/MSI.portal?_nfpb=true&_pageLabel=msi_portal_page_63 (accessed June 2017).

NetMob

- 2013 *Mobile Phone Data for Development: Analysis of mobile datasets for the development of Ivory Coast. Selected contributions to the D4D challenge sponsored by Orange*. Available from <http://perso.uclouvain.be/vincent.blondel/netmob/2013/D4D-book.pdf>
- 2015 *Data for Development Challenge Senegal. Book of Abstracts: Scientific Papers*. Available from www.netmob.org/www15/assets/img/NetMob%202015_D4D%20Challenge%20Senegal_Sessions_Scientific_Papers.pdf

OrbComm

- n.d. OrbComm homepage: IoT and M2M tracking, monitoring and control solutions – Satellite, cellular and dual-mode communications. Available from www.orbcomm.com/ (accessed April 2017).

Open Weather Map Automatic Identification System

n.d. Global image of vessel traffic with up-to-date details on shipping. Available from <http://ais.owm.io/> (accessed June 2017).

Palma, A.T. et al.

2008 A clustering-based approach for discovering interesting places in trajectories. In: *Proceedings of the 2008 ACM Symposium on Applied Computing* (ACM, New York), pp. 863–868.

Raymarine

2016 AIS – The ultimate guide to automatic identification systems. 13 September. Available from www.raymarine.com/view/blog/news/details/?ID=15032385552

Reuters

2016 ‘Libyan coastguard’ speedboat attacked migrant dinghy, says NGO. *The Guardian*, 21 October. Available from www.theguardian.com/world/2016/oct/21/men-on-libyan-coastguard-boat-reportedly-attack-dinghy-of-refugees-and-migrants

Rhodes, B.J. et al.

2005 Maritime situation monitoring and awareness using learning mechanisms. *IEEE Military Communications Conference*, 1:646–652.

Ristic, B. et al.

2008 Statistical analysis of motion patterns in AIS data: Anomaly detection and motion prediction. *11th International Conference on Information Fusion*, p. 1–7.

Robards, M.D. et al.

2016 Conservation science and policy applications of the marine vessel automatic identification system (AIS) – A review. *Bulletin of Marine Science*, 92 (1):75–103.

Robinson, M.

2017 Terror fears over hundreds of ‘ghost ships’ turning off their tracking devices while sailing close to hotspots including Syria and Libya before entering European Waters. *Daily Mail*, 10 March. Available from www.dailymail.co.uk/news/article-4300170/Terror-fears-hundreds-ghost-ships-turning-GPS.html

Schwartz, M.

2014 The anchor: The Africans who risk all to reach Europe look to an exiled priest as their savior. *The New Yorker*, 21 April. Available from www.newyorker.com/magazine/2014/04/21/the-anchor

State, B., I. Weber and E. Zagheni

2013 Studying inter-national mobility through IP geolocation. *Proceedings of the Sixth ACM International Conference on Web Search and Data Mining*. ACM, New York, pp. 265–274.

Townsend, M.

2017 Far right raises £50,000 to target boats on refugee rescue missions in Med. *The Guardian*, 3 June. Available from <https://amp.theguardian.com/world/2017/jun/03/far-right-raises-50000-target-refugee-rescue-boats-med>

Tu, E. et al.

2016 Exploiting AIS data for intelligent maritime navigation: A comprehensive survey. *arXiv*. Available from <http://arxiv.org/abs/1606.00981>

UN Global Pulse

- 2014a Estimating migration flows using online search data. Available from www.unglobalpulse.org/sites/default/files/UNGP_ProjectSeries_Search_Migration_2014_0.pdf
- 2014b Nowcasting food prices in Indonesia using social media signals. *Global Pulse Project Series*. Pulse Lab Jakarta, Indonesia. Available from www.unglobalpulse.org/projects/nowcasting-food-prices
- 2016a Measuring people's economic resilience to natural disasters. *BBVA Data & Analytics*. Available from www.bbvadata.com/odile/
- 2016b A guide to data innovation for development: From idea to proof-of-concept. Available from http://unglobalpulse.org/sites/default/files/UNGP_BigDataGuide2016_%20Web.pdf

UN Secretary-General

- 2014 *A World That Counts: Mobilising the Data Revolution for Sustainable Development*. Independent Expert Advisory Group on a Data Revolution for Sustainable Development. Available from www.undatarevolution.org/report/

UN Treaty Collection

- 1974 International Convention for the Safety of Life at Sea. Available from <https://treaties.un.org/doc/publication/unts/volume%201184/volume-1184-i-18961-english.pdf>

Vespe, M. et al.

- 2012 Unsupervised learning of maritime traffic patterns for anomaly detection. *9th IET Data Fusion Target Tracking Conference Algorithms Applications*, pp. 1–5.

VesselFinder

- n.d. VesselFinder homepage: Free AIS ship tracking of marine traffic. Available from www.vesselfinder.com (accessed April 2017).

VesselTracker

- n.d. VesselTracker homepage: Terrestrial & satellite AIS tracking service in realtime. Available from www.vesseltracker.com/app (accessed April 2017).

Watch the Med

- n.d. Watch the Med homepage. Available from <http://watchthemed.net/> (accessed June 2017).

Wilson, R. et al.

- 2016 Rapid and near real-time assessments of population displacement using mobile phone data following disasters: The 2015 Nepal earthquake. *PLOS Currents Disasters*.

Windward

- 2014 *AIS Data on the High Seas: An Analysis of the Magnitude and Implications of Growing Data Manipulation at Sea*. Available from www.windward.eu/wp-content/uploads/2015/02/AIS-Data-on-the-High-Seas-Executive-Summary-Windward-October-20-2014.pdf

Chapter 3

Mixed messages: Media coverage of migration and fatalities

Aidan White and Ann Singleton³⁶

3.1. Introduction

The Missing Migrants Project and other sources of information on the numbers of migrant deaths rely, to a large extent, on media reports (as well as on official sources of data). This presents methodological challenges for researchers, which are addressed in Text Box 1, and ethical challenges for researchers and journalists. This chapter discusses current media practices and challenges in reporting on missing and dead migrants.³⁷ It makes recommendations on how current practices can be improved.

Media coverage plays a major role in the framing of policy discourses, and its importance in shaping public opinion should not be underestimated (however cause and effect is attributed).³⁸ Equally, the ethical tests facing journalists have grown in an age when every natural disaster, migrant shipwreck, terror attack or act of war triggers a flood of horrifying and violent images that generate a multitude of dilemmas for media. In this context, reporting on the deaths of migrants presents the media with significant professional challenges.

Few subjects are more important to readers and viewers than how media cover death. It calls for care, sensitivity and, above all, respect for the families and those left to grieve the loss of loved ones. In the case of the deaths of migrants, the pain of loss is often made worse by uncertainty³⁹ caused because the bodies of many of those who die, whether at sea or on land remain unidentified.

Gone are the days when only press photographers captured grief and terror with their lenses, or when journalists were the privileged gatekeepers to information about humanitarian disaster or social upheaval. In the digital age, bystanders can also snap shots of severed limbs and burned corpses with their phones and cameras and upload them directly online. At the same time, everyone with access to a mobile telephone and the Internet can report on and tell the story of human suffering without the filter of media professionals.

In recent years, the reporting of migration disasters, mainly in the Mediterranean, as well as in the waters of the Asia-Pacific, have raised challenging questions for journalists. How best should the stories of migrant suffering be illustrated without resorting to sensationalism? What responsibilities do authorities, researchers and the media have to the victims and their families when dealing with missing and dead migrants? What are the ethical challenges of reporting

³⁶ Aidan White is a journalist, and founder and Director of the Ethical Journalism Network. He was General Secretary of the International Federation of Journalists for 24 years until 2011. Ann Singleton is Senior Research Fellow at the University of Bristol and Senior Advisor to IOM's Global Migration and Data Analysis Centre.

³⁷ The focus in this chapter is on news media, traditionally understood to be organizations involved in the gathering and distribution of news, commentary and information materials for public consumption on any platform of communications (text, audiovisual and digital).

³⁸ As the Migration Observatory has observed regarding the United Kingdom, there is "A tendency for journalists themselves to play the role of framing problems in the migration debate, rather than simply reporting on others' (such as politicians, 'think-tanks,' or academics') analysis. This highlights the key role played by journalists and media organisations in shaping the UK migration debate." (www.migrationobservatory.ox.ac.uk/resources/reports/decade-immigration-british-press/)

³⁹ The concept of "ambiguous loss" and findings from the Economic and Social Research Council-funded Mediterranean Missing Project, are discussed in chapter 4 by Simon Robins.

on the missing and injured migrants, on the dying and the dead and how can information be presented without dehumanizing the victims or breaching their rights to privacy? What are the specific responsibilities when reporting on children?

To answer these questions, this chapter examines, in particular, the role of mainstream media in coverage of missing migrants rather than having a focus on social media. The influence of social media in creating new and important lines of communications within migrant communities is undeniable, but the dominant information flows that shape public opinion emerge from traditional media narratives.

Although the influence of the press and printed form has diminished, broadcasting and online platforms delivering traditional journalistic material are the most used and trusted sources. Journalism, shaped as it is in a framework of values, provides a reliable resource and for that reason most of the data on missing migrants comes from mainstream media reports, rather than from social media.



African migrant interviewed at a march for refugees in Rome, Italy. © Shutterstock.com 2015 (Photo: Davide Bonaldo)

3.2. Ethics and reporting realities

The technologies for capturing and disseminating images and information may have advanced, but these questions are not new. Indeed, many of the 400 or so codes of ethics that govern the work of journalists worldwide make specific reference to the ethical duty of journalists to show respect in their coverage of suicide, accidental death and those who are victims of war, terrorism and humanitarian disaster.

A typical example is the National Press Photographers Association's Code of Ethics in the United States, which tells its members:

*Treat all subjects with respect and dignity. Give special consideration to vulnerable subjects and compassion to victims of crime or tragedy. Intrude on private moments of grief only when the public has an overriding and justifiable need to see.*⁴⁰

But addressing the humanitarian challenge of migrant deaths and putting this worthy sentiment into practice appears not to be a newsroom priority, even at a time when migration has jumped to the top of the news agenda.

Since the end of 2015, television screens and newspapers have been filled with stories about the tragedy of migration – Syrian child refugees drowned in the Mediterranean; Rohingya⁴¹ fleeing persecution in Myanmar who suffocate on boats in the Andaman Sea; children dying of thirst in the desert as they try to enter the United States to escape gang warfare in Central America.

These stories provide the sensational backdrop to a global drama that the media often reports superficially and, with some notable exceptions, without sufficient consideration or understanding of the statistical data, or of the complex backstory to migration – a multifaceted global phenomenon – but also and primarily a humanitarian challenge.

Very often the information media provide about migrant fatalities is flawed, inaccurate, incomplete or misinterpreted and exaggerated, even though the International Organization for Migration (IOM) has made great strides in recent years to improve the flow of statistical information about the loss of life. Other methodological improvements and data collection efforts include those of organizations described in Parts 1 and 2 (forthcoming) of *Fatal Journeys Volume 3*, including those of the contributors to this report, and the University of Amsterdam, International Commission on Missing Persons, International Committee of the Red Cross, UNICEF and Save the Children. But media rarely engage directly in helping to strengthen this process.

There is a paucity of information available on how media cover migration fatalities and missing persons and little research on how media cover migration issues as a whole, although two multicountry reports by the Ethical Journalism Network – *Moving Stories (2016)* and *How Media on Both Sides of the Mediterranean Report Migration* (May 2017, with International Center for Migration Policy Development and the European Union) do give some insights into the challenges media face.⁴²

These reports reveal how media in many different countries work under remarkably similar conditions: (a) journalism under pressure from a failing media economy; (b) undue political influence on the news agenda; and (c) a tendency towards hate speech, stereotyping and social exclusion of refugees and migrants.

These reports – covering Australia, Austria, Algeria, Bulgaria, Brazil, China, Egypt, Hungary, Israel, Jordan, Italy, France, Gambia, Germany, Greece, India, Lebanon, Malta, Mexico, Morocco, Nepal, Palestinian Territories, South Africa, Spain, Sweden, Tunisia, Turkey, United Kingdom and United States – reveal a range of factors that hinder media coverage of migration.

The most common issues reported to a greater or lesser extent in all countries include the following:

Censorship, particularly self-censorship: In many countries, even in settled democracies, reporters and editors who do not want to offend their media employer or the government will allow political bias to influence their coverage of migration and migrant communities.

⁴⁰ A full list of codes and standards for journalists is available from <http://accountablejournalism.org>

⁴¹ Note that the term *Rohingya* as used to describe the Muslim peoples of Rakhine State, Myanmar, is not accepted by the Government of the Union of Myanmar, which in June 2016 issued an order directing State-owned media to use the term “Muslim community in Rakhine State”.

⁴² The full reports are available from <http://ethicaljournalismnetwork.org>

Lack of resources: The economic weakness of traditional media leads to cuts in editorial work and less investment in training and the time needed to do good work through research and detailed investigation.

Lack of skills and knowledge: A widespread lack of expertise in reporting migration means that journalists lack confidence and will often adopt a “herd mentality” in their coverage, leading to casual stereotyping and uniform, superficial coverage of complex questions.

Inexact use of terminology: Journalists and media regular fail to distinguish between asylum seekers, refugees and migrants and often use loaded and unexplained language covering “smuggling”, “trafficking” and “illegal migrants”.

Undue political pressure: Media struggle to produce balanced coverage, particularly in countries where political leaders respond with a mixture of bigotry and panic, which has been a feature of coverage in the United States and some parts of Europe.

The rise of hate speech: Worsening public discourse and incitement in political speech is often echoed in media, with journalists describing migrants as a threat through coverage that often includes unsubstantiated links with crime and terrorism.

Limited range of sources. There is a lack of migrant voice and over-reliance on “official” information. This also reflects a lack of media participation in efforts to identify people killed in migrant disasters and to locate their families.

Lack of international focus: The national perspective at the heart of media coverage often means media fail to place the migration story in a global context. Local interests predominate at the expense of a wider understanding of migration and the reasons for it.

3.3. Missing links and media narratives

While the thousands of desperate refugees and migrants moving from the Middle East and from Africa to Europe or from Central America to the United States might command the headlines and news bulletins; for instance, migration within countries – from rural to urban areas – involves tens of millions of people in China, India and to a lesser extent Brazil, and dwarfs the international movement of people. There are few reports on the deaths of those involved in internal migration, which include the onward migration of international migrants following their arrival in the country of destination.

In addition, there is little focus on migration success stories, the importance of remittances, the positive aspects of labour migration and the cultural richness of diaspora communities and their contribution to human development.

Despite all of this, there are exceptions, inspiring examples of careful, sensitive and ethical journalism and concern inside journalism over the reporting of migration fatalities. There has been a proliferation of prizes and awards for journalism and migration that recognize an abundance of examples of how the story has been laced with humanity, empathy and a focus on the suffering of those involved (See Panel 3).

These reports suggest that even in the age of the Internet and with rapidly expanding access to online sources, trusted media play a vital role in bringing the world’s attention to these events.

These reflections are useful, but it is striking that there is so little information or available research looking at how media report on migration fatalities, with one remarkable exception, which is referred to later in this article. This lack of information, particularly on the crisis of missing persons, hinders efforts to develop more professional awareness within media and journalism.

In most countries, the migration story is told in two voices: (a) the numbers and statistics that focus on the hard realities of massive movements of population with the potential to disrupt the settled conditions of host communities; and (b) human interest coverage of migrant loss and plight of refugees in their flight from war-torn areas. Very often, the media coverage of the emotional drama of migrant suffering is short-term and limited to focus on specific incidents that register high loss of life. There is often a lack of follow-up and deeper reflection on the migrant experience.

At times the story has been politically led with media following an agenda dominated by loose language from politicians and talk of invasion and swarms. In-country media often frame the migration story in a negative context and fail to address the legitimate concerns of host communities about the consequences of migration. This failure to set out the potential benefits of immigration, for instance, has contributed to a widespread sense that migration is “a problem” rather than an opportunity.

The coverage of fatalities remains fixed in a media narrative of sensationalism and humanitarian disaster with too little focus on the lives of the victims and the context that drives them to seek escape from persecution, conflict or grinding poverty. Nor is there any media focus on missing migrants who have not died, those who might still be alive, or on the continuing ordeal of the families who live with uncertainty when they lose contact with relatives who make the perilous journey to seek work and a new life elsewhere.

Regrettably, the negative media narrative on migration is hardly new. It has been well-established for decades. Already at the turn of the millennium, Britain’s famously robust and unashamedly biased tabloid newspapers were in full cry in their campaign against immigrants. A 2003 survey on media reporting of migration, *What’s the Story*, by the anti-censorship group Article 19, for instance, revealed the following:

- There were 51 words of a disparaging nature regularly used by media to describe asylum seekers;
- The media quoted statistics were “frequently unsourced, exaggerated or inadequately explained”;
- Tabloid newspapers made no attempt to distinguish between economic migrants and asylum seekers; and
- The hostile coverage of media provoked a sense of shame and alienation among migrants.⁴³

The failures of the press have been highlighted in previous works. Journalist Caroline Moorehead, for instance, set out many of these in her book, *Human Cargo* (2005). Moorehead noted that despite industry efforts to tone down press coverage, “hostile and bigoted reporting continues” alongside casual disregard for simple, relevant and important facts that counter the negative framing of the asylum story.

The situation is often worse in countries from which large numbers of migrants are at present travelling from – Eritrea, Mali, Syrian Arab Republic and Afghanistan – because there is no functioning, independent media or media covering migration stories.

These are the communities who are most vulnerable to the scourge of people smuggling or the even more insidious business of people trafficking and whose lives are often most threatened on the migrant journey, but their stories are hardly reported at home.

⁴³ See www.article19.org/data/files/pdfs/publications/refugees-what-s-the-story-.pdf

This means that the fate of many of the victims of migrant disasters whose bodies are found after the deaths following shipwrecks in the Mediterranean and elsewhere remain unknown to their families. Establishing links between media reporting these deaths and media in the countries concerned might be one important way to begin sharing data and helping to bridge this information gap.

3.4. In the picture: Humanity or the people's right to know?

One migrant death that changed the direction of media coverage around the world occurred on 2 September 2015 when the body of a three-year-old boy who had drowned was found on a beach near Bodrun in Turkey after a boat carrying migrants capsized in a failed attempt to reach the Greek island of Kos.

The boy, from Kobane in northern Syrian Arab Republic, died along with his five-year-old brother and their mother. Their father survived; a further nine people did not. At that time, the boy was just another statistic, one of more than 2,600 migrants known to have died crossing the Mediterranean Sea to Europe in 2015, according to IOM.⁴⁴

But what followed was sensational and unprecedented: an international outpouring of sympathy and support for the ordeal faced by all refugees and migrants making perilous journeys to escape war and privation.

Throughout 2015, the steady rise in numbers of migrant deaths reported by media in most countries had appeared to have little effect on public opinion, but the slight, peaceful figure slumped face down in the waters off a Turkish beach changed the public mood. Within 12 hours, the image had been shared by hundreds of millions of people on social media. The next day, it was on front pages worldwide.

Its impact was extraordinary. The refugee crisis was suddenly given a tragic and human face. The image inspired a wave of solidarity and sympathy for migrants within the public at large. It led to a resurgent debate among politicians on how to confront the humanitarian challenge of migration.

But publication of this picture was not without controversy. Many readers questioned whether or not it was appropriate to publish images of such a young, dead victim and the potential impact on his family.

Interestingly, most people cared less about the photo being widely shared online; it was the publication in traditional media brands that raised questions and stirred emotions. Many people recognized the value of the image as a symbolic representation of migrant suffering, but were troubled by the identification of the boy and the intrusion into his family's grief.

"Everybody fights over iconic images," said Peter Bouckaert, Emergencies Director at Human Rights Watch and one of the first people to share the image on social media. "And in the end they perhaps lose their original meaning. It is the same with people running around with Che Guevara T-shirts as a symbol, rather than understanding who Che Guevara was."

Amol Rajan, at the time editor-at-large of London's *Independent* newspaper, wrote that the dilemmas involved had been thoroughly discussed in his editorial room. However, journalistic interests prevailed: "It was to shock the world into action, to improve refugee policy and to put pressure on a prime minister whose behaviour in this crisis has been embarrassing."

⁴⁴ See Missing Migrants Project 2015 data, available from <https://missingmigrants.iom.int/latest-global-figures>

But did this shock therapy work? Since the publication of that iconic image, many more children have died in the Mediterranean: 178 in 2016, and 48 in the first six months of 2017.

Shocking the audience and promoting discussion on matters of great public interest are legitimate tasks for public interest journalism, but there are limits, as Austrian journalists discovered in a ruling by their self-regulating press council Presserat, which deals with complaints from the public on press behaviour.

3.5. How victims figure in the minds of media

On 27 August 2015, five days before the death of the boy in Turkey, 71 people thought to be migrants were found dead in a lorry abandoned on an Austrian motorway. The incident was major news. But there was one problem: there were no images that told the story very well – only pictures of police officers.

In this case, “words had to do the talking”, as Fiona Shields, photo editor at the *Guardian*, put it. But journalists at *Die Neue Kronen Zeitung*, the largest Austrian newspaper, disagreed. They obtained, and published, an uncensored photo of the dead bodies. The Presserat condemned the newspaper and ruled that the use of the photo breached ethical codes. The newspaper, said the council, had failed to respect the human dignity of the deceased.

This incident highlights two important aspects of the way media treat the death of migrants. The first is the lack of self-awareness inside media on the different practices employed to report deaths and also how they might differ in the coverage of fatalities involving children, adults, older people, people of different social status, whether or not they are nationals of the reporting country or unknown migrants from other countries. At the heart of this issue is whether or not dead people have rights in the minds of reporters and editors. The issues are certainly covered in the plethora of guidelines, codes and standards that journalists are encouraged to follow, but there is not enough available research to indicate how effective these are in ensuring professionalism and consistency in the way journalists report migration deaths.

The second issue raised by the Austrian incident is the way proximity influences how media cover fatalities. When national media are covering the deaths of persons from and in far-off lands, they tend to be less concerned about issues of identity and privacy. Pictures of dead bodies are routinely used by some media when the victims are not likely to be known to their immediate audience. This often leads to contradictory behaviour.

In Norway, for instance, media were scrupulous in their coverage of the victims of a terrorist attack in July 2011, which claimed 77 lives, most of them young Norwegians. No pictures were published of any of the victims of the attack. And when another European publisher – the magazine *Paris Match* – published a long-lens photo of some of the bodies, it caused outrage and led to a temporary ban inside Norway. Yet the following year, the news editor of the country’s leading private broadcaster, TV 2, told editors at the Global Editors’ Network Summit in Paris that Norwegian media had no qualms about publishing pictures of dead bodies from war zones or humanitarian crises in distant lands.

The Austrian press council ruling suggests that even when the victims are likely to be unknown to the media audience, the media should respect the right of people alive or dead to be treated with dignity. This case also highlights how media must also ensure that distance between their reporting and the country of origin of dead or missing migrants is not allowed to weaken the journalist’s obligation to show humanity to all, even in cases where the identity of victims is unknown.

3.6. Developing good practices and monitoring media

In many countries, journalists' groups and media keen to strengthen media coverage on migration have been developing codes and standards on migration and related issues. One of the best examples is in Italy, a front-line State receiving thousands of desperate refugees, where media have developed a purpose-built charter against discrimination for journalists (See Panel 2).

This particular initiative has allowed media and journalists to play more of a direct role in improving the flow of information regarding refugees and has opened up a channel for media to create links with other non-governmental organizations (NGOs) working on migration and anti-racism issues.

Such links can be useful in helping to alleviate one important aspect of the migration tragedy that does not figure often in media coverage concerning the unknown fate of the victims of drowning in the Mediterranean.

According to IOM's Missing Migrants Project (<https://missingmigrants.iom.int/>), almost 15,000 people have drowned in the Mediterranean trying to reach Europe in just over three years (since 2014), and in most of these cases, the bodies remain unidentified and their families are left not knowing if missing relatives are dead or alive. When bodies are identified, it is usually by relatives coming to where bodies are kept before burial, but an information gap between the countries of origin and the incidents of shipwreck and the fact that many of the most vulnerable migrants when they are found do not have documents that clearly identify them poses an enormous challenge to efforts to trace their families and inform them of the loss (Mediterranean Missing Project: www.mediterraneanmissing.eu).

The IOM's Missing Migrants Project, which tracks deaths of migrants and those who have gone missing along migratory routes across the globe, aims to bridge this gap.

This research initiative began following shipwrecks off the island of Lampedusa in Italy in 2013, in which nearly 400 migrants died. Since then, the Missing Migrants Project has developed into an important hub of data and information, which is used widely by media, policymakers and researchers.

3.7. Conclusion and recommendations

Media narratives continue to shape public opinion on the issue of migration, but in all countries, journalism is a distorting lens as much as a magnifying glass. On the one hand, media expose inhumanity and corruption in the way that migrants are treated, and on the other, they often follow an agenda that inspires discrimination and hate that intensifies the suffering of the victims of migration.

What is unquestionable is that media tell very different stories. Many countries have been built on migration, but often media appear to lose sight of the migrants in their midst and give them no voice in their coverage.

This absence of voice is also felt in countries where the status of migrants is changing. Some North African countries, for instance, places formerly regarded as stopping-off points by sub-Saharan migrants on their way to European destinations, are now becoming host countries, but often media, as noted in a 2017 study, are reluctant to embrace this new reality.⁴⁵

The limited knowledge and technical understanding of migration that prevails among many media professionals, as well as the lack of migration information and data available to inform the work of even well-intentioned journalists often results in reporting that reduces migration to its extremes.

This suggests that there is still much work to be done to explain the nuances of the migration story to journalists and media decision makers to help them contribute to more balanced reporting about a complex phenomenon.

More research will need to be conducted to improve understanding of the interplay between the media's reporting, public opinion and establishment discourse. In particular, more research is needed into the role of media in reporting fatalities and dealing with the crisis of missing persons in the aftermath of migrant disasters that adds uncertainty to the pain and ordeal of the families left behind.

Above all, media need to recognize that migrants and refugees are often vulnerable minorities who can quickly become scapegoats for the ills of society – social and economic decline, crime and unemployment, pressure on health and welfare services and lack of security.

Media and journalists' groups can counter this threat and help people better understand the complex migration story by applying ethical principles, avoiding crude stereotypes and developing good newsroom practice.

Media should prepare concise guides to promote best practices for the reporting on refugees and migrants. In addition, all media should examine their internal structures to make sure they are telling the story in the most effective way. News organizations can:

- **Appoint** specialist reporters with good knowledge of the subject to the migration and refugee beat and ensure they work closely with migration data experts.
- **Provide detailed** information on the background of migrants and refugees and the consequences of migration. It is especially important to note that some major studies reveal how migration can strengthen national economies in the longer term, even where there are short-term challenges.
- **Avoid** political bias and challenge deceptive handling of the facts and incitement to hatred particularly by political, religious or other community leaders and public figures.
- **Respect** sources of information and grant anonymity to those who require it most, particularly those who are vulnerable and most at risk.
- **Establish** transparent and accessible internal systems for dealing with complaints from the audience over coverage of migrant and refugee issues.
- **Review** employment policies to ensure newsroom diversity with reporters and editors from minority communities.
- **Provide training** for journalists and editors covering everything from international conventions and law to refugee rights and what terms to use while covering refugee stories.
- **Monitor coverage** regularly. Organise internal discussions on how to develop and improve the scope of migration coverage.
- **Manage online** comments and engage with the audience to ensure that migration stories are not used as a platform for abuse or intolerance.

Media associations and journalists' unions can also support national structures for independent regulation or self-regulation of journalism, such as press councils. Where there are industry-wide codes of conduct and guidelines dealing with non-discrimination these should cover reporting migration.

Engage with the media audience and connect with migrants: Refugee groups, activists and NGOs, many of which provide vital information for media, can be briefed on how best to communicate with journalists, and media can explain to the audience their policies and editorial approach that may encourage readers, viewers and listeners to contribute useful additional information. Media should also play a role with migrant and refugee support groups in establishing monitoring projects to track missing persons.

Support efforts to identify missing migrants: Media can play an important role in working with migrant support groups to help identify and trace dead or missing migrants. In particular, media can assist the IOM's Missing Migrants Project, which collaborates with government and non-government entities to collect data. Training seminars on migration reporting should focus on the importance of this issue and how media can help to strengthen national initiatives to compile information on lost or missing persons who may be among the unidentified victims of migration disasters elsewhere. Such work can also be strengthened by encouraging media support groups to join networks campaigning for better quality in collection of data, improved identification of the dead and support to families of the missing.

Challenge hate speech: Hate speech is widespread in the media. Often, it can't be prevented when it comes out of the mouths of prominent public figures, but journalists should always remember that just because someone says something outrageous doesn't make it newsworthy. The Ethical Journalism Network has developed a five-point text for hate speech as a useful tool for newsrooms (see below).

Access to information: Media cannot report without access to reliable information and facts. When access to information is restricted, such as not being allowed to enter refugee camps, media and civil society groups should press the government both nationally and internationally, to be more transparent. Media and journalists' unions should meet regularly with police and State authorities and agencies to ensure journalists have safe conditions in which to work and access to the information they need.

PANEL ONE

The boy on the beach: How media reacted

The dramatic and moving picture of the small boy found dead on a Turkish beach became one of the most stirring images of journalism in 2015, but it raised many questions about how media report death and about issues related to privacy.

These are no small questions, and in preparing this article, the authors agreed that the discussion of the picture and its use could be usefully undertaken without repeating the harm caused to the family by naming him and reproducing the image of his body, rather than one of him alive and with his family.

Inside journalism, many had mixed feelings about using the picture. In many countries, editorial comments sought to justify their decisions on use of the picture and identifying the victim and his family. Journalists took to interviewing colleagues about their concerns.⁴⁶

The editorial process involved in publishing images of dead migrants, or indeed other victims of violence, has not been widely studied, but this picture stirred up discussion in editorial offices around the world and became the theme for a special report for the issue of *Ethics in the News*, published by the Ethical Journalism Network in January 2017.⁴⁷ This report, by Dutch filmmakers Misja Pekel and Maud van de Reijt, examined the way media used the picture and considered the dilemmas faced by photo editors and publishers.

The authors canvassed opinion among editorial leaders and asked whether it is ethically permissible to print photos of the body of this young child. What consideration is there of the privacy and grief of the boy's family? What thought has been given to its impact on the media audience, some of them young and vulnerable? And what made this picture special among the thousands of other images of suffering and death involving refugees and migrants?

A day after the photo went viral, Serge Ricco, art director of French magazine *L'Obs*, decided he would not publish it. Ricco told the Dutch newspaper *NRC Handelsblad*: "I'm thinking of the dignity of the child. Moreover, this photo will not change the course of history in any way."

Most editors disagreed (as did Ricco's colleagues on the online edition of *L'Obs* who took their own decision to publish), but the treatment of the picture owed more to its aesthetic quality than simply telling the story of a single death.

Journalists in their reporting of horrific events tend to avoid the full horrors of human suffering; as the photo editor of the Dutch newspaper *Trouw* put it: "Before, we only saw pictures of decayed bodies. These you simply do not show. [This] photo was the first one that made you wonder: is he asleep or is he dead? That is why we thought it was reasonable to print this picture."

This raises not only a question about the aesthetic value of the picture, but whether such an approach which marginalizes other concerns, regarding the dignity of the victim and the privacy of the family concerned, reflects a Eurocentric lens through which the crisis is observed.

Whatever quality the image had, there is no doubt that the influence of social media was profoundly important. At *Le Monde*, for instance, the photos of the dead child arrived too late for that day's paper. They were published a day later. Nicolas Jimenez, photo editor-in-chief explained: "During the evening the photos became major news. I received them ... during the whole day via social media. Also from friends and family to such a point you can't ignore it anymore."

This reflects the power of social media to drive the news agenda. Something that is viral online is difficult to ignore by journalists and media, particularly when they are increasingly dependent upon a business model that relies upon sensational news information to generate online advertising revenues.

The problem is that online information, unlike journalism, is often value-free, and there is no distinction between information that is truthful or misleading and fake.

For the Dutch newspaper *Het Algemeen Dagblad*, the lack of context and background information was a reason not to publish. According to editor-in-chief Christiaan Ruesink: "Paper is different from online. More contemplative, it needs more context." However, when the images became so widespread, Ruesink felt he needed to apologize to his readers. And the newspaper decided to print the pictures after all.

⁴⁷ See *Ethics in the News*, www.ethicaljournalismnetwork.org

PANEL TWO

How a media scandal led to the Charter of Rome

The Carta di Roma (Charter of Rome), now one of Europe's leading specialist media monitoring groups that is focused on the migration story, itself came into being after a scandal over media racism.

The charter was drawn up following a letter written by Laura Boldrini, the Italian United Nations High Commissioner for Refugees (UNHCR) representative, to leading Italian editors on 19 January 2007, in response to their treatment of the gruesome murder of four people in the northern town of Erba a few weeks earlier.⁴⁸

The murders were initially blamed on the victim's Tunisian husband, Azouz Marzouk, whose two-year-old son also died in the attack. Marzouk was widely depicted by media as a monster, with press and television interviews featuring aggressive criticism of the Tunisian immigrant community. It was then revealed that he was in Tunisia at the time of the attack. Subsequently, two neighbours confessed to the murders and were prosecuted.

In the letter, the UNHCR condemned media reports saying: "Strong and rather unexpected evidence of xenophobic sentiments emerged, as did a media system ready to act as the sounding board for the worst manifestations of hate."

Many journalists were also shocked that once the truth emerged, none of the major media outlets apologized for their intemperate coverage. There was no display of conscience or responsibility, at best only a regretful shrug.

The protest opened up a dialogue on racism and media coverage of refugee and migration issues, much of which had been characterized by alarmist and warlike language and which was blamed for stirring up hostility and intolerance.

The Italian journalists' union, working with the national editors' association, academics, press employers, media experts and the UNHCR, prepared a draft a code. Once on paper, it became a topic for wide-ranging, often heated discussion inside media and beyond. The conclusion was the adoption of the Charter of Rome.

The Charter calls for "maximum care when dealing with information concerning asylum seekers, refugees, victims of trafficking and migrants". It recommends the use of appropriate legal terminology and calls for accurate, verified information, and safeguards for those who speak to the media. It recommends media to consult experts in order to make provide information in context in their reporting.

The Charter led to the creation of an observatory to monitor media coverage and to provide analysis on these issues, as well as training programmes for journalists organized by media owners and the journalists' union. The observatory produced two in-depth reports on migration issues in January and December 2014.

Significantly, the Charter also produced a glossary to define "asylum seeker", "refugee", "beneficiary of humanitarian protection", "trafficking victim", "migrant/immigrant" and "irregular migrant", to encourage their appropriate use.⁴⁹

The Observatory's analysis and comment on the treatment of migration-related issues in the media, which includes fact-checking reports and highlighting cases of overt violation of the charter, is accompanied by regular engagement with news media over their coverage.

⁴⁸ See Moving Stories, Ethical Journalism Network (2016) (pp. 25–31).

⁴⁹ For further information and the full text of the Charter, see <http://ethicaljournalismnetwork.org/resources/publications/moving-stories/charter-of-rome>

PANEL THREE

Journalists doing their job: Excellence in telling the migration story

In spite of the political, economic, industrial and cultural challenges that serve to diminish the capacity for quality journalism these days, there is no shortage of inspiring examples of journalists trying, and succeeding, to improve the flow of useful and reliable information about the migration and refugee crisis.

One journalist who had a front row seat in the drama of the European migration crisis is Patrick Kingsley, who produced award-winning journalism in his period as the first Migration Correspondent for the *Guardian*. His book, *The New Odyssey* (Guardian Books, 2016), is an account of his reporting and travels through 17 countries along the migrant trail, meeting hundreds of refugees making epic journeys to reach Europe. His reporting for *The Guardian* focused on the migrants and their story – why they keep coming and how they do it. The paper's editors gave him time and space to report on all aspects of the story. His reporting led to him receiving the British Press Awards foreign journalist of the year award in 2015.

But reporting is not without ethical challenges and legal complications as broadcast journalist Fredrik Örnevall found in 2014 when he was filming a documentary about the response of European nationalist parties to the migration crisis. During the assignment, he met a 15-year-old Syrian refugee in Greece. He and his team decided to help the boy get to Sweden. The film they produced on the boy's journey was broadcast on Swedish television to widespread acclaim, but he was then prosecuted for people smuggling.⁵⁰

His action prompted a fierce national debate within journalism about the role of journalists in reporting – are they participants in the story or solely observers? – but Örnevall was defiant: “I regret absolutely nothing. I know what we did and I would have done the same today,” he told Swedish television. “How can I regret helping a terrified boy begging for my help?” he said.

Lawyers called for an acquittal on the grounds that he acted out of compassion and concern for the boy's fate. But judges in Malmö found him guilty in February 2017 of smuggling and gave him a suspended sentence. The journalist said he would appeal against the ruling.

Despite the controversial anti-migrant rhetoric of United States President Donald Trump, many journalists are taking the Government to task over its migration policies. The *Buzzfeed* report “America's Quite Crackdown on Indian Immigrants”, for instance, on how the Government of the United States has moved quietly and aggressively to prevent undocumented Indians from entering the country, many of them Sikhs fleeing political oppression or economic collapse at home, led to an award for reporters David Noriega and John Templon from the French-American Foundation in 2016.

And awards, too, have gone to the journalists who were among the first to collect statistical information on migrant fatalities. A consortium of journalists from 15 European countries set up the Migrants' Files, which first published results in 2014. Counting casualties is one of the only ways to assess the effectively hold governments to account for their policies, they argued and many media used their data. The European Press Prize Innovation Award in 2015 went to the team behind *The Migrants' Files: Surveying migrants' deaths at Europe's door*: Nicolas Kayser-Bril, Jacopo Ottaviani, Sylke Gruhnwald, Jean-Marc Manach, Jens Finnäs, Daniele Grasso, Ekaterina Stavroula, Alessio Cimorelli, Andrea Nelson Mauro and Alice Kohli.

⁵⁰ As reported in the *Guardian*, see: www.theguardian.com/world/2017/feb/09/swedish-journalist-convicted-of-smuggling-for-helping-syrian-boy-migrate

Groundbreaking journalism is also found in the south, of course, as noted in the surveys and studies mentioned in this report and also in countries which are exporting workers. Adil Sakhawat, for instance, a journalist from *The Dhaka Tribune* won in the National-level Print category for his story, “Where women are the breadwinners”. He was one of ten Bangladeshi journalists recognized for their coverage of the country’s migration sector in 2016.⁵¹

And the quality of migration reporting on television, particularly from leading global networks such as *CNN*, the *BBC* and *Al Jazeera English*, as well as scores of national and regional public broadcasters, confirms that although the migration story is complex and subject to intense scrutiny and undue influence from governments and unscrupulous politics, it provides opportunities for journalism to shine. The growth in the provision of media awards, for instance, is evidence not only that policymakers see the importance of promoting high standards, but that there is much journalism on the subject worthy of praise and recognition.

References

Agence France-Presse (AFP)

- 2017 Journalist convicted of smuggling for helping Syrian boy migrate to Sweden. *The Guardian*, 9 February. Available from www.theguardian.com/world/2017/feb/09/swedish-journalist-convicted-of-smuggling-for-helping-syrian-boy-migrate

Allen, W.L.

- 2016 *A Decade of Immigration in the British Press*. Migration Observatory, Centre on Migration, Policy and Society, University of Oxford. Available from www.migrationobservatory.ox.ac.uk/resources/reports/decade-immigration-british-press/

Buchanan, S., B. Grillo and T. Threadgold

- 2003 *What’s the Story? Media Representation of Refugees and Asylum Seekers in the UK*. ARTICLE 19, London. Available from www.article19.org/data/files/pdfs/publications/refugees-what-s-the-story-.pdf

Dhaka Tribune

- 2017 Brac Migration Media Award 2016 goes to 10 journos. *Dhaka Tribune*, 13 April. Available from www.dhakatribune.com/bangladesh/2017/04/13/brac-migration-media-award-2016-goes-10-journos/

Fahey, J.

- 2015 The Guardian’s decision to publish shocking photos of Aylan Kurdi. *The Guardian*, 7 September. Available from www.theguardian.com/commentisfree/2015/sep/07/guardian-decision-to-publish-shocking-photos-of-aylan-kurdi

Hayed, F.

- 2017 Algeria: Public debate needed to confront denial and media stereotypes. In: *How Does the Media on Both Sides of the Mediterranean Report on Migration?* International Center for Migration Policy Development, Vienna, pp. 70–73. Available from www.icmpd.org/fileadmin/2017/Media_Migration_17_country_chapters.pdf

⁵¹ As reported in the *Dhaka Tribune*, see www.dhakatribune.com/bangladesh/2017/04/13/brac-migration-media-award-2016-goes-10-journos/

International Organization for Migration

- n.d. Missing Migrants Project website. Available from <https://missingmigrants.iom.int/> (accessed July 2017).

Italian National Press Federation

- 2008 Charter of Rome: Code of conduct regarding asylum seekers, refugees, victims of trafficking and migrants. Italian National Press Federation, Rome. Available from <http://ethicaljournalismnetwork.org/resources/publications/moving-stories/charter-of-rome>

Kingsley, P.

- 2016 *The New Odyssey: The Story of Europe's Refugee Crisis*. Guardian Faber Publishing, London.

Macannico, Y.

- 2015 A charter for tolerant journalism: Media take centre stage in the Mediterranean drama. In: *Moving Stories: International Review of How Media Cover Migration* (A. White, ed.). Ethical Journalism Network, London, pp. 25–31. Available from <http://ethicaljournalismnetwork.org/wp-content/uploads/2016/09/moving-stories-ejn.pdf>

The Mediterranean Missing Project

- 2016 Missing migrants in the Mediterranean: Addressing the humanitarian crisis. Summary report. Available from www.mediterraneanmissing.eu/wp-content/uploads/2015/10/Mediterranean-Missing-Summary-report-290816.pdf

Moorehead, C.

- 2005 *Human Cargo: A Journey Among Refugees*. Chatto & Windus, London.

Noriega, D. and J. Templon

- 2016 America's quiet crackdown on Indian immigrants. *Buzzfeed*, 31 January. Available from www.buzzfeed.com/davidnoriega/americas-quiet-crackdown-on-indian-immigrants

Pekel, M. and M. van den Reijt

- 2017 Refugee images: Ethics in the picture. In: *Ethics in the News: EJM Report on Challenges for Journalism in the Post-truth Era* (A. White, ed.). Ethical Journalism Network, London, pp. 18–21. Available from <http://ethicaljournalismnetwork.org/wp-content/uploads/2017/01/ejm-ethics-in-the-news.pdf>

Reynolds Journalism Institute and Ethical Journalism Network

- n.d. Accountable Journalism website. Available from <https://accountablejournalism.org/> (accessed July 2017).

The Migrants' Files

- 2016 The Migrants' Files homepage. Available from www.themigrantsfiles.com (accessed July 2017).

Chapter 4

Migrant bodies in Europe: Routes to identifying the dead and addressing the needs of the families of the missing

Simon Robins⁵²

4.1. Introduction

Missing migrants in the Mediterranean

In recent years, substantial numbers of migrants⁵³ have sought to make the journey across the Mediterranean through both the eastern route, from Turkey to Lesvos, or other Greek islands of the Aegean, and the central route from North Africa to Lampedusa or Sicily. Lesvos remained the key entry point for most migrants and refugees in the period 2012–2016, with approximately 490,000 refugees landing on the island between 2015 and mid-2016 (United Nations High Commissioner for Refugees (UNHCR), 2016). Migration has been driven by both the revolutions of the so-called Arab Spring, as well as by the conflicts that followed in the Syrian Arab Republic and Libya. Significant numbers have also come from sub-Saharan Africa and States such as Afghanistan and Eritrea that have long generated large numbers of asylum applications in European Union States. These flows have been accompanied by a significant number of deaths, arising as a result of migrants travelling in boats that are in poor condition, too small to handle the open sea, and typically massively overcrowded. The bodies of those who drown in such shipwrecks are either lost at sea – in numbers impossible to estimate – or washed up on the beaches of the countries and territories of the Mediterranean.

This chapter sets out to describe how the bodies of dead migrants – and the data that can be collected from them – are managed in Greece and Italy, as well as the efforts of authorities in these States to make identifications. This is framed by the need to collect not only post-mortem data from bodies, but ante-mortem data from families of missing migrants, such that a match can be attempted that offers a route to identification. The motivation for making such identifications is both international human rights law, which places obligations on States (Grant, 2016), and the needs that have been articulated by families to know the fate of missing loved ones (Mediterranean Missing Project, 2016a).⁵⁴ Data from recent research are summarized to suggest new approaches are required in Europe that will ensure both that relevant post and ante-mortem data are collected and that they are managed and stored in ways that allow the sharing of data across international borders. The chapter proposes a new agenda for research that can inform such approaches.

⁵² Simon Robins is a humanitarian practitioner and researcher with an interest in transitional justice, humanitarian protection and human rights. He is a Senior Research Fellow at the Centre for Applied Human Rights at the University of York, and consults for a range of international agencies. The issue of disappeared and missing persons remains a focus of his work: he recently published a book titled *Families of the Missing: A Test for Contemporary Approaches to Transitional Justice* and has used this experience to drive research around the issue of those missing in migration.

⁵³ See chapters in *Fatal Journeys Volume 3 Part 2* for a detailed discussion of the recorded numbers.

⁵⁴ The Mediterranean Missing Project has been a major data source for this chapter. This was a one-year research collaboration between the Centre for Applied Human Rights at the University of York, the IOM's Global Migration Data Analysis Centre (GMDAC) and City University, London. The research was funded by the UK Economic and Social Research Council as a part of an urgent strategic call related to the Mediterranean migration crisis. The authors of Mediterranean Missing reports referenced here are: Frida Ben Attia, Tara Brian, Adrian Carrasco Heiermann, Stefanie Grant, Catriona Jarvis, Iosif Kovras, Frank Laczko, Giorgia Mirto, Katerina Polychroni, Simon Robins, Ann Singleton and Amal Shaiah. More information on the project can be found at <http://mediterraneanmissing.eu/>

From January 2014 until the end of June 2017, an estimated 14,469 – over 11 per day – have lost their life in deadly shipwrecks in the Mediterranean (International Organization for Migration (IOM), 2017), and an unknown number have died but their bodies never recovered. The Central Mediterranean route, ending at Lampedusa or the main island of Sicily, accounts only for about a quarter of almost 1.5 million people who have arrived since 2014 on all routes, but for 88 per cent of all migrant deaths in the Mediterranean (ibid.). While overall numbers of migrants attempting to cross the Mediterranean by the eastern route were reduced significantly in 2016 by the European Union-Turkey Statement (Council of the European Union, 2016), death rates have increased to 2.1 per 100 in 2017, relative to 1.2 in 2016 (IOM, 2017). Part of this rise is due to the greater proportion of migrants now taking the most dangerous route – that across the Central Mediterranean – such that 1 in 49 migrants now died on this route in 2016. For every body that is retrieved or washed ashore, there are family and friends whose lives are substantially affected by the loss of their loved ones. This sets the scene for a transnational humanitarian challenge that affects not merely the authorities at the European Union periphery tasked to deal with this problem, but also the lives of thousands of families in countries of origin.

Policy, legislative and operational gaps in terms of managing dead bodies and addressing the issue of the missing remain at both local and national levels, reflected and compounded at the level of the European Union. As such, policies have not been designed to explicitly address the question of deaths of migrants on arrival at, or en route to, the European Union, nor the needs of their families. However, the European Union does have a remit to ensure that the human rights of migrants are protected. Underpinning treaty obligations is the European Convention for Human Rights (Council of Europe, 1950), which includes a positive duty to prevent the loss of life, and a positive obligation to investigate suspicious deaths. Issues linked to deaths during migration, such as the role of families, are however often invisible elements of these tragedies, and this invisibility is also reflected in the lack of a concerted policy response at European Union level to the problem. “The deaths occurring in the Central Mediterranean take place within a geographical space which reflects a gap between the operational mandates of the national agencies and Frontex, the EU border management agency, and a policy gap at national, EU and international levels.” (Mediterranean Missing Project, 2016a)

Here, research findings and literature concerning migrant deaths in the Mediterranean, missing migrants and the management of the bodies of dead migrants in European Union States will be discussed. The main source is the findings of the Mediterranean Missing project, a recent research project to interrogate the phenomenon (ibid.).

4.2. Impacts on families of missing migrants

The families of missing migrants are the victims of this humanitarian disaster, and yet the impacts on them are largely unknown. They remain unrepresented in discussions about the management of bodies and the broader crisis, and largely unable to engage with the authorities who can identify their loved ones. There are few data about the impact on families. Data presented here are largely from the Mediterranean Missing project, which carried out interviews with families who are missing loved ones who have migrated across the Mediterranean, from Tunisia, Syrian Arab Republic, Iraq and elsewhere. One aim of the research was to give a voice to such families (Mediterranean Missing Project, 2016b). Data were collected in Tunisia through an engagement with Terre pour Tous, an association of families of those missing in migration, and elsewhere through contacts made through social media, around Facebook pages and other online resources that seek to aid families in their search for the missing. Given that families are highly dispersed across multiple nations, accessing them systematically is challenging. One lesson of the Mediterranean Missing project is that mobilizing families in organizations that can represent them both allows their voices to be heard in discussions of the issue of missing migrants, and facilitates data collection from them.

Families either saw their loved ones leave home to take a boat, or – in many cases from Iraq and Syrian Arab Republic – travelled with them and other family members. In the latter case, many interviewees were themselves traumatized by the shipwreck they survived. The majority of families have received no news of the missing and as such live in ambiguity, with no idea whether loved ones are dead or alive. While those who have witnessed deaths in shipwrecks understand the missing may have drowned, others have a visceral belief that their family member is alive, believing that the missing are detained in Europe or elsewhere and so unable to contact them (Mediterranean Missing Project, 2016b). The primary need of families is to know: they seek closure, through information concerning the fate of loved ones. They want to know if the missing are dead or alive, and in any case where they are. If the missing are dead, families need their bodies to be repatriated so they can be honoured and buried where families can visit them, and they can take their place as a part of their community (ibid.).

The impacts on families of having a missing relative are many. While a death can be mourned, disappearance is something that cannot be understood in the light of everyday experience, trapping family members in a situation they struggle to make sense of. The families interviewed demonstrated a range of symptoms associated both with the impact of trauma and of ambiguous loss, including sadness, sleep disturbance and dreams of the missing, anxiety and hypervigilance. They reported a sense of stasis, a feeling that life had stopped since the person went missing. A minority reported that they had psychiatric problems that they linked to the disappearance, and were receiving treatment for them.

Iraq, Iraqi Kurdistan, Sulaymaniyah, 25 September 2015.
The family of Shwan Hussein, 23, a Kurdish migrant who died while being smuggled to Europe, visits the cemetery. Shwan's body was brought back home to Sulaymaniyah from Austria, where he died crammed in the back of a truck with 70 others. © NOOR 2015 (Photo: Yuri Kozyrev)



Having a missing relative gave rise to family conflict, with individuals isolating themselves and neglecting relationships with family, to pursue an obsessive interest in the missing person. In many families, there were divergent opinions as to what had happened to their missing relative, fuelling family conflict and preventing the missing person from being discussed. Missing someone from the family was also seen to impact on family roles, with women in particular having to take on greater responsibilities in the home where men, particularly husbands, are missing. Women also reported becoming a target for harassment where a husband is missing, as well as seeing their identity challenged since their status as wives or widows is ambiguous. Wives of the missing reject any possibility that they could remarry without definitive news of their husbands. Families also reported challenges to livelihood, where they were often left without the economic support of young men who were potentially their most productive members.

Families of the missing had mechanisms that helped them cope, and in most cases, were able to function well despite the pain and anxiety of their situation. Solidarity was considered a great support, where families were in contact with others in their community who were also missing relatives, as in Tunisia where a family association brought affected people together. The Muslim faith of most affected families is also a source of strength and resilience. The lens of *ambiguous loss* (Boss, 1999) is one way to interpret impacts on families, as well as offering a route to therapeutic approaches, representing a model that can aid understanding of the impact of having a relative missing in migration. Existing coping mechanisms can be supported by ensuring that family associations are able to bring affected families together and giving such family meetings an explicitly therapeutic element.

4.3. Policy responses in Italy and Greece

The main countries of interest in terms of managing bodies and data that can aid identification are Italy and Greece. Authorities and other actors in both Lesvos and Sicily face the following key challenges (Kovras et al., 2016):

- The complex nature of the issue and too little transnational cooperation;
- Insufficient outreach to include families in the investigation;
- A large number of actors and limited coordination, especially transnationally;
- Investigation driven by the prosecution of smugglers, rather than the humanitarian need for identification; and
- A failure to broadly implement existing protocols, regulations and examples of good practice.

In both Greece and Italy, the response of policymakers has, to some extent, been driven by the public exposure given to particular shipwrecks that resulted in mass deaths. This is particularly true in Italy, where the shipwrecks of 3 and 11 October 2013 – in which at least 387 persons died – drove the activation of a different set of protocols and standards, in contrast to the deaths that occurred earlier, and those that continue to occur. Following the events of late 2013, Italian actors adopted new approaches, increasing for example the frequency of taking biological samples that allow for DNA testing.

The main steps in managing bodies in the context of migrant deaths include retrieval, transfer of bodies, autopsy, storage and burial/repatriation (Morgan, Tidball-Binz and van Alphen, 2009). In reality, these separate steps are linked to each other and overlap.

4.3.1. Retrieval and transfer of bodies

Retrieving bodies is crucial, as those never recovered cannot be identified. Weather conditions, time between death and recovery, and time to take the body to land, all have an impact on the decomposition of bodies and thus the ease (or difficulty) of identification. Organizing a timely recovery of bodies is thus key to maintaining a high chance of identification.

In Sicily, the first responders to an emergency such as a shipwreck are the Italian Navy, as well as several other actors in the Mediterranean, including ships from other European Union countries that operate within the framework of Frontex joint operations and those of international and civil society organizations. In Greece, the authority responsible for retrieving bodies and for dealing with the dead and missing is the coast guard, which is also responsible for rescuing survivors of shipwrecks and recovering bodies when washed ashore. This sheds light on a tension between the mandate of policing the border and preventing criminal activities, and humanitarian operations, such as rescuing survivors, collecting dead bodies or leading investigations for their identification.

First response is a key moment for collection of both bodies and data linked to deaths, such as personal belongings. There is however also a question of the limited resources to retrieve the dead that are also those most needed for search and rescue of the living. The collection and management of the data that are collected in such incidents remains a central issue.

4.3.2. Investigation, data collection and management

Both the international and national legal frameworks impose a duty on national authorities to investigate “non-natural deaths”, such as those from shipwrecks in the Mediterranean.⁵⁵ Yet, in practice there is little active investigation with even easily-accessible personal effects (e.g. SIM cards, notebooks, credit cards) often left on the beach. Successful identification requires a systematic collection of different types of data and their respective management.

Identification will typically occur by bringing together post-mortem data from the body (distinguishing features, material effects such as SIM cards and wallets, DNA data, witness testimony) with ante-mortem data from the families of the missing (such as a description of the missing and DNA data). An effective system is one that collects data in a standardized way⁵⁶ and stores them in a centralized database that facilitates the sharing of these data with actors in other institutions or countries that permits ante and post-mortem data matching. Systematic interviews with survivors are one valuable source of post-mortem data, including potentially details of the name or origin of the dead, but are not currently carried out in either Sicily or Greece for purposes of identification. Resource limitations do however often constrain the collection of both such testimony and the material effects. Biological reference samples, for DNA data extraction, are however now increasingly taken in both Sicily and Lesbos.

In Italy, the position of Special Commissioner for Missing Persons was created in 2007 as the central institution coordinating efforts in identification and outreach to families. The Commissioner’s mandate includes coordination and supervision of the actors involved, maintaining a national database on missing persons, as well as liaising with families of the missing, international and civil society organizations and other actors. In the context of migration-related deaths, the office of the Commissioner has specifically dealt with three shipwrecks: the incidents of 3 and 11 October 2013 and the case of 18 April 2015.

⁵⁵ The European Court of Human Rights and the UN Human Rights Committee have set out the steps that the State must take when a non-natural death occurs: protection of the right to life entails both a substantive duty to prevent deaths and a procedural duty to investigate deaths.

⁵⁶ See Interpol Disaster Victim Identification forms. Available from www.interpol.int/INTERPOL-expertise/Forensics/DVI-Pages/Forms

There remains however a further tension between legal duties and the reality that – at the peak of the refugee crisis – it was practically impossible for the understaffed authorities in both contexts to carry out such an investigative operation. For example, in Lesbos, in the second half of 2015, daily arrivals of refugees and migrants ranged between 2,000 and 3,000 (Strikland, 2015). It would be unreasonable to expect an under-resourced State agency already tasked with collecting and registering thousands of living migrants, to also search for and rescue the missing and deal with dead bodies, while carrying out a systematic and time-consuming investigation to collect and store post-mortem data from shipwrecks. Understandably, the focus was (and is) on the living.

Collecting ante-mortem data from families is one of the most challenging tasks, as it demands outreach to families of the missing, including potentially through cooperation with relevant State authorities in countries of migrant origin. Some civil society actors and international organizations already operate outreach programmes and as such, authorities could make use of the Red Cross tracing network, engage with migrant and diaspora communities and liaise with consular and diplomatic authorities to facilitate such contact.

4.3.3. Identification

There are three stages in the identification process:

Step 1: Visual identification

Visual identification is the most common method currently used in both Lesbos and Sicily, as it demands only that a relative be present to identify the body. However, it does constrain identification to be possible only for bodies in situations either where relative was travelling with the dead person and survived, or where a relative can quickly come to Europe. There are significant limitations to visual identification, including that it is prone to error, particularly when bodies are in a poor condition and families are traumatized.

In Sicily, police officers or members of the Forensic Science Department photograph the body, including the number assigned to the deceased. Investigation is led by the Public Prosecutor's office, which appoints a team consisting of coroners, agents of the flying squad, Forensic Science Department staff and cultural mediators. The latter are responsible for supporting survivors, whereas the other actors are involved in the procedures of managing and identifying the dead. After landing, a first post-mortem examination is carried out by coroners or general practitioners, collecting information on height, weight, presumed age and distinguishing marks, such as tattoos or scars. Usually, the municipality should provide refrigerated facilities in hospitals or cemeteries for examination and storage, but this can become problematic when authorities do not cooperate or have to manage high numbers of bodies. There are two routes to identify the deceased person: (a) visual identification through relatives examining photographs or bodies; and (b) methods that rely on primary identifiers, such as DNA sampling, odontology or fingerprints.⁵⁷

In Lesbos, the coast guard leads the investigation for identification, inviting family members to visit their headquarters where they are shown photographs of victims who appear to fit the description of the missing person. Due to the lack of resources, certified interpreters or a doctor may not be available to support this process, and non-governmental organizations (NGOs) have played a crucial role in offering interpretation services and psychological support to relatives during and after the identification process. If the family does identify their loved one, this leads either to burial in a cemetery in Lesbos or the repatriation of the body.

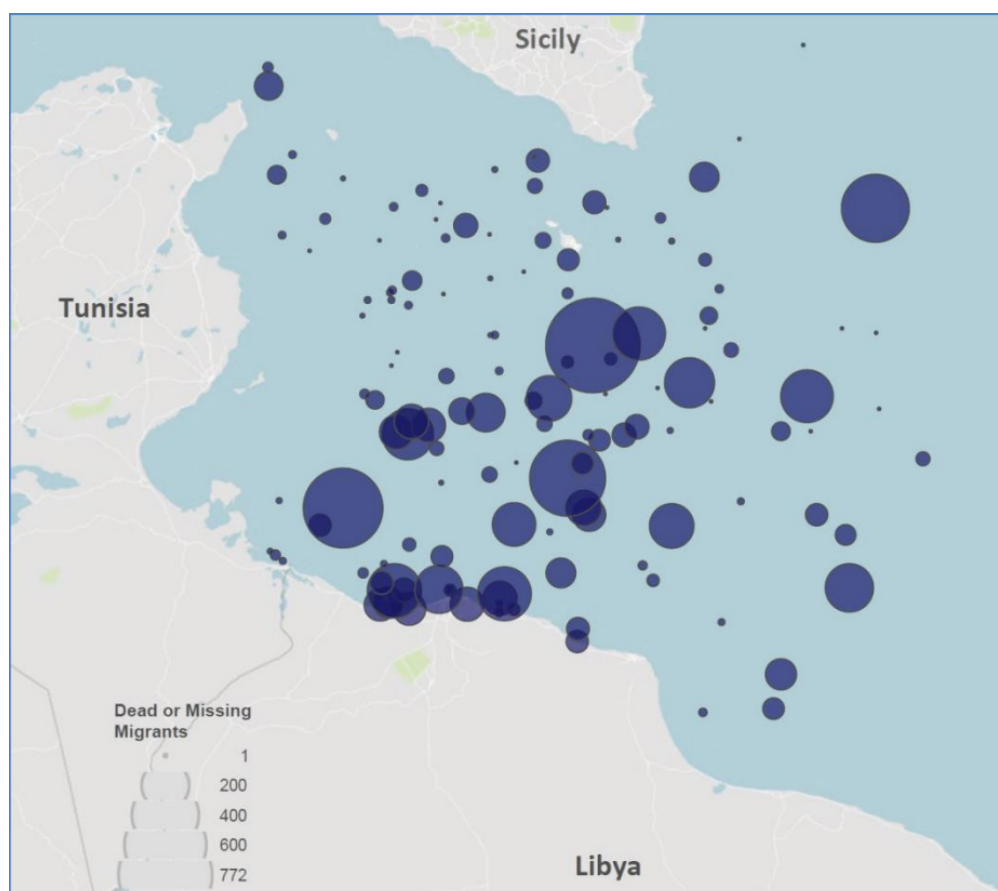
⁵⁷ Secondary identifiers are, for instance, detailed personal descriptions, medical characteristics or personal belongings that are found on the body.

Step 2: The coroner

In Sicily, medical examiners will not always conduct an autopsy; the Public Prosecutor needs to request one, which is only done where the coroner has doubts about the cause of death. Interviews with families of missing migrants have shown a concern at autopsies being done, since they are considered by some to be a desecration of the body (Mediterranean Missing Project, 2016b). During these procedures, the coroner looks for characteristics that might indicate a cause of death other than drowning. The procedure for such autopsies, though likely to be similar throughout Sicily, is not defined in law or regulation, although there are efforts to establish such a protocol more broadly in Italy.⁵⁸ Implementing such a protocol is, however, dependent on the provision of appropriate facilities and financial resources.

In Lesvos, an unclaimed body, according to the law, should stay for 40 days in the morgue. Yet, as a result of poor infrastructure, the local coroner often pushes for a speedy burial to create space for others. The coroner prepares the “death registrar act” required for the burial of unidentified bodies and sends the documents to the local registry office and the coast guard. Two crucial protocol numbers are assigned to each unidentified dead body: (a) the protocol number of the death certificate assigned by the coroner; and (b) the number given by the coast guards (usually the date of the shipwreck and the number of the victim, e.g. 13/10/2013, n.6). It remains unclear as to whether or how these numbers are referenced at the actual grave, and thus what the implications are for linking data from the coroner with a particular body in the ground, potentially implying there is no route to identify a given set of post-mortem data with a particular gravesite.

Map 6. Dead and missing migrants in the Central Mediterranean, 2014–2016



Source: IOM Missing Migrants Project. Data obtained from local authorities, IOM field offices and media reports.

Note: Names and boundaries indicated on map do not imply official endorsement or acceptance by IOM.

⁵⁸ In particular, the memorandum of understanding signed by the Special Commissioner and Milan University, concerning the case of the 18 April 2015 shipwreck. In it, Cristina Cattaneo of Labanof has drafted a highly specified analysis protocol to identify bodies.

Step 3: Forensic data

Identification based on DNA data is rare in both Italy and Greece due largely to the difficulties for families to access the relevant institutions to share ante-mortem data. Despite these difficulties – and the higher costs incurred – authorities prefer identification based on forensic data, as this method is more accurate than visual identification. The success of DNA analysis however depends on how many families can be reached to send samples to the investigating institutions.

In Greece, the coroner takes a tissue sample to extract DNA data from all unidentified dead bodies, which is then sent to the Forensic Science Division (FSD) laboratory, under the Ministry of Interior, and which is a branch of the Greek police.⁵⁹ The FSD is responsible for storing all genetic samples and results and for carrying out any future identification. Families of the missing can send their own genetic samples for identification to the FSD at any stage, through an official agency, or through the Athens embassy of their country of origin. Thus, in Greece, all DNA data is centralized, in contrast to Italy. Although in theory, this means that relatives can send samples from their countries of origins, this is often impossible in countries where there is distrust or fear of State authorities, as in the case of most Syrian refugees for example. There is also no outreach to families, such that families in countries of migrant origin are unaware of the possibility to share tissue samples for DNA analysis. In Italy, research suggests that centralization of the data and liaison with families would be an important improvement for identification work. Primary identifiers such as tissue samples are routinely taken from all bodies and stored in different locations depending on the institution carrying out the examination. In most cases not under the aegis of the Commissioner's office, data are stored at the institutions involved in the investigation, namely the RIS (Investigative Science Department of the Carabinieri), the Regional Cabinet of the Forensic Science Department, the Forensic Medicine Divisions at the universities involved, the Forensic Science Department or the Labanof Institute in Milan. As such, the data are scattered, but this is not necessarily perceived as problematic as long as the coordinating office of the Commissioner knows where the data are. For those victims of the three particular shipwrecks in which the Piscitelli Commission and Labanof are involved, the situation is different, with the potential for high quality data collection and greater efforts at outreach to families (see below).

4.3.4. Burial

In Italy, the responsibility for burying unidentified persons lies with the municipality and requires the provision of appropriate space in cemeteries. Where a person is buried depends mainly on the availability of space, as facilities have filled up due to the high numbers of recent migrant deaths. There are three main challenges concerning the burial of the dead: (a) the costs of a dignified burial; (b) the consideration of religious beliefs; and (c) support for families. Funeral costs can be high and for unidentified migrants, they are sometimes covered by an institution named Opera Pia that provides such services to those lacking the financial means. These and other basic services must be provided, and funding remains an area in need of improvement. Since it is usually unclear as to which faith or confession a body belonged, generalized burials according to a certain religion are problematic. In Sicily, municipalities, in close cooperation with civil society groups and individuals, have set up multireligious ceremonies for the unidentified.

In Lesvos, there are currently two cemeteries on the island where victims of shipwrecks are being buried. Since the mid-2000s and particularly in the early-2010s when the Aegean in general and Lesvos in particular became the key entry point for refugees, the number of deadly shipwrecks increased and the vast majority of identified and unidentified victims were buried in the cemetery of Aghios Panteleimon. Their bodies are lightly covered by earth with only a piece of broken marble on the grave, which indicates a date (of the shipwreck or burial) and a number (for victims of particular shipwreck). Due to the lack of a specific policy or an authority to lead the process, each burial tells a different story and largely reflects the struggle between the families, local NGOs, the willingness of local authorities to assist and the availability of funding.

By far the most important problem with the procedure (or lack of it) followed in this cemetery is the minimal prospect of future identification. First, it is unclear whether the unique protocol numbers assigned by the coroner and the coast guards are put in a visible place on the grave. Second, some numbers are added on gravestones, but these are pieces of broken marble that can be easily removed. Most importantly, it is a non-State actor (i.e. funeral offices) that are tasked to bury the bodies, and as such it remains unclear whether local authorities ensure that protocol is being followed. So, if markers are removed and no protocol is followed, this means that even if a family makes a DNA match at the forensic lab in Athens, it does not necessarily mean that they will be able to find the particular grave of their loved one.

The “new cemetery” in Lesvos was the result of a pressing need for local authorities to bury the 70 dead of the shipwreck of 28 October 2015 – an unprecedented disaster in the Eastern Mediterranean. The new cemetery is located in the village of Kato Tritos, 20 km away from Mytilene and is dedicated to the Muslim dead (Tagaris, 2016).⁶⁰ It is a step forward, providing a long-term solution to the ongoing problem of finding space for burials. Both a protocol number assigned by the coast guard and the number on the death certificate are engraved on the gravestones of all unidentified victims, thereby increasing the prospects of future identification. An Egyptian volunteer manages the new cemetery and ensures that cultural and religious rituals are respected. However, the new cemetery is only an improvisation, stemming from the existing policy vacuum. Despite the positive impact on families, the municipal authorities have delegated their legal responsibilities to an individual with no official status: the volunteer has no formal contractual relationship with the municipality, and as a result, the map of the cemetery remains in the hands of an individual with no official affiliation to the authorities that lead the identification processes.

4.3.5. Repatriation

In the event of identification, families may want to repatriate the body in order to bury it closer to home. In both contexts, a broad range of institutions are involved in the bureaucratic procedures that makes this a long and complicated process.

Italian law provides a detailed protocol⁶¹ of the procedures that have to be carried out before the body can be returned. Only after this process is completed can the body be released and returned. There are two key challenges families face when trying to return the bodies. First, if they have to travel to Italy, they need to get a visa, which is often challenging to obtain for individuals from States of migrant origin; and second, religious considerations such as exhumation can affect whether return of a body is feasible.

In Lesvos, the only realistic window of opportunity for relatives to repatriate bodies is in the first few days after the shipwreck: once burial has taken place, repatriation becomes almost impossible. The only authority that can order an exhumation is the local District Attorney who remains reluctant because of concerns about public health, despite the official consensus that dead bodies are of no threat to public health. Ultimately, practice remains largely arbitrary.

4.4. Conclusion and recommendations

While the current response in Greece and Italy remains largely unable to address the challenge of identifying a significant fraction of the dead, there are examples of good practice in the European Union that can serve to provide a demonstration of what is possible. Those States, largely to the north of the European Union, that have far fewer unidentified migrant bodies to deal with, have shown that it is possible to identify bodies given appropriate resources and commitment of the State.

⁶⁰ Although it remains unclear as to whether some of the unidentified victims buried there were non-Muslims.

⁶¹ See art. 17-36 DPR285/1990.

The United Kingdom has confronted a number of cases whose treatment can inform the larger problem in southern Europe. Stowaways in the landing gear of planes landing at London's Heathrow airport rarely survive their journeys, and bodies have been found in the landing gear and on streets in West London, having fallen from the skies as wheels have opened for landing. In one case, a man found having fallen from a plane with Angolan currency in his pocket was identified through a SIM card that allowed calls to be made that identified him as a Mozambican (The Zimbabwean, 2013). In another case, a body was found in the landing gear of a plane that had arrived from Accra via Saudi Arabia. In the absence of any clues to identity or even country of origin, this case is now an entry in the United Kingdom's Police Missing Persons database.⁶² Such a database – accessible universally – shows the power of both systematic collection of post-mortem data and of its central dissemination, permitting a range of identifying features, including tattoos, portraits, clothing and photographs, to be shared. The death of 23 Chinese migrants picking cockles in Morecambe Bay, who were swept away by rising tides and drowned, was both a domestic and an international tragedy. The British authorities devoted significant resources to identifying the 21 bodies that were found, including seeking information within the United Kingdom and travelling to China. The Government of the United Kingdom also paid for the repatriation of the bodies to China (Spencer, 2004). This case shows what can be done with the will and the resources to do so; it also demonstrates the extent to which all possible avenues are not being explored to identify those whose bodies are found on the shores and waters around Greece and Italy.

The Italian Special Commissioner for Missing Persons⁶³ represents a State effort to consolidate responsibility for management and identification of migrant bodies in a single national institution. The Commissioner's mandate includes coordination and supervision of the actors involved, maintaining a national database on missing persons, as well as liaising with families of the missing, international and civil society organizations and other actors. The Commissioner's office has led such efforts by presenting guidelines for managing such situations, establishing cooperation among some of the central actors to facilitate identification, and engaging with various organizations to drive outreach to families. While the Commissioner remains constrained by the limitation of his mandate to a few specific shipwrecks, the role represents an example of good practice in national coordination that will be a prerequisite to identifying bodies on a large scale, and is for example still absent in Greece.

There is a need both for European States holding post-mortem data to have national structures that can centralize such data, and for them to have access to ante-mortem data from a large range of other sources, including potentially States of migrant origin, other European States and directly from families. This demands the creation of a global architecture that would enable the collection and storage of both ante- and post-mortem data concerning missing migrants from a range of sources, including State authorities and families. Matching of ante- and post-mortem data can then be made either at national level or through some transnational structure.

The difficulty of collecting ante-mortem data from families of the missing is the greatest obstacle to efforts in Italy and Greece to make identifications. An innovation in Sicily has however shown the role social media can play in overcoming the barriers of distance and borders that currently frustrate such efforts. When faced with 24 bodies from a shipwreck, a police inspector in Siracusa, Sicily, used a Facebook page developed in collaboration with the Syrian community on the island to make contact with families. Those who believed their loved ones might have died in the incident could share data with the police, including DNA data where a candidate match was found, permitting identification; all but 3 of the 24 bodies have now been identified – a far better success rate than other methods (Reidy, 2017). While there remain genuine security and data protection concerns over the public sharing of personal data of missing persons, the speed and reach of such an approach demands that it be considered in the struggle to identify the dead.

⁶² See <http://missingpersons.police.uk/en/case/03-000031/27QF44F>

⁶³ Commissario straordinario del Governo per le persone scomparse.

While the above represents a summary of the situation and challenges in terms of managing bodies facing the States of the European Union, the issue must be addressed as a regional one. There thus remains a need to retrieve bodies and collect data from all affected States, and this is complicated by the almost complete absence of data concerning States to the south of the Mediterranean, as well as Turkey. In Tunisia for example, stories have emerged of the mass burial of dead migrants with no efforts made to collect data from them, or provide any dignity in death (e.g. Lageman, 2016). In Libya, where a central State remains absent, local civil society organizations are seeking to cope with the challenge, doing remarkable work in the circumstances (Westcott, 2015). While bodies are retrieved by the Turkish authorities, little is known of their approaches to managing them. A comprehensive approach will demand that these States are also supported to manage bodies appropriately.

4.4.1. Towards a global research agenda around missing migrants

Due to the numbers of both migrants crossing the Mediterranean in recent years and the deaths resulting, it has become the most high-profile context in the discussion of the challenges of irregular migration. As such, it should be at the centre of any research agenda around the issue. However, the lack of effective mechanisms in Europe to manage data and, as a result, to effectively identify the dead on a significant scale, other parts of the world serve as potentially more effective examples of good practice. A global research agenda can thus seek to exploit experience being articulated worldwide while seeing the Mediterranean as a context of importance both in informing research and in learning from practice elsewhere. Priorities for research in the region include:

- Quantitative work to better estimate the numbers dying: as a result of the lack of State-led data collection and centralization, there are no official data quantifying migrant deaths. An example methodology is that used to create the Deaths at the Borders Database (Last, Spijkerboer and Ulusoy, 2016),⁶⁴ for the southern external borders of the European Union, which collected data relating to migrant bodies processed by local authorities in Spain, Gibraltar, Italy, Malta and Greece, notably from death registries;
- Understanding how (and which) data are collected from bodies recovered in all relevant States, and using this as a platform for advocacy for systematic data collection and centralization nationally. This work has begun in Italy and Greece (Mediterranean Missing Project, 2016a);
- Researching potential routes to centralizing data – or access to it – throughout European States: this can include an engagement with States to drive the development of protocols that could be agreed concerning the sharing of relevant data across borders;
- A legal analysis of the implication of European Union data protection law for the sharing of data across European Union borders: this could potentially frustrate any efforts to create shared regional data structures;
- An understanding of what methods are being used to reach the families of the missing, including using social media, to collect ante-mortem data, and an assessment of their efficacy; and
- A continued engagement with families of the missing from affected States to understand their needs, including in terms of support as long as they are unaware of the fate of loved ones. It is also necessary to understand family coping mechanisms, such as through family associations, and their capacity to act as a way for families to raise their voices and become actors in addressing the issue of missing migrants.

⁶⁴ See *Fatal Journeys Volume 3 part 2* for a discussion of this database.

References

- Boss, P.
1999 *Ambiguous Loss: Learning to Live with Unresolved Grief*. Harvard University Press, Cambridge, Massachusetts.
- Council of Europe
1950 European Convention for the Protection of Human Rights and Fundamental Freedoms, as amended by Protocols Nos. 11 and 14, 4 November 1950, ETS 5.
- Council of the European Union
2016 EU Turkey Statement. 15 March. Press statement. Available from www.consilium.europa.eu/en/press/press-releases/2016/03/18-eu-turkey-statement/
- Grant, S.
2016 Dead and Missing Migrants: The Obligations of European States under International Human Rights Law, IHRL Briefing. The Mediterranean Missing Project. Available from www.mediterraneanmissing.eu/wp-content/uploads/2015/10/Mediterranean-Missing-Legal-Memo-290816.pdf
- International Committee of the Red Cross (ICRC)
2009 *Missing People, DNA Analysis and Identification of Human Remains: A guide to best practice in armed conflicts and other situations of armed violence*. Second edition. ICRC, Geneva. Available from www.icrc.org/eng/assets/files/other/icrc_002_4010.pdf
- International Organization for Migration (IOM)
2017 Missing Migrants Project homepage. Available from <http://missingmigrants.iom.int/> (accessed July 2017).
- Kovras, I. et al.
2016 Missing migrants: Management of dead bodies in Lesbos. Greece Country Report. The Mediterranean Missing Project. Available from www.mediterraneanmissing.eu/wp-content/uploads/2015/10/Mediterranean-Missing-Greek-long-report-260816.pdf
- Lageman, T.
2016 The cemetery of unknown refugees from the Mediterranean. *Al Jazeera*, 29 December. Available from www.aljazeera.com/indepth/features/2016/11/tunisia-cemetery-unknown-refugees-161112103347956.html
- Last, T., T. Spijkerboer and O. Ulusoy
2016 Deaths at the borders: Evidence from the southern external borders of the EU. *HIJRA La Revue Marocaine de Droit d'Asile et Migration*, 1:5–23.
- Mediterranean Missing Project
2016a Missing migrants in the Mediterranean: Addressing the humanitarian crisis. Summary report. The Mediterranean Missing Project. Available from www.mediterraneanmissing.eu/wp-content/uploads/2015/10/Mediterranean-Missing-Summary-report-290816.pdf
2016b 'Like a part of a puzzle which is missing': The impact on families of a relative missing in migration across the Mediterranean. Report on the situation of families. Mediterranean Missing Project. Available from www.mediterraneanmissing.eu/wp-content/uploads/2015/10/Mediterranean-Missing-Family-report-260716.pdf

- Mirto, G. et al.
2016 Missing migrants: Management of dead bodies in Sicily. Italy Country Report. Mediterranean Missing Project. Available from www.mediterraneanmissing.eu/wp-content/uploads/2015/10/Mediterranean-Missing-Italy-report-long.pdf
- Morgan, O., M. Tidball-Binz and D. van Alphen (eds.)
2009 *Management of Dead Bodies after Disasters: A Field Manual for First Responders*. Pan American Health Organization, Washington, D.C.
- Reidy, E.
2017 How Facebook helps to reveal the fate of missing refugees. Wired, 9 April. Available from www.wired.com/2017/04/locating-missing-refugees-social-media/
- Spencer, R.
2004 Mystery clouds return of cockle-pickers for burial. *The Telegraph*, 6 November. Available from www.telegraph.co.uk/news/worldnews/asia/china/1475996/Mystery-clouds-return-of-cockle-pickers-for-burial.html
- Strikland, P.
2015 Refugee boats to Greece persist despite winter's chill. *Al Jazeera*, 3 December. Available from www.aljazeera.com/news/2015/12/refugee-boats-greece-persist-winters-chill-151202175107235.html
- Tagaris, K.
2016 Unknown dead fill Lesbos cemetery for refugees drowned at sea. *Reuters*, 14 February. Available from <http://uk.reuters.com/article/us-europe-migrants-greece-theunknown-idUKKCNOVNOIV>
- The Zimbabwean*
2013 Mozambique: Mozambican stowaway buried in London. 29 April. Available from www.thezimbabwean.co/2013/04/mozambique-mozambican-stowaway-buried-in/
- United Nations High Commissioner for Refugees (UNHCR)
2016 Operational Portal: Refugee Situations. Available from <http://data.unhcr.org/mediterranean/country.php?id=83> (accessed July 2016).
- Westcott, T.
2015 Dealing with the migrant dead. IRIN, 30 October. Available from <http://newirin.irinnews.org/dealing-with-the-migrant-dead>



Tucson, Arizona, USA. 2 November 2013. More than 100 people walked in a procession remembering people who died crossing the Arizona desert between Mexico and the United States. According to the human rights group Derechos Humanos, more than 2,500 bodies have been found in the desert since 2000, many of whom are unidentified. Each of the white crosses represents one dead migrant.
© ZUMA Press, Inc. / Alamy Stock Photo



Chapter 5

Identifying dead migrants, examples from the United States–Mexico border

Robin Reineke and Chelsea Halstead⁶⁵

In 2010, the director of the award-winning documentary, *Who Is Dayani Cristal?* (2013) was retracing the steps of a man who had died while trying to cross the United States–Mexico border. Marc Silver, the director, had accompanied sheriff’s deputies to the scene on the day the man’s body had been found in the desert, just 20 minutes from Tucson. Marc then spent weeks in the Pima County Office of the Medical Examiner, following every step of the identification process. When the remains of the Honduran man, Dilcy, were positively identified, Marc accompanied the body to the funeral home, and then onto the same flight itinerary from Tucson to Atlanta, and then Atlanta to Tegucigalpa, the capital of Honduras. Upon arrival in Tegucigalpa, Marc greeted Dilcy’s family, who had driven eight hours from the countryside to pick up Dilcy’s body from the airport. After the family waited for the passengers and cargo to exit the plane, an airline representative came out and told the family that the casket containing Dilcy’s remains had not made it onto the flight from Atlanta to Tegucigalpa. Apparently, luggage took priority over caskets, and with a full flight, Dilcy’s body had stayed on the tarmac overnight in Atlanta.

5.1. Introduction

We live in a world where some bodies can move across borders with relative ease, while other bodies face numerous obstacles, walls and blockades, even when they are no longer living. In the story above, the British filmmaker recording the story of the man who had died arrived in Honduras unimpeded. The filmmaker’s luggage, and the luggage of the other passengers on the plane, arrived without complication. But a dead body, something traditionally guarded, respected and treated with care, had been left to wait on the tarmac alone, not even making the cut to be treated as cargo. Much as migrants, refugees and immigrants face various obstacles to mobility during life, they also face impediments to movement after death. Undocumented Americans avoid major highways, state borders or government offices for fear of deportation. Refugees struggle to get a meeting with an asylum officer, and immigrants spend years longing to see the faces of loved ones who live outside the country due to travel restrictions on their visas. These blockages to movement, exclusions from access to services and walls between families continue in the world of the dead.

This chapter provides an updated assessment of the state of data pertaining to migrant deaths and disappearances along the United States–Mexico border, a discussion of the problems and challenges in the work of tracing missing persons and forensically identifying remains found along the border, and a review of current practices of both governmental and non-governmental

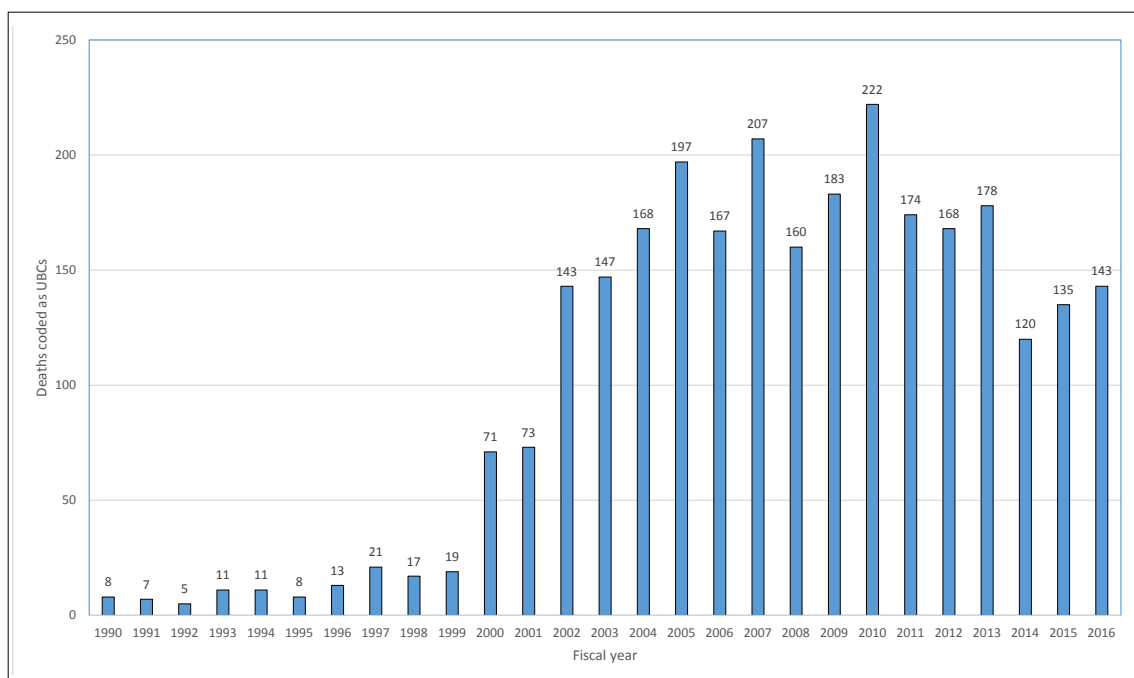
⁶⁵ Robin Reineke, PhD, and Chelsea Halstead, Executive Director and Deputy Director respectively, of the Colibrí Center for Human Rights, a family advocacy organization based in Tucson, Arizona, that works to end death and suffering on the United States–Mexico border by partnering with families of the dead and the missing.

efforts to assist families of the missing and identify the dead. The authors both work for the Colibrí Center for Human Rights, a non-governmental non-profit organization based in Tucson, Arizona. Although the Center works most closely with the Pima County Office of the Medical Examiner (PCOME), Colibrí partners with various governmental and non-governmental organizations along the entire United States–Mexico border with the goal of providing accurate data and information to the families of missing migrants, to county officials, as well as to the international community about this ongoing humanitarian crisis. Colibrí was founded in 2013 building on nearly a decade of work to support families searching for information about missing loved ones on the border. The Center’s database contains records for nearly 3,000 missing migrants, last seen crossing the border. The work of the Center will be discussed in more detail at the end of the chapter.

5.2. History of the crisis and state of the data

In the mid-1990s, communities along the United States–Mexico border began to react to a dramatic increase in the number of deaths of people attempting to cross the United States–Mexico border. The increase followed US federal policies, known as “prevention through deterrence”, that first went into effect in California in 1994. Within one year, the deaths of migrants attempting to cross into California doubled (Cornelius, 2001). By the year 2000, migrant deaths in that state had increased fivefold before shifting to Arizona (ibid.). In Arizona, the increase in deaths happened later, but was ultimately more severe, longer lasting and continues to date. From 1990 to 1999, the average number of migrant remains recovered from the Sonoran Desert and examined by the PCOME was 12 (Martinez et al., 2014). Following the implementation of “prevention through deterrence”, that average rose to 163 deaths per year, representing a more than tenfold increase (ibid.). The data in Figure 15 come from the PCOME and represents the number of remains found in southern Arizona determined to be those crossing the United States–Mexico border from calendar year 1990 through 2016.

Figure 15. Pima County Office of the Medical Examiner deaths coded as UBCs, FY 1990–2016 (N=2,776)



Note: UBC stands for undocumented border crosser.

Source: PCOME, collected January 2017.

The strategy of enforcement undertaken by the US Federal Government, “Prevention through deterrence”, was predicated upon the idea that migrants would be discouraged from attempting to cross the border once they recognized how difficult and dangerous it would be (Cornelius, 2001; Andreas, 2009; Ewing, 2014). The initiative consolidated enforcement efforts along the traditional urban crossing points leaving in between “natural barriers to passage” like the Sonoran Desert with its extremely high temperatures (US Border Patrol, 1994:2). The geography of the desert south-west was of paramount importance in the execution of this strategy. The most remote, mountainous and arid portions of the border would be deployed as a “natural barrier”. While urban areas would be heavily patrolled, these more remote and inhospitable portions of the border would be left relatively unguarded. The 1994 plan stated: “Illegal entrants crossing through remote, uninhabited expanses of land and sea along the border can find themselves in mortal danger” (US Border Patrol, 1994:2). This mortal danger proved to be worth the risk for millions of migrants wishing to cross the border, and thousands have died in the attempt. According to United States Border Patrol, at least 6,915 people have died attempting to cross the United States–Mexico border between fiscal years (FY) 1998–2016 (US Border Patrol, 2016).

The escalation in deaths was initially noted in California and Texas in the late 1990s. As enforcement in those states increased, however, the majority of attempted crossings, as well as the majority of fatalities shifted to the Border Patrol’s Tucson Sector. The PCOME in Tucson, Arizona investigated the deaths of the remains of more than 2,700 migrants between 1990 and 2016 – more than any other jurisdiction in the country. The PCOME continues to produce the most reliable figures regarding migrant fatalities along the border. While it is likely that the deaths of those attempting to cross into southern Texas have outpaced those in Arizona in recent years, the lack of reliable figures and consistent counting methodologies makes a complete count for the state of Texas currently unavailable. To date, there is still no reliable border-wide count of the number of migrant fatalities along the United States–Mexico border. The only border-wide numbers available are produced by the US Border Patrol. These figures are unreliable for a number of reasons.

T’Ohoño O’Odham Reservation, Southern Arizona.
© 2017 (Photo: G. Sanchez)



First, the US Border Patrol provides no explanation of the methodology used to arrive at these numbers, which is problematic given that many small counties along the border do not distinguish migrant deaths from other types of fatalities. In addition, the agency has a track record of miscounting migrant deaths, and for many years did not include unidentified remains in their annual figures. A 2006 US Government Accountability Office study compared yearly totals for migrant deaths in Border Patrol's Tucson Sector of Arizona produced by Border Patrol against those of the PCOME. The study found significant discrepancies, with Border Patrol undercounting known deaths in 2002 by 32 per cent, in 2003 by 43 per cent, and in 2004 by 35.4 per cent (United States Government Accountability Office, 2006). Similarly, Border Patrol's highly publicized statistical annual report for 2015 included a figure for migrant deaths in Arizona that was less than half the number reported by the PCOME – the agency reported 63 migrant deaths in the Tucson Sector in FY 2015, whereas the PCOME reported 133 for the same time period (Duara, 2016).

When asked, the agency has defended the numbers it publicizes by claiming to report only on those fatalities where agents were involved in the discovery of human remains (*ibid.*). Other explanations provided to the authors in person have indicated that local border counties must report their numbers to Border Patrol in order to be included in annual figures. In either case, the methodology is not clearly stated when figures are publicized, and yet the agency does claim credit for any reduction in deaths. A 2016 press release following the publication of the Border Patrol's (inaccurate) FY 2015 figures stated, "Border Patrol agents working along Arizona's border with Mexico stepped up their campaign in fiscal year 2015 to save distressed migrants while giving them options to call for help. As a result, agents report finding fewer deceased migrants" (US Customs and Border Patrol, 2016). Cause and effect cannot be concluded when data is incomplete, and data collection methods are not clarified. When looking at data reported by the PCOME (Figure 15), it is clear that deaths actually increased between FY 2014 and FY 2015. While the United States is unique in that a government entity collects and reports data on migrant fatalities, the consistently unreliable nature of reporting from Border Patrol suggests that this is the incorrect agency for this task. From a human rights and government accountability standpoint, it is a conflict of interest that the same agency charged with policing the United States–Mexico border is trusted to report on the numbers of fatalities. Data on migrant death and disappearance should be collected, managed and shared by an independent government entity with partnership from an academic institution.

5.3. Forensic human identification along the United States–Mexico border: Problems and challenges

As the deaths of those crossing the border increased, local communities worked hard to respond, often challenged by limited resources and lack of external support. There is a high degree of variability between local jurisdictions along the border in terms of the protocols followed to investigate unidentified human remains. It is important to note that there is no legal mandate for medico-legal offices to do everything in their power to identify unknown human remains. For dead bodies that are investigated forensically at a medical examiner or coroner office, legal protections and stipulations relate primarily to the potential for future criminal investigations or public health implications, rather than to considerations for the dead person, or the family of the deceased (Jentzen, 2009; Clark, 2005; Timmermans, 2006). There are jurisdictions along the border that strive to identify the dead, often going above and beyond what is required of them, and there are those that have defended their minimal efforts to identify the dead by pointing to the lack of legal requirement to do so.

In the nearly two decades since the deaths of migrants along the United States–Mexico border reached crisis levels, civil-society initiatives have emerged that support medico-legal offices already doing good work, pressure other jurisdictions to honour international humanitarian

standards, and attend to the gap in services available to families of the missing. In addition to the challenges relating to the condition and investigation of the dead, there are severe problems facing the families who search for information about missing loved ones. Whether in the United States, Mexico or Central America, families of the missing often experience intense fear of authorities. In the United States, this fear is mostly due to the constant threat of deportation, an anxiety that has justifiably increased with the election of Donald Trump, whose campaign regularly used racist language about immigrants and promised the mass deportations (Kopan, 2016; Ball, 2016). Indeed, within the first 100 days of the new administration under Trump, arrests of undocumented immigrants were up 38 per cent nationwide from the same time period in 2016 (Gomez, 2017). In Mexico and in Central American countries, families of migrants are fearful of organized crime groups, drug trafficking organizations and government officials. Regardless of where they live, a significant number of families of missing migrants receive threatening extortion calls, where the family is threatened for searching for the missing person, or told that the callers have the missing person, and will release in exchange for a high price.

Families also experience discrimination and regularly report being turned away from police agencies in the United States or government offices in Mexico when they come forward to report a missing person.⁶⁶ Although it is the duty of consular offices to provide assistance to their nationals on foreign soil, there are also reports of consular officials abusing families of missing migrants. Families have recounted to caseworkers at the Colibrí Center for Human Rights experiences of everything from abusive language to corruption from consular officials. In 2015, a Guatemalan consular official in charge of cases of missing migrants in Tucson was exposed for corruption and fired (La Opinión, 2015). However, the most common complaint from families of missing migrants in regards to government officials is not abuse, but rather that the refusal to take their case or assist them in any way.

The poverty and marginalization experienced by those communities from which migrants originate also means that the ante-mortem data families can provide about their missing loved one is often quite limited. Most families cannot produce medical records or dental X-rays, because the missing person did not have access to medical care. Some families live traditional farming lifestyles, and do not track things such as height or exact date of birth according to a Western calendar. Other families do not even have access to a phone or computer in the home, but must rely on the local church or public notary for communication with people outside the local town. Some families speak only an indigenous language such as Mixtec or K'iche', and not Spanish or English. The gap between the information that families have and that which is needed for an effective search means that missing persons reports for migrants either contain very scant information or are not collected at all. The absence of dental records, hospital records or birth certificates can severely limit the chances that the persons, if they died, can be located among unidentified human remains cases.

The results of a recent study indicate that those migrants with indigenous backgrounds are less likely to be identified than those with more European ancestry (Hughes et al., 2017). The researchers studied the highly variable regions of DNA, called short tandem repeats, for patterns among the dead in the Arizona desert and transported to the PCOME. After comparing those who had been identified with those who had not, the analysis revealed that people with more European ancestry were more likely to be identified than those with indigenous roots (ibid.). The results of this study support the hypothesis that the more layers of vulnerability migrants face, the more challenges their family will face in finding information should they disappear in the desert. These findings have important implications for the work being done to support families of missing migrants. Increased efforts are needed that target underserved populations, especially Mexicans and Central Americans with indigenous ancestry.

Due to both the condition of human remains upon discovery and to the fact that most families of the missing do not have medical or dental records pertaining to their missing loved ones, the science and technology of DNA becomes critically important in this context. There are both

⁶⁶ This observation comes from caseworkers at the Colibrí Center for Human Rights.

new and old challenges relating to the use of DNA in the identification of migrants along the United States–Mexico border. It remains a challenge for DNA collected from relatives of the missing to be effectively compared against DNA taken by forensic officials during the course of a medico-legal investigation of unidentified human remains. Due to lack of coordination between government officials in Mexico or Central America with government officials in the United States, post-mortem DNA data pertaining to unidentified decedents found along the United States–Mexico border is inconsistently compared against Family Reference Sample (FRS) DNA data collected from relatives of the missing. In addition, due to the intense fear and marginalization experienced by families, as discussed above, relatives of the missing often seek out the support of non-governmental organizations (NGOs). In turn, it is largely NGOs that have stepped up to the challenge of supporting the families of missing migrants, where government entities have largely been absent. However, the data collected by NGOs is often prevented from being compared against the data stored in federal databases in the United States, such as NamUs (circumstantial forensic database) or CODIS (the Federal Bureau of Investigation's (FBI) centralized DNA database). Both systems require that each case entered into the system be collected by or vetted by US law enforcement. Despite rigorous scientific standards, and even high-level agreements between an NGO and a foreign government, data collected by NGOs is consistently rejected by NamUs and CODIS administrators due to the lack of involvement of a US law enforcement agency.

With local partnerships between NGOs and entities such as the PCOME, or with Texas State University's *Operation ID*, forensic scientists are able to compare ante-mortem data against post-mortem data and assist with positive identifications without the involvement of the US federal government. In the case of Arizona, there even exists an alternate DNA database to that of CODIS, as the PCOME, in collaboration with the Mexican Consulate in Tucson, agreed to send all post-mortem samples for the unidentified to Bode Cellmark Forensics, a private laboratory. In fact, Bode's database of genetic samples from unidentified human remains found in Arizona is more complete than that of CODIS, containing significantly more samples from unidentified human remains that have not been uploaded into the national database due to funding constraints. Two NGOs – the Argentine Forensic Anthropology Team and the Colibrí Center for Human Rights – have been able to send FRS collected from families of missing migrants to Bode for comparison against genetic data from unidentified remains examined at the PCOME, resulting in hundreds of identifications.

Since the publication of the last IOM report, *Fatal Journeys, Volume 2: Identification and Tracing of Dead and Missing Migrants* in 2016, several new challenges have emerged. First, in mid-2016, the Government of Mexico stopped paying for DNA samples taken from unidentified remains to be sequenced at Bode. Instead, the Government of Mexico has mandated that all post-mortem samples be sent to the Scientific Division of Mexican Federal Police. Although this is completely within the Government of Mexico's purview, it does introduce an unanticipated challenge to the work being done to identify the dead in southern Arizona. The FRS data collected from hundreds of relatives of missing migrants is stored only at Bode, and not at the Mexican Federal Laboratory. From the moment that those post-mortem samples stopped being sent to Bode, the results from FRS submitted to Bode from families of the missing has become much less conclusive. As of the time of writing, any remains found in 2016 or after are not represented in Bode's database, and are therefore not compared against FRS submitted to that database. The PCOME and those NGOs working with families of the missing are currently fundraising to send these additional post-mortem samples to Bode.

The other new challenge related to DNA investigation of unidentified human remains cases relates to the US Federal database, CODIS. In 2017, the University of North Texas, the largest lab that tests DNA for both the missing and the unidentified dead and uploads such data into CODIS, will no longer accept DNA samples from agencies outside of Texas because of a nearly USD 1 million cut to its funding (Martinez, 2017). Instead of funding DNA analysis and comparison for unidentified human remains and missing persons cases, the National Institute of Justice has directed the funds towards the investigation of untested rape kits (*ibid.*). The extent of the impact

of this funding shortfall on the identification of deceased border crossers is currently unknown, but counties along the border are reporting backlogs of samples of unidentified human remains, with no funding for processing.

Finally, the Trump administration has already had negative impacts on efforts to identify and repatriate the remains of those who have died crossing the border. Although undocumented immigrants have always faced a significant amount of fear of deportation, that fear has intensified under the new administration. Families of the missing living within the United States are more afraid than ever of coming forward to report their case. This fear is rational; those who have been recently arrested for deportation include a DREAMer (Gomez and Agren, 2017), a woman while seeking protection from domestic abuse (Mettler, 2017) and a man while he was dropping his daughter off at school (Castillo, 2017). As deportation can translate into the more family separation and future dangerous desert crossings, this fear should not be dismissed. The very real fear experienced by immigrants in the United States has directly impacted identification efforts as families are fearful to approach authorities with missing persons cases.

The challenges faced by those wishing to identify the dead along the United States–Mexico border reveal a larger problem in the way that missing persons and unidentified decedent cases are managed in the United States. The practice of forensic science in the United States is still largely dominated by a law enforcement, rather than by a scientific approach. In addition to causing problems in the justice system, where lack of oversight by scientists can mean the use of evidence in a court of law that is not scientifically valid, thereby sentencing innocent people for crimes they did not commit, the law enforcement domination of forensic identification also poses challenges for the tracing of missing persons and the identification of unknown remains. For those families from vulnerable or over-policed communities, there is little to no alternative to seek information about a missing loved one than to report to the same law enforcement agencies that are so deeply mistrusted. The lack of scientific oversight of forensic practice has accelerated under the Trump administration, as evidenced by the disbanding of the National Commission on Forensic Science, which was founded to review the use of evidence in court cases for misidentifications, and inaccurate or unsupported claims (Murphy, 2017).

5.4. Forensic human identification along the United States–Mexico border: Current practices

In order to understand the varying practices regarding efforts to identify the dead along the United States–Mexico border, the following presents a review of the protocols of the two main governmental jurisdictions involved in investigation and identification of migrant remains cases along the border – the PCOME in Tucson, Arizona, and the Brooks County Sheriff’s Office in Falfurrias, Texas. The following section will discuss non-governmental efforts to identify the dead and trace the missing.

5.4.1. Arizona

Although a small portion of migrant remains fall under medico-legal jurisdiction due to suspicious circumstances (i.e. homicide), the majority of these cases come to the medical examiner’s office because they are unidentified and found without doctor supervision. The Centers for Disease Control and Prevention cites Arizona as one of 22 states in the United States with a medical examiner system, meaning that by law, all suspicious or unattended deaths are seen by a medical examiner – a physician, usually with specialized training in forensic pathology (Centers for Disease Control and Prevention, 2016). In addition to completing the portions of the examination required by Arizona state law, forensic practitioners at the PCOME complete

additional investigative work. Some of this additional work is following the standards set by professional certification and accreditation entities, such as the National Association of Medical Examiners or the American Academy of Forensic Sciences, but there is a portion of the work that is innovative, creative and locally grounded. It is this latter category of practices that will be discussed in detail.

If human remains are still unidentified after external examination, autopsy and forensic anthropology examination, a number of additional steps are taken by the PCOME to identify the decedent. Importantly, unidentified remains believed to be those of migrants are coded as “Undocumented Border Crossers” (Anderson, 2008; Anderson and Parks, 2008; Reineke, 2016). This simple act of coding unknown remains as likely migrants is an innovation that has allowed this office to: (a) report on annual numbers of recovered human remains on the border; and (b) create a list of unidentified remains cases that should be compared against missing persons reports where the person was last known to be crossing the border.

Nearly all unidentified remains the office sees are believed to be migrants, with the exception of one or two cases annually. An average of 150 unidentified remains cases are examined by the forensic anthropology team at the office each year (most, but not all migrant cases, are seen by anthropologists in the office). About 40 per cent of these cases are unresolved each year, adding to a cumulative total of over 900 unidentified human remains that have been examined at the PCOME between the years 2000 and 2016. The PCOME stores unidentified remains for a period ranging from a few weeks to several months, depending on the investigation, after which time they are released to the Pima County Public Fiduciary for cremation. Both the PCOME and the Public Fiduciary maintain careful records so that buried and cremated remains in the cemetery can be associated with medical examiner records.

Unidentified remains investigated by the PCOME can be grouped into two categories: (a) short-term unidentified; and (b) long-term unidentified. Short-term unidentified cases are those where the remains are physically at the PCOME, and medico-legal investigators are actively completing checklists before release. Long-term unidentified cases refer to those cases where the PCOME has completed the examination and investigation, and the remains have been released to the Public Fiduciary. Although PCOME forensic practitioners often continue to try and identify long-term unidentified remains cases after release, the bulk of the identification work is focused on those cases still physically at the facility.

As the crisis of migrant deaths escalated, the office developed what PCOME practitioners call the Unknown Release Protocol (URP), which is a checklist of procedures to be completed before remains are released as unknowns. The URP undergoes regular edits as new procedures are developed and new partnerships emerge with other organizations. The 2016 URP included the photographing of any and all items that could lead to identification, such as ID cards, personal effects, clothing, tattoos or the face when recognizable. It also included the following: (a) fingerprinting and the comparison of fingerprints against various databases; (b) forensic anthropological exam and the completion of skeletal and dental radiographs; and (c) retention of a tissue sample for DNA. The entire case with all relevant details is entered into the National Missing and Unidentified Persons System (NamUs). While the National Institute of Justice encourages local medico-legal offices to enter unidentified cases into the system, this is also not required by law. In addition, the URP includes a final section on comparisons to missing persons reports. Under “Missing Persons Searches for possible matches”, the following are listed: FSC missing persons file, NamUs MP database, OGIS search within two-mile radius of recovery location, and Colibrí consulted for database search. Finally, the URP ends with “All reasonable efforts made to effect identification of remains”.

The list under “searches for possible matches” includes various partnerships with outside entities that manage data about missing persons or unidentified remains cases. The first on this portion of the list, “FSC⁶⁷ missing persons file”, refers to missing persons reports archived

at the PCOME. As discussed earlier, this is an unusual task for medical examiners offices, which typically do not track missing persons cases. The second entry on the missing person's portion of the URP is "NamUs MP database", which refers to the portion of the NamUs database that includes Missing Person (MP) reports. The next entry, "OGIS search within 2 mile radius of recovery location", actually refers not to a missing persons search, but to a cross-check against other UBC cases found in similar geographies. OGIS refers to a mapping tool named "OpenGIS initiative" developed by the non-profit Humane Borders in collaboration with the PCOME. The project uses GPS locations to map all UBC deaths in southern Arizona in a publicly accessible online programme. Medico-legal investigators at the PCOME can use this tool to check for other human remains cases found in similar geographies, allowing them to connect, for example, a case of a skull missing a mandible found in 2014 to a case of a mandible found without a skull in 2011. The final entry on the list, "Colibrí consulted for database search", refers to the Colibrí Center for Human Rights, which is consulted before remains are released as unknowns.

Colibrí is one of several close partnerships the PCOME maintains with outside entities to more effectively identify the dead. Others include the Tucson Office of the Mexican Consulate, the Guatemalan consulate, the Salvadoran consulate and the Argentine Forensic Anthropology Team. Notably, the organizations with the most comprehensive data about missing persons relevant to the border have no affiliation with US law enforcement, which in other contexts in the United States is the most common resource for medical examiners searching for missing person data.

The longest and most instrumental partnership the PCOME has maintained has been with the Tucson office of the Mexican Consulate. Mexican nationals consistently make up approximately 80 per cent of all UBC cases identified at the PCOME each year since the early 2000s. Consular officials visit the PCOME weekly, and even daily in the summer months when deaths in the desert peak. The Consulate assists the PCOME by checking names found on identification media against lists of missing persons, providing identification hypotheses based on circumstantial data such as tattoos or clothing, offering national or cultural insight about the significance of certain items carried by migrants, and covering the costs associated with one-to-one comparisons of DNA between unidentified remains and relatives of missing persons. Finally, it is the role of the Consulate to assist families in the repatriation process once remains are positively identified as those of Mexican nationals.

In addition to the thorough examinations, the checklists and the collaborative partnerships with outside organizations, the PCOME has also worked to make the crisis of migrant deaths along the border publicly visible by working with and/or supporting the work of academics, community organizations and reporters. Staff at the office have also been actively involved in pressuring for the reform of policies that prevent them from utilizing federal systems for the benefit of their caseload.

5.4.2. Texas

Although there are dozens of medico-legal offices along the United States–Mexico border that investigate the deaths of migrants, the only other single county that has seen anywhere near the volume of Pima County is Brooks County, Texas. The comparison between the two entities is largely unfair. According to the US Census 2014, Brooks County has a population of 7,194 compared with Pima's 1,004,516, and a taxpayer median household income of USD 22,176 compared with USD 46,233 in Pima County. In addition, Pima County has gained more than a decade of experience in investigating the deaths of hundreds of migrants each year since 2000, and experience before this time with migrant deaths averaging about 19 in 1990–1999 (Anderson, 2008). In contrast, Brooks County experienced an influx of migrant deaths beginning in the year 2012, with 129 such fatalities that year compared with 64 the year before.⁶⁸ An additional major inequity between the two counties is the type of medico-legal death investigation system followed by law in each

⁶⁸ E-mail correspondence with members of the South Texas Human Rights Center, 27 March 2016.



El Paso, Texas and Ciudad Juarez, Chihuahua, separated by a fence along the border between the United States and Mexico. © May 2017 (Photo: K. Dearden)

state. Arizona follows a medical examiner system for cases of sudden or unexplained deaths, which means that it is required by law for such cases to be referred to a forensic pathologist. In contrast, Texas follows an antiquated Justice of the Peace System, where such cases are overseen by a complex network of judges who act as coroners. Although Justices of the Peace are required to conduct an inquest in cases of unattended deaths (among other fatality categories), they have the authority to decide if a case should be provided an autopsy by a forensic pathologist (Centers for Disease Control and Prevention, 2016). Despite these major differences between Pima County and Brooks County, the comparison between the two is illustrative of the flexible nature of forensic investigation of the dead in the United States.

When human remains are discovered in Texas, both the Sheriff's Office and the Justice of the Peace are called to the scene. Prior to 2013, remains believed to be migrants were then transferred to one of two funeral homes for further investigation (Kovic, 2013; Frey, 2015). These cases were not provided with autopsy, forensic anthropology examination or DNA sampling before burial (Collette, 2014). The Brooks County Judge's office, which oversees the network of Justices of the Peace, contracted several funeral homes to receive remains recovered from the desert, provide a cursory examination, and bury the remains in the county cemetery (Frey, 2015). Although some of these remains were identified through investigations in collaboration with the funeral homes, Brooks County Sheriff's Office or the Mexican consulate, many were buried as unknowns.

At the beginning of 2012, a coalition of activists, lawyers and university-based forensic anthropologists began pressuring Brooks County to reform their procedures for the investigation of migrant deaths (Kovic, 2013). It was discovered that remains were not being autopsied, examined by an anthropologist or sampled for DNA before burial (Frey, 2015; Collette, 2014;

Kovic, 2013). Without these steps, it is very unlikely for decomposed or skeletal remains to ever be associated with missing persons reports and positively identified. At least two relatives of missing migrants were told they would have to pay the funeral home to complete the portions of the exam that were not done initially.

One of these relatives, Marta Iraheta, the aunt of missing Salvadoran man, Elmer Esau Barahona, shared her story with Texas human rights advocates who published her story in a public policy report (Kovic, 2013). Elmer had crossed in June 2012. After injuring his leg and falling ill after drinking water from a cattle trough, he was left behind in the desert by the group. Before leaving, a fellow migrant took down phone numbers from Elmer for his family, and tied his own shirt around Elmer's injured leg. When this man made it to safety, he called Elmer's family and told them what had happened. He described his shirt, which he said would be around Elmer's leg, as a brown and white, long-sleeved plaid button-up shirt.

When Marta visited Brooks County Sheriff's Office in search of Elmer, deputies showed her photographs relating to several cases of unidentified human remains. In one set of photos, she saw a plaid brown and white shirt. When she asked where the remains for this case were, she was referred to Elizondo Mortuary. Upon contacting Elizondo, Marta was told that she would have to pay thousands of dollars to exhume the body, conduct DNA testing, store the body each day it was out of the ground, and, if it turned out not to be the body of Elmer, for the remains to be re-buried. By working with a number of advocacy organizations, Elmer's family was finally able to get answers and bury his remains. Because the remains had not been properly examined before burial, his case was part of a large-scale project overseen by university-based forensic anthropologists to exhume and examine all unidentified remains buried in Brooks County's municipal cemetery. The Colibrí Center for Human Rights and the Argentine Forensic Anthropology Team worked with Elmer's family to collect ante-mortem information and a DNA sample. It took more than a year for Elmer's remains to be positively identified, and then another year to be released to the family because of further bureaucratic delays.

In the summer of 2013, forensic anthropologist Lori Baker led a team of students from Baylor University to exhume 55 cases of human remains from the Brooks County public cemetery (Kovic, 2013; Frey, 2015). The exhumed remains were then sent to Baylor University, Texas State University at San Marcos and the University of Indianapolis for skeletal examination and DNA sampling (Kovic, 2013). A continuation of the project in the summer of 2014 produced nearly 70 more sets of unidentified human remains exhumed from the same cemetery (Frey, 2015). As of time of writing, the investigation and analysis of these cases was still ongoing. University-based forensic anthropologists, primarily Dr Kate Spradley and her team at Operation Identification out of Texas State University, continue to work closely with NGOs such as the Colibrí Center for Human Rights, the Argentine Forensic Anthropology Team and the South Texas Human Rights Center to identify the dead.

Despite the inadequacy of the procedures followed by Brooks County for the identification of human remains, an investigation by the Texas Rangers in 2014 absolved county officials from any legal wrongdoing (Frey, 2015). It should be noted, however, that failure to collect DNA samples from unidentified remains is clearly a violation of the Texas Criminal Code.⁶⁹ Whether or not Brooks County officials broke the law in this regard, they did not break the law by burying unidentified remains before autopsy and forensic anthropological examination, two aspects of a post-mortem investigation that are critical for there to be any hope of identifying decomposed remains.

The 2013 intervention resulted not only in the exhumation of cases from past years, but also prompted a shift in the way that human remains cases were investigated in Brooks County. Since the intervention, unidentified human remains discovered in Brooks County are no longer sent to private funeral homes for examination and investigation, but are now sent to the Webb

⁶⁹ Article 63.056 of the Texas Criminal Code, regarding the Collection of Samples from Unidentified Human Remains states: "(a) A physician acting on the request of a justice of the peace under Subchapter A, Chapter 49, a county coroner, a county medical examiner, or other law enforcement entity, as appropriate, shall collect samples from unidentified human remains. The justice of the peace, coroner, medical examiner, or other law enforcement entity shall submit those samples to the center for forensic DNA analysis and inclusion of the results in the DNA database." (Texas Criminal Code, 1994)

County Medical Examiner's Office, in Laredo, Texas, where autopsies, forensic anthropology examinations and DNA collection are completed. While this represents an enormous improvement in the treatment of the dead, an interesting new challenge has appeared for families of missing migrants. Although the Webb County Medical Examiner's Office does work with foreign consulates, the chief medical examiner, a forensic pathologist, does not allow her staff to work with the Colibrí Center for Human Rights or the Argentine Forensic Anthropology Team, and will only accept missing persons data from law enforcement or other governmental entities. Webb County officials are not violating any laws by refusing to collaborate with NGOs. In fact, they are following precedent established by federal entities such as the Department of Justice and the FBI to only accept missing persons reports from law enforcement. However, the lack of collaboration with the NGOs who work most closely with the relatives of missing migrants is likely preventing a large number of identifications from being made.

5.5. Non-governmental efforts to assist medical examiners and families of the missing

There are several non-governmental efforts to support families in their search for information along the United States–Mexico border. Those focused on forensic human identification, rather than search and rescue, have created an informal coalition. The Forensic Border Coalition (FBC) was established in the spring of 2013, following the high number of border deaths in 2012. The coalition is comprised of forensic scientists, scholars and human rights partner organizations working to comprehensively address the significant barriers to identifying the remains of missing migrants found on the United States–Mexico border. The mission of the FBC is to support the families of missing migrants searching for their loved ones and to work to improve problems related to handling and identifying the remains of those who die while travelling through the dangerous terrain of the southern United States border region. This ongoing humanitarian effort is a collaboration between non-governmental and governmental organizations to:

- Work collaboratively to increase the number of identifications of remains likely to correspond to migrants recovered in the United States–Mexico border region;
- Better understand the crisis of migrant deaths and disappearance along the border;
- Improve the practices and protocols for the investigation of the dead;
- Share information with the public and provide critical data that can be used in public policy decisions addressing deaths on both sides of the United States–Mexico border; and
- Provide resources that can contribute to the development of a regional and transnational forensic mechanisms for addressing missing persons and unidentified remains cases likely to correspond to migrants.

The FBC includes the following members:

- Argentine Forensic Anthropology Team;
- Colibrí Center for Human Rights;
- Texas State Forensic Anthropology Center's Operation Identification;
- Houston Migrant Rights Collective;

- South Texas Human Rights Center;
- Texas State University Department of Geography; and
- University of Houston Clear Lake Anthropology Program.

Each entity provides a unique and locally-grounded approach to the challenge of tracing missing persons and identifying unknown remains along the border. More information about each partner organization can be found at the FBC website, <https://forensicbordercoalition.org/>. The work of the Colibrí Center for Human Rights is simply one example of the work being done by nongovernmental organizations to support the right of families to have information about missing loved ones.

5.6. A family-centred approach: The Colibrí Center for Human Rights

The Colibrí Center for Human Rights was founded in 2013, building on nearly a decade of work done by the Missing Migrant Project in Arizona. Colibrí builds sanctuary around the process of searching for a missing loved one on the border by building strong relationships with both families of the missing and the forensic scientists who investigate unidentified remains. Honouring a firm commitment to families of the missing, and the belief that no family should be required to interact with law enforcement in order to obtain information about a missing loved one, Colibrí works to identify the dead without law enforcement involvement unless the family requests it. Colibrí is based in Arizona and works most closely with the PCOME, which has provided in-kind support to Colibrí in the form of office space and equipment, allowing the collaboration to be a daily part of the investigation process at this county office. Colibrí supports the investigation of migrant cases in Pima County by managing all incoming inquiries from families of missing migrants, providing detailed ante-mortem data to forensic practitioners and producing identification hypotheses that can then be further investigated by county officials.

The relationship between this governmental office and this non-governmental, non-profit organization is an innovative practice that protects both the needs of families and honours forensic best practices. Although based in Arizona, Colibrí's database contains reports of migrants missing in all four United States border states, and the Center has supported over 100 forensic identifications made in both Arizona and Texas. Colibrí collects ante-mortem data from families who believe their missing loved one disappeared on the United States side of the border. Families generally contact Colibrí in one of three ways: (a) by calling the PCOME; (b) by submitting an inquiry through Colibrí's website; or (c) by contacting Colibrí through Facebook. Colibrí's small team then takes detailed, forensically relevant missing persons reports by phone, which are then entered into Colibrí's private database and compared against records for unidentified human remains found in border regions. Colibrí's bilingual staff is trained not only to collect accurate, forensically relevant data, but also to approach families with understanding, respect and an attitude of partnership.

In 2016, Colibrí began a DNA programme to collect FRS from relatives of missing migrants who disappeared crossing the border into Arizona. The Colibrí team travels to major United States cities and spends a week in an undisclosed sanctuary church,⁷⁰ meeting with families during pre-arranged appointments to collect saliva samples. Once collected, saliva samples are shipped securely to Bode Cellmark Forensics and compared against the DNA of those unidentified human remains that have been found in Arizona over the past 20 years. The Center has agreements with the PCOME and Bode Cellmark Forensics to protect the reliability of the process and the confidentiality of the families.

Colibrí's procedure is detailed and rigorous, designed to protect the privacy and confidentiality of relatives of the missing. Before arriving in a given city, the Colibrí team first makes phone calls to all families in Colibrí's private database who either have a phone number with an area code covering that region, or who have provided a ZIP code that falls within a two-hour drive of the city. As an added layer of security, Colibrí never collects the home address of families of the missing, but rather uses ZIP codes and area codes as proxies for where the families live. After families with cases already in the Colibrí database are invited to make appointments, Colibrí then announces the city (but not the precise location) through social media and to local press, targeting especially Spanish media outlets in order to find additional families who may not already be represented in the database. The Colibrí team first makes sure that all families interested in the sampling event already have a complete missing persons report in the database. When this is complete, and when a private sanctuary space is secured, the team then calls back the families to arrange individual appointments.

Each appointment, lasting about an hour, is private, and involves one Colibrí team member and as many close blood relatives of the missing as possible. During the scheduling call, Colibrí representatives ensure that the various members of the family are comfortable sharing an appointment time, and if not, multiple relatives are invited to have separate appointment times. There is a significant amount of family conflict following the traumatic and ambiguous disappearance of a loved one, and for this reason, Colibrí team members are careful to be sensitive to unique family needs. During the appointment, before anyone's saliva is collected for a DNA sample, the Colibrí representative first goes through a rigorous consent process that involves reading aloud a detailed consent form. This is done to ensure informed consent, as well as accessibility and comprehension. The team is trained to look for signs of anxiety or confusion, and addresses any questions or hesitations the families may have. The saliva samples are then collected using buccal swab kits provided by Bode. The kits that are sent to the lab are identified only by a code. The names of the donors are stored in a private, secured database, and no one outside of Colibrí has access to the donor's name. Bode is only provided with a unique code, and no names. In addition, Bode is provided with a manifest listing the codes along with the relationship of the donors to the missing person – mother, half-brother, daughter, for example – along with any notes, such as in those cases where the family is searching for multiple missing relatives.

In addition to doing everything in its power to ensure privacy and confidentiality, Colibrí also strives to make the appointments comfortable and accessible to families of the missing. All services Colibrí provides to families are completely free. Colibrí even provides reimbursement for travel to and from the collection site in the form of USD 10 gas cards. If the family drove for two hours, they receive enough gas cards to

⁷⁰ During Colibrí's preliminary focus group research among families of the missing, when asked what locations they feel would most safe visiting for DNA appointments, the number one answer was sanctuary churches.

cover their travel. The Colibrí team also coordinates with local volunteers to provide childcare, as most families bring their children with them to the appointment. The team also makes sure that there is ample food and water available, and that the space is free of onlookers or press. Inevitably, the team receives substantial press interest each time a new city is announced on social media. The location of the sampling event is never shared with the press. Instead, Colibrí representatives meet with select journalists and reporters off-site. Families who are interested in speaking with the press are introduced after the sampling event.

Colibrí takes this work very seriously, and has given a tremendous amount of thought to the procedure. In 2016, the first year of the programme, 256 FRS were collected, all with results pending from Bode. The programme represents one model available to those agencies and organizations interested in supporting the right to information for families of missing migrants. Ideally, Colibrí would have an additional government accountability partner, other than the local PCOME. Unfortunately, in the current climate, where families are deeply afraid of the United States justice system and their own consulates, Colibrí has so far been unable to find an additional partner. After a year of waiting for several foreign consulates to sign memorandums of understanding, Colibrí went ahead with the project without them. Families suffer each day a loved one is unaccounted for. Relatives of the missing have reported serious health problems attributed to the stress of not knowing the whereabouts of their loved one, including diabetes, heart disease and hypertension. Colibrí sees this work as urgent relief work that must be undertaken with due diligence and the honouring scientific best practices, but that cannot wait for governments to do the right thing.

In addition to taking missing persons reports and managing forensic comparisons through its database, Colibrí also works with families of the missing and dead to advocate for the reform of unjust policies. Along with families who live in the United States, Colibrí is building a family advocacy network to push for better treatment of migrants in the United States.

5.7. Conclusion and recommendations

In conclusion, just as migrants, immigrants and refugees face various barriers to free movement in the world today, so do their remains in the event of death on the border. The identification of unknown remains found along the United States–Mexico border is deeply challenged by the fear, racism, poverty and marginalization experienced by families of missing migrants. A number of local initiatives have emerged to better care for the dead and support the families of the missing. Although these initiatives include both governmental and non-governmental entities, some government agencies have had to be pressured by human rights advocates to reform their protocols so that the dead might be identified. There is no legal imperative for a medico-legal office in the United States to do everything in its power to attempt to identify unknown human remains. It is critical that non-governmental and intergovernmental efforts are supported and respected, especially in the current political climate of the United States, where immigrants are being targeted for deportation.

Despite these challenges, there are many positive and innovative solutions existing both at the local level and at the federal level. Communities along the United States–Mexico border have responded, and individual scholars, human rights advocates, forensic anthropologists, medical examiners and sheriffs have largely acted with creativity and compassion to an unexpected crisis.

There is substantial need for these various solutions and innovations to be shared regionally and internationally so that migrants and their families have access to the truth and justice they are owed.

Text Box 3. Identification efforts in Arizona

by Reyna Araibi⁷¹

The Colibrí Center for Human Rights partners with families in their search for loved ones who disappeared while crossing. This work is a balance between service and advocacy. Colibrí focuses on collecting missing persons reports, collaborating with forensic scientists trying to identify the dead, and addressing the immediate humanitarian needs created by deadly policies on the border. Colibrí also bears witness to the human suffering in this context and to the stories of the families. Our work would be incomplete without holding space for their testimonies, lifting up family voices and honouring those unique and irreplaceable lives that have been lost on the border.

Historias y Recuerdos is a voluntary story-sharing project that offers families the opportunity to reflect, remember and share thoughts about a lost loved one, in a space dedicated to listening, honouring and recording these remembrances for future preservation and sharing.

On the United States–Mexico border, thousands have lost their lives, thousands are still missing, and families are caught in the excruciating space in between. Story sharing holds power for healing on a family level, but these stories are also fundamental for shifting the narrative around immigration that too often focuses on numbers and abstractions. Family stories have the power to refocus that narrative on individual human beings, on the nuances of individuality that are evident in every single missing persons report. Bearing witness to the families' stories is a beautiful and powerful way to begin to understand the human cost of the border, while also calling on communities to honour the lives that have been lost in this terrain with an act of collective recognition and remembrance.



Mirna Leticia Banegas Flores, whose son went missing crossing the United States–Mexico border in 2014. She asked us to share the following story so people would know the person that her son is and in the hopes that this may help her be reunited with him one day soon.⁷²

Source: Reyna Araibi/Colibrí Center for Human Rights, 2017.

⁷¹ Reyna Araibi is the Communications Manager and the Historias y Recuerdos Project Manager at the Colibrí Center for Human Rights.

⁷² This interview was conducted and translated by Reyna Araibi.

“My son’s name is Bairon Fabrizzio Banegas Flores. Bairon is⁷³ a young man with light skin. He is not too tall, “chubby” but not fat. He has been a good son and other than that, well, he came from Honduras when he was 14 years old and decided to study the Bible here, and he became a pastor. The good memories I have of him have been as a good son, a good father and a good husband – a lover of life and of God. He was a very enthusiastic young man. He was never bitter, not even when he was a boy. He always looked happy, and he looked at life with optimism.

One day, I came to the United States from Honduras, and I visited him. He sat down in the living room with his daughters and his wife and said to me, “Mami, I want you to tell me something about your past and your life in school.” So I began to share with him and make silly faces and gestures, and I didn’t know he was recording me. And then later, he got up and set up the TV, and there he had the video of me when he was recording me with his gadgets. That was very valuable for me, you know? The most beautiful memory he left me.

It had already been two times that my son had come to the United States, always through the border. He came at 14, and then at 19, he again crossed the border because at 19 was when he was deported for the first time. He was still in the church; he was studying in the church, and so he was deported and then he returned. He got married to the woman that is now his wife, and his daughters were born here. Then, in 2013 was his second deportation. To this day, thank God, we haven’t heard anything about him, and I ask God that wherever my son is, that he takes care of him. If he’s in a jail or if he’s dead, I ask that God returns his body to me so that I can be at peace. But that was what happened. He was deported in November 2013 and, unfortunately, he chose the worst border to cross through, which is the one at Altar, Sonora. But, well, only God knows.

At the beginning, I lost a lot of weight and I didn’t have a reason to live. He’s always missing, something is always missing, and every time there’s a party – his birthday, my birthday, Mother’s Day, Christmas – it always hurts. It’s horrible because you don’t know if the missing person is alive or if they’re dead and there are so many ideas, so many thoughts that come to your mind, and it’s just not the same to have a person where they tell you that this person is alive or we’ve found their remains or something happened to them, but not knowing anything, not even where they are or who they’re with, it’s hard; it’s hard.

For my son Bairon, the hope I have is that if God took him from me, that one day we will see each other again in heaven. I have that hope, and it never dies; it never dies, and I don’t get tired of having hopes of finding my son, alive or dead.

I just want to say to my son Bairon that we miss him a lot, that his loss has been very sad for us, not to have him with us, and more than anyone his daughters – my granddaughters – need him because they are in the process of growing up and he was a very loving father and they miss him a lot. So there is still a hope, a hope of faith, that we will be able to find him. And we love him, and we will always be waiting for him at home.”

⁷³ Mirna Leticia Banegas Flores moves between present and past tense in speaking about her son.

Text Box 4. Search and rescue efforts in Southern Texas

by *Eduardo Canales*⁷⁴

The South Texas Human Rights Center (STHRC) was founded in May 2013 to address the practices and protocols of public officials dealing with undocumented border crossers who have disappeared and with the cases of those who have perished. The STHRC views the entire scope of the issues surrounding migrant deaths as its programme. This includes:

- Organizing community initiatives to prevent migrant deaths, such as providing water stations to migrants;
- Providing immediate attention to families to determine if their migrant relatives are in detention or need immediate search and rescue;
- Assisting in efforts during search and recovery operations; and
- Locating the unidentified and identification efforts as a member of the Forensic Border Coalition.

The STHRC works to increase its capacity to assist migrant families residing both in their perspective home country and in the United States.

The STHRC discovered that Brooks County officials were burying unidentified bodies without submitting DNA of each recovered body or skeletal remains, as mandated by Texas law. The STHRC organized and pushed for change to that practice, and in August 2013, it successfully organized community collaboration to ensure the transfer of recovered migrant bodies and skeletal remains to the Webb County Medical Examiners Laboratory and the submission of DNA samples from unidentified bodies and remains to the University of North Texas National Human Identification Center in compliance with state law.

The STHRC approached the Brooks County Sheriff Office (BCSO) in its initial search and rescue efforts. While the BCSO lacks the staffing and resources to dedicate to search and rescue, it is informed by the political will and social concern to help save lives and prevent migrant deaths. The BCSO became STHRC's strongest ally in Brooks County and South Texas, which has led to an organic relationship supported by a memorandum of understanding between the two parties. The STHRC is a recognized non-governmental organization (NGO) in partnership with BCSO, which refers all cases of missing migrants to the STHRC. Under the auspices of the BCSO, the STHRC collects Missing Persons Reports and has full access to the National Missing and Unidentified System (NamUS) as case managers and is allowed to publish missing persons cases. The STHRC takes Family Reference Samples from relatives of missing undocumented border crossers who show up in Falfurrias, Texas.

The STHRC and the BCSO, together with the Harris County Forensic Institute, do media and community outreach to the immigrant communities for solicitations of missing persons reports and submission of family DNA reference samples for migrant relatives that went missing in South Texas. This has produced 12 identifications of a total of 36 migrant families missing migrants reports. The STHRC is planning independent missing migrants days with consulates and community groups. The BCSO dispatch receives all 911 distress calls from migrants, which are referred to the United States Border Patrol (USBP) for rescue and recovery. The STHRC is working to better monitor this process and ensure that the issue of 911 outdated technology is upgraded and addressed by state and county officials.

The STHRC's efforts originate with simple requests from families wondering about their missing loved ones. Previously, there was a problem with initial calls to the USBP and the Consulates of Mexico, El Salvador, Guatemala and Honduras as families in search of missing migrants were either given brief, unsatisfactory answers or no answers at all. The STHRC takes a more investigative approach in order to get relevant data from families of their missing loved one in order to try and conduct rescues or recoveries. The STHRC has therefore established search and rescue and search and recovery protocols with the USBP, as rescue attempts cannot be conducted by a civilian rescue team because all of South Texas land is owned privately and access is difficult. Rescue and recovery efforts cannot be attempted by local law enforcement sheriffs and/or NGO search and rescue teams because of lack of resources and primarily because all of the South Texas migration corridor is private ranch land.

The Border Patrol has more resources and more access to the private brush terrain. The STHRC has established protocols with the USBP to expedite a response for families, which depends on the immediacy and detail of the information provided in a family's request. The STHRC has found that the use of smartphone applications has worked for many rescues in pinpointing global positioning system coordinates. Where such information is not available, the key to the investigation is involving the families to pressure the coyotes or guides as to where they left a human being behind and in what physical condition, as determining where the migrant's entry point was into the desert brush terrain is difficult. While personal items and clothing determine recovery to some extent, positive identification of an unidentified person is ultimately determined by fingerprints, dental records and/or DNA of a parent, sibling or offspring.

Search also includes finding where the unidentified has been buried or where disposition occurred. The STHRC is a partner of the Forensic Border Coalition (FBC), which includes the Cemetery Mapping Project, the Forensic Anthropology Center at Texas State (FACTS) and the Argentine Anthropology Forensic Team (EEAF). We are researching and mapping county records, funeral services and cemeteries to determine the number of burials of unidentified migrants in 18 border counties. The FBC has completed a mapping of seven counties to date, and an initial report will soon be released.

References

Anderson, B.E.

- 2008 Identifying the dead: Methods utilized by the Pima County (Arizona) Office of the Medical Examiner for undocumented border crossers: 2001–2006. *Journal of Forensic Sciences*, 53(1):8–15.

Anderson, B.E. and B.O. Parks

- 2008 Symposium on border crossing deaths: Introduction. *Journal of Forensic Sciences*, 53(1): 6–7.

Andreas, P.

- 2009 *Border Games: Policing the U.S.-Mexico divide*. Cornell University Press, Ithaca and London.

- Ball, M.
2016 Donald Trump and the politics of fear. *The Atlantic*, 2 September. Available from www.theatlantic.com/politics/archive/2016/09/donald-trump-and-the-politics-of-fear/498116/
- Clark, M.L.
2005 Keep your hands off my (dead) body: A critique of the ways in which the state disrupts the personhood interests of the deceased and his or her kin in disposing of the dead and assigning identity in death. *Rutgers Law Review*, 58:45–120.
- Castillo, A.
2017 Immigrant arrested by ICE after dropping daughter off at school, sending shockwaves through neighborhood. *Los Angeles Times*, 3 March. Available from www.latimes.com/local/lanow/la-me-immigration-school-20170303-story.html
- Centers for Disease Control and Prevention
2016 Public Health Law Program, Coroner/Medical Examiner Laws, Texas. Available from www.cdc.gov/phlp/publications/coroner/texas.html (last accessed 15 April 2016).
- Collette, M.
2014 South Texas lawmaker: Immigrants' mass graves are a crime. *Corpus Christi Caller Times*, 22 June.
- Cornelius, W.A.
2001 Death at the border: Efficacy and unintended consequences of US Immigration Control policy. *Population and Development Review*, 27(4):661–685.
- Duara, N.
2016 In Arizona, Border Patrol doesn't include dozens of deaths in tally of migrants who perish. *Los Angeles Times*, 15 December. Available from www.latimes.com/nation/la-na-border-patrol-count-20161128-story.html
- Ewing, W.
2015 "Enemy territory": Immigration enforcement in the US-Mexico Borderlands - CIAO. *Journal on Migration and Human Security*, 2(3), 198–222.
- Frey, J.C.
2015 Graves of shame: New evidence indicates wrongdoing in the handling of migrant remains in Brooks County. *Texas Observer*, 6 July.
- Gomez, A.
2017 Immigration arrests up 38% nationwide under Trump. *USA Today*, 17 May. Available from www.usatoday.com/story/news/world/2017/05/17/deportations-under-president-trump-undocumented-immigrants/101786264/
- Gomez, A. and D. Agren
2017 First protected DREAMer is deported under Trump. *USA Today*, 18 April. Available from www.usatoday.com/story/news/world/2017/04/18/first-protected-dreamer-deported-under-trump/100583274/
- Hughes, C.E. et al.
2017 Temporal patterns of Mexican migrant genetic ancestry: Implications for identification. *American Anthropologist*, 119(2): 193–208. DOI:10.1111/aman.12845

- Jentzen, J. M.
2009 *Death Investigation in America: Coroners, Medical Examiners, and the Pursuit of Medical Certainty*. First edition. Harvard University Press, Cambridge, Massachusetts.
- Kopan, T.
2016 What Donald Trump has said about Mexico and vice versa. *CNN*, 31 August. Available from www.cnn.com/2016/08/31/politics/donald-trump-mexico-statements/index.html
- Kovic, C.
2013 *Searching for the Living, the Dead, and the New Disappeared on the Migrant Trail in Texas: Preliminary Report on Migrant Deaths in South Texas*. In collaboration with the Prevention of Migrant Deaths Working Group of Houston United. Available from www.texascivilrightsproject.org/en/wp-content/uploads/2016/06/Report-on-Migrant-Deaths-in-South-Texas.pdf
- La Opinión
2015 Acusan de corrupción a vicecónsul de Guatemala. Guatemala, 11 April.
- Martinez, D.E. et al.
2014 Structural violence and migrant deaths in Southern Arizona: Data from the Pima County Office of the Medical Examiner, 1990-2013. *Journal on Migration and Human Security*, 2(4):257–286.
- Martinez, E.
2017 Program to identify dead and missing across US put on hold. *revealnews.org.*, 1 April. Available from www.revealnews.org/article/program-to-identify-dead-and-missing-across-us-put-on-hold/
- Mettler, K.
2017 ‘This is really unprecedented’: ICE detains woman seeking domestic abuse protection at Texas courthouse. *The Washington Post*, 16 February. Available from www.washingtonpost.com/news/morning-mix/wp/2017/02/16/this-is-really-unprecedented-ice-detains-woman-seeking-domestic-abuse-protection-at-texas-courthouse/?utm_term=.00e17957545e
- Murphy, E.
2017 Sessions is wrong to take science out of forensic science. Op Ed, *New York Times*, 11 April. Available from www.nytimes.com/2017/04/11/opinion/sessions-is-wrong-to-take-science-out-of-forensic-science.html
- Reineke, R.
2016 *Naming the Dead: Identification and Ambiguity Along the U.S.-Mexico Border*. The University of Arizona, ProQuest Dissertations Publishing. Available from <https://search.proquest.com/openview/be2d3b0168f641a6b0c06776f0c68407/1?pq-origsite=gscholar&cbl=18750&diss=y>
- Texas Criminal Code
1994 The Penal Code. Available from www.statutes.legis.state.tx.us/Docs/SDocs/PENALCODE.pdf
- Timmermans, S.
2006 *Postmortem: How Medical Examiners Explain Suspicious Deaths*. University of Chicago Press, Chicago.

Chapter 6

The border project: Towards a regional forensic mechanism for the identification of missing migrants

US Customs and Border Patrol

2016 CBP advances efforts to rescue migrants in 2015. Press release, 27 January. Available from www.cbp.gov/newsroom/local-media-release/cbp-advances-efforts-rescue-migrants-2015

US Border Patrol

1994 *Border Patrol Strategic Plan 1994 and Beyond: National Strategy*. Washington, D.C. July 1994.

2016 U.S. Border Patrol Fiscal Year Southwest Border Sector Deaths (FY 1998 - FY 2016). July 4, 2017.

United States Government Accountability Office

2006 *Report to the Honorable Bill Frist, Majority Leader, U.S. Senate. Border-Crossing Deaths Have Doubled Since 1995; Border Patrol's Efforts to Prevent Deaths Have Not Been Fully Evaluated*. August 2006. GAO-06-770. Available from www.gao.gov/new.items/d06770.pdf

10 November 2016. Wooden crosses, in memory of migrants who died crossing to the United States, lean on the border fence between Mexico and the United States in Nogales, Mexico.
© David Alire Garcia/Reuters





Chapter 6

The Border Project: Towards a regional forensic mechanism for the identification of missing migrants

Mercedes Doretti, Carmen Osorno Solís and Rachel Daniell⁷⁵

6.1. Introduction

Every year, thousands of migrants die on their journey crossing deserts, seas or violent and dangerous territories in different geographical corridors across the globe. The identification of their remains, returning them to their families, and, in some cases, collecting information to provide evidence for court processes is extremely challenging. This chapter describes the work of the Border Project, an initiative coordinated by the Argentine Forensic Anthropology Team (EAAF), which aims to create a regional mechanism to exchange forensic information on missing migrants and unidentified remains in the Central America–Mexico–United States of America migrant corridor. Further, this chapter will highlight how two innovative strategies of the Border Project – (a) creating mechanisms such as Forensic Databanks on Missing Migrants in migrant countries or communities of origin and establishing agreements to cross information on a transnational, regional level; and (b) the inclusion of both governmental and non-governmental entities in these structures supporting collection and exchange of data – are key to addressing missing migrant issues. The Border Project’s ultimate goal is to significantly improve service to families of missing migrants along this corridor regarding their right to truth and justice.

The EAAF is a non-governmental, not-for-profit scientific organization, dedicated to the application of forensic sciences to the investigation of human rights violations and humanitarian problems. EAAF was founded in Argentina in 1984 when democracy returned to the country after eight years of military government that resulted in the enforced disappearance of thousands of people,⁷⁶ within a context of massive human rights violations. The EAAF started its work to help in the search, identification and determination of cause of death of the people who disappeared, trying to provide an answer to thousands of families, as well as collecting and analysing evidence for court processes. Since then, EAAF has worked in more than 45 countries in Latin America, Africa, Asia and Europe at the request of local and international courts, international tribunals and special commissions of inquiry, organizations of victims’ families and human rights organizations. EAAF’s members work as expert witnesses and technical consultants for all of the above actors and institutions.

EAAF’s work on missing migrant cases in the Central America–Mexico–United States migrant corridor grew out of this work. Typically, EAAF works on human rights violation cases produced as a result of internal and international conflicts, civil wars, dictatorships and episodes of severe violence and repression. In 2004, at the request of Mexican non-governmental organizations (NGOs) and institutions, EAAF started to investigate femicide cases in Mexico’s northern state

⁷⁵ Mercedes Doretti is a Forensic Anthropologist who investigates human rights violations, collects evidence and presents critical findings to tribunals, human rights organizations and special commissions in dozens of countries. A founding member of the Argentine Forensic Anthropology Team (EAAF), she continues to serve as an EAAF Senior Investigator and the coordinator of the organization’s New York City Office and Mexico-based projects, and as Director of the Border Project. Carmen Osorno Solís is a Consultant Researcher at EAAF and has been working on the Border Project since 2010. Rachel Daniell is a Consultant Researcher at EAAF and has been working with EAAF’s New York Office since 2012. She is also a doctoral candidate in anthropology at the CUNY Graduate Center and co-editor of *Silence, Screen, and Spectacle: Rethinking Social Memory in the Age of Information and a special issue of Memory Studies*, “Memory | Materiality | Sensuality”.

⁷⁶ Lists of cases with names document close to 10,000 disappearances occurring between 1976 and 1983. Local human rights organizations put the number at 30,000.

of Chihuahua. Most of the work was conducted at Ciudad Juarez, a border city across from the United States, where large numbers of *maquilas* or assembly plants attract workers from all over Mexico and, to a lesser extent, from Central America. It is an area particularly affected by drug trafficking and organized crime activities, reportedly infiltrated at different levels by State institutions, resulting in lack of accountability and impunity. While trying to identify 83 female human remains belonging to victims of femicide,⁷⁷ despite collecting information on missing women from all over Chihuahua state and neighbouring states, interviewing dozens of families, checking lists of missing women from prosecutors' offices, police, NGOs, newspapers and academics, among other sources, for several years, approximately half of these remains continued to be unidentified. This led to the conclusion that it was highly probable these remains belonged to migrants: women who migrated from other states of Mexico and Central America and whose families may have placed a missing person's report in their country or State of origin that did not reach Chihuahua.

It was thought initially that the problem could be solved by requesting lists of missing women from the Mexican states whose populations migrate most frequently to Chihuahua and by contacting their families to obtain further information and genetic reference samples for comparison. However, the response to these requests was discouraging. Some states did not answer; others had out-of-date lists with thousands of missing people impossible to update in a concise period of time; none had an up-to-date list of missing persons at the State level. The mechanism to exchange information between prosecutors' offices from different states was not working properly. In addition, there was no national Mexican database of missing person cases. Through the challenges we faced in obtaining missing person case information to put into the comparison process with unidentified remains discovered in Chihuahua, we began to see some of the difficulties faced in investigations of missing migrant cases.

At the same time, the investigation process revealed that there were 42 missing young women from families in Chihuahua that did not match any of the unidentified remains under examination. Among several investigation lines, EAAF reached out to United States border-area morgues, considering the possibility that these persons could have died crossing the border, leading to further examination of this issue. Forensic experts from the Pima County Office of the Medical Examiner (PCOME) based in Tucson, Arizona organized a symposium in 2004 on death at the United States–Mexico Border at the American Academy of Forensic Sciences, a meeting that was later published in the *Journal of Forensic Sciences* (Anderson and Parks, 2008). The symposium's papers were a combination of excellent data on the impact of harsher United States border policy since the early 1990s, correlated with significant increase in migrant deaths, and the call from forensic scientists to their peers for awareness of a paradoxically quiet but enormous humanitarian border crisis. The possibility not only of migration but more likely forced trafficking of these women into the United States was an option to investigate. After five years of working on femicide cases, we determined that if we wanted to solve these and other cases in the region, it was necessary to start working on generating better understandings of migration patterns and working from a regional perspective.

6.1.1. Assessment phase

Since it was the first time EAAF had been working on migration issues, a six-month assessment was conducted, travelling through the region to better understand the problems at stake and how forensic science could enlarge or improve its work on the missing migrant problem and EAAF could, eventually, help in that regard.

We visited migrants' shelters along the migrant routes, morgues, and NGOs working on migration; we met with academics, forensic personnel, families of missing people and religious organizations providing services to migrants on both sides of the United States–Mexico border

⁷⁷ A total of 83 was the minimum number of remains determined to exist based on remains/remains fragments found.

and the Mexico–Guatemala border. We also travelled throughout Central America and visited committees of relatives of missing migrants in Honduras and El Salvador, as well as government officials working in foreign affairs.

Among the main conclusions of this assessment process were:

- (a) Overall fragmentation of information.
 - Problems with case data collection, case tracking and exchange of forensic information on missing migrants and unidentified remains.
- (b) Multiplicity of databases/database content and completeness issues.
 - In multiple Central American countries, as well as in Mexico: a lack of national databases of missing migrants; a multiplicity of governmental and non-governmental databases, sometimes on missing people in general and sometimes on missing migrants, that generally did not communicate data to a centralized system.
 - In the United States, federal databases for tracking missing person’s cases exist (NamUs and CODIS), but there are significant barriers to missing migrant data inclusion/family participation that make it difficult or impossible to add ante-mortem data and reference DNA samples from families into NamUs and CODIS.⁷⁸ Furthermore, not all unidentified remains data were uploaded into these two systems.
 - In general: a lack of or insufficient ante-mortem data.
- (c) Lack of regional mechanisms to exchange forensic information on missing migrants with unidentified remains.
 - DNA comparisons only on a case-by-case basis, as opposed to massive or large-scale data crossing.
 - For unidentified remains, morgues even within the same side of the border were not exchanging information as a routine practice (Although there was some data sharing for the morgues in the United States participating in national CODIS and NamUs systems).
 - For missing persons case data, the fragmentation mentioned above hampered more than ad hoc data sharing.
 - No formal/ongoing mechanism of transnational information exchange in place.
- (d) Lack of clear statistics.
 - Sound statistics are lacking on the minimum number of missing migrants regionally and nationally as well as on unidentified remains that could belong to missing migrants in key morgues and cemeteries on the migrant corridor. It should be noted that the PCOME separates “undocumented border crossers” or UBC from other morgue cases; this distinction, even if it may include or exclude a few cases, provides a major step towards reaching statistics on this matter, but this model is not yet utilized in other relevant regions.
- (e) Issues in forensic services.
 - Disparity in access to forensic services along the migrant route, particularly in the United States border area. This is especially critical in Texas where there are variations by county in authorities handling identifications (i.e., Medical Examiner vs. Justice of the Peace) and also in large parts of Mexico.

⁷⁸ These barriers are discussed further below and also in chapter 5.

- Disparity in the identification standards used by forensic services along the migrant route: scientific evidence (e.g. using DNA, fingerprints, dental records) vs. contextual evidence (e.g. IDs found on or near remains).
- (f) Lack of proper burial and registration of unidentified remains in local cemeteries. At the time of assessment, we found:
- Cremations taking place in Arizona of non-identified remains (although, before cremation, DNA samples were taken and full forensic examination conducted);
 - South Texas counties' fragmentation in tracking of remains and burial sites; and
 - Mexico's lack of a national registry of unidentified remains and related clandestine and official burial records.

Text Box 5. International Committee of the Red Cross operations in Mexico

by Olivier Dubois⁷⁹

In 2014, the International Committee of the Red Cross (ICRC) published an evaluation of the necessities of families of the missing,⁸⁰ which was conducted with migrants' families in Central America whose lives had been particularly affected by disappearance of a family member. These families are key actors both in preventing migrant disappearances and in search and identification processes. In the study, many families reported being faced with economic consequences linked to disappearances, such as the costs of the search process or the inability to honour the debts of the missing person.⁸¹ Many have experienced stigmatization and social isolation in their communities, which can cause psychological and psychosocial harm. The study indicated that the main need of the families of missing migrants, especially if they have not received conclusive information, is for them to know the fate of their relatives. Though some were able to find solidarity and support from families who have similarly had relatives go missing, the study indicates that forensic-led programmes, which can provide different lines of investigation to families, should be connected to the efforts to locate people.

Following this study, the ICRC has worked with other actors to offer support to families of missing migrants. In Honduras, it has trained a network of voluntary psychologists to work with family associations, and it coordinates a discussion forum that brings together uniting State institutions and civil society groups to improve search mechanisms, notably through the adoption of a unified missing persons' reports. In Guatemala, ICRC has worked with the non-governmental organization *Equipo de Estudios Comunitarios y Acción Psicosocial* to establish family groups and psychosocial support in indigenous languages. Regionally, it has supported civil society initiatives aiming to operationalize the recent mechanism put in place by the Mexican Federal Prosecutor's Office. This *Mecanismo de Apoyo Exterior* was put in place as the central entry point for reporting the disappearances of migrants and for launching related criminal investigations, and for facilitating families' access to victims' programmes in the country.

⁷⁹ Olivier Dubois is the Deputy Head of the Central Tracing Agency and Protection Division of the ICRC, which provides range of tracing services worldwide that enables detainees and civilians affected by migration, conflict, disaster and other situations to restore contact with members of their families.

⁸⁰ Available from www.icrc.org/es/download/file/4601/evaluacion_missing_2014.pdf

⁸¹ For El Salvador, see COFAMIDE, *Investigación de condiciones socio-económicas de familiares de personas migrantes fallecidas y desaparecidas en ruta a Estados Unidos* (San Salvador, 2017).

The experience gained through the Red Cross Societies' operations in Central America indicates that only a minority of migrants decide with their families how frequently they should be in contact. Even fewer agree on what to do in case they lose contact, or who their families should contact in these situations. Similarly, very few migrants leave identifying information – such as a copy of their identification documents or recent photographs – with their families. For migrants in transit, the ICRC and the Red Cross societies distribute leaflets,⁸² which contain practical information underlining the importance of maintaining contact with family and informing them of their location and next destination. Additionally, in migrant shelters and Red Cross health posts, Red Cross Societies and their partners provide migrants with free phone calls to their families. Between January and May 2017, the ICRC registered 27,473 free phone calls from 56 contact points in Mexico and Central America. Six of these points also have free Internet access. In 2016, the American Red Cross offered about 10,000 phone calls to migrants at different stages of the migratory process through the same region. Maintaining family contact can offer a place to start a search in the unfortunate event that a person goes missing.

In some shelters in Mexico's northern and southern border regions, the ICRC and Mexican Red Cross provide basic medical assistance, along with infrastructure improvements, which aim to prevent harm and death to migrants as they travel irregularly through Central America. Analysis is currently being undertaken to ascertain whether or not more targeted and/or assertive prevention campaigns should be launched in communities of origin or in communities of destination to raise awareness on the risks of disappearance and how to facilitate search, rescue, localization and the identification of missing relatives.

6.2. The Border Project

6.2.1. The Border Project model

In 2010, EAAF launched the Border Project, a programme that aims to create a regional mechanism for exchanging forensic information on missing persons and unidentified remains to significantly improve both the identification of missing migrants among unidentified remains in the region and the response of governments to families searching for missing migrant relatives. This project addresses the following: (a) lack of a regional, coordinated forensic system to exchange information on a massive scale concerning these cases; (b) need to improve the quality and number of identifications; (c) growing number of deaths in the region, especially among migrants; and (d) insufficient governmental response across the region to investigate or identify remains that could correspond to missing migrants and provide an answer to Mexican and Central American families searching for missing migrants.

The project is based on the right of families for access to truth about the ultimate fates of their loved ones, as well as in some cases justice when wrongdoing has taken place. To this end, EAAF has been pursuing two parallel programmes: (a) the creation of Forensic Databanks on Missing Migrants in countries and communities of origin operating according to best practices in order to improve in quantity and quality the collection of background and physical (or ante-mortem) data on missing migrants from their families; and (b) a strategic agreement programme to exchange and compare this information against unidentified remains data.

⁸² Available from www.icrc.org/es/document/mexico-y-america-central-mensajes-de-auto-cuidado-para-personas-migrantes

6.2.2. Forensic databanks and best practices in missing migrant case collection and case management

Best practice: Establishing Forensic Databanks on Missing Migrants

The need to significantly improve the quality and quantity of forensic information, as well as background information on each missing person case became clear during the assessment. Even in cases where remains were found in a jurisdiction with good forensic services,⁸³ whether in the United States or in Mexico, the ante-mortem information – that is, the physical information from when the missing person was alive, such as sex, age at disappearance, height, odontological features, old fractures, and so forth – and background information on his or her disappearance was often very limited and in general did not include genetic information from relatives. Partnering this insufficient ante-mortem data with the lack of national databases of missing migrants made identification of remains in many cases very difficult and only possible through an extensive process of one-to-one comparison, comparing information from a given set of remains and a given family's case; results were often only obtainable based on a very particular physical feature or identity cards or other items found with the remains that could potentially guide probable identity hypotheses. However, many remains do not have any of the above-mentioned information or circumstances and, thus, can almost exclusively be identified solely via a mass-scale comparison strategy.

As a solution to this, the Border Project started co-founding governmental and non-governmental Forensic Databanks on Missing Migrants in migrant communities of origin, an unprecedented development allowing direct participation from the NGO sector, particularly committees of relatives of missing migrants, to help gather data and family contacts in monitoring and informing the work of government officials searching for their loved ones. While partners for each forensic databank vary, typically they are composed of the local Ministry of Foreign Affairs, Prosecutor's Offices, associations of families of missing migrants, NGOs working on migrant issues, and EAAF in a temporary role until the local medical legal institutes or other local forensics organizations become involved in the effort. So far, databanks have been created in El Salvador (2010), Honduras (2011), the Mexican southern states of Chiapas (2012) and Oaxaca (2016) and a short-term mechanism in Guatemala (2012). Select cases have been included from Costa Rica, Nicaragua, Ecuador, Peru, Brazil and several Mexican states outside of Chiapas and Oaxaca.⁸⁴

The forensic databanks contain case files with all available information on the missing migrants, including case data and genetic data from relatives. Another innovative approach of the databanks is introducing the collection and processing of genetic data from the beginning of the intake process adding a strong forensic component for identification purposes. Up to the writing of this paper, these databanks include 1,082 cases of missing migrants, as well as 2,920 blood samples from their relatives. This case information is compared with unidentified remains that may correspond to missing migrants.

The forensic databanks involve different modalities in their configuration, depending largely on whether the bank is based in a country or State that relates primarily to an expelling population, or whether it is both an expulsion and a transit state or country of the migrant route. In Chiapas and Oaxaca, the databanks not only focus on missing Chiapanecos and Oaxaqueñan migrants but also Central American migrants missing in Chiapas and Oaxaca. As a result, these also include in

⁸³ Further details on these issues were presented via poster presentation by M. Doretti, K. Spradley, R. Reineke, and B. Anderson at the American Academy of Forensic Science Meeting in 2016.

⁸⁴ Co-partners for the forensic databanks are: (a) El Salvador: Ministry of Foreign Affairs, Human Rights Prosecutor's Office, the Committee of Families of Missing and Dead Migrants and EAAF. The Salvadoran Medical Legal Institute is already collaborating with the Bank. (b) Honduras: Ministry of Foreign Affairs and International Cooperation, Secretary of Human Rights, Justice, Governance and Decentralization, National Immigration Forum from Honduras and Committee of Families of Missing Migrants from El Progreso. (c) Chiapas: State Human Rights Council, Voces Mesoamericanas - Action with Migrant Communities and EAAF. (d) Oaxaca: State Prosecutors Office, Oaxacan Institute for Migrant Assistance and EAAF. (e) Guatemala: the initial pre-bank was formed by the Human Rights Prosecutor's Office, the National Forum for Migration, the Mexican NGO Foundation for Justice and the Rule of Law (Fundación para la Justicia y el Estado Democrático de Derecho) and EAAF, with the collaboration of the Ministry of Foreign Affairs.

their agreement the possibility of conducting the exhumation and genetic testing of unidentified remains in public cemeteries, which are then compared against cases from the Central American databanks.

In addition, having the structure of these forensic databanks in place facilitates data exchange and comparison with unidentified remains more broadly. Some data exchange mechanisms that the Border Project is part of relate to specific events, such as the Forensic Commission, which focuses on three massacres occurring in the north-east of Mexico in 2010, 2011 and 2012 involving 316 individuals, many of whom were migrants. Other mechanisms have been set up to address all missing individuals – migrants and non-migrants – of a particular Mexican state, such as the Mexican state of Coahuila. All these mechanisms have in common the best practice guideline of having governmental and non-governmental organizations working together.

When designing forensic databanks and case data exchange mechanisms, it is always clear why government institutions need to be involved, but it is not always obvious why it is critically important to have the involvement of civil society organizations and associations of relatives of missing people in the process as well. The involvement of committees of relatives of missing migrants provides trust in the process. They work as a link to other families and communities, and their presence brings the voice of relatives undergoing the very specific, complex and painful situation of having a loved one missing outside their country to these mechanisms. In most cases in this region, relatives of missing migrants cannot go to the country or region where their loved one went missing due to economic constraints, enormous difficulties or complete impossibility in obtaining a visa, and/or severe violence or geographically extreme conditions of the relevant areas. And yet families tend to be extremely resourceful in their activism and guided by the strong need to end the uncertainty of what happened to their missing relative. It is always important to have families of the missing involved to help guide the process and contribute their concerns and opinions; they are largely why we do this work. Civil society organization partners in the databanks typically provide legal and psychosocial support to families. They are also very important as participants in the formulation of the legal agreements and monitoring these agreements. It is critical also to realize that in this corridor, migrant routes often overlap with drug trafficking routes and that the kidnapping of migrants for ransom by organized crime, particularly in Mexico, has become one of the additional regional businesses of macro criminality. Local State institutions have been charged or accused of different levels of collusion, complicity by act or by omission, with organized crime activities. In this context, it is particularly important to include parties beyond State institutions in forensic databank and data exchange agreement mechanisms.

Best practice: Standardizing data collection forms for the migrant corridor

At the beginning of the Border Project, different NGOs and official institutions had already been collecting information regarding missing migrants for some time. However, these efforts generally included only information on when and where the person disappeared and basic physical information.⁸⁵ The lack of centralization and the variety of formats to collect the information resulted in disparity in ante-mortem information available. With the creation of the Forensic databanks and standardization of the banks' Ante-mortem and Disappearance Form, as well as by having trained personnel to collect the information from large groups of family members, we were able to guarantee better quality and quantity of the information needed to compare with unidentified remains along the migrant corridor. Also, by simply adapting the same form to each forensic databank, with small differences regarding the migratory route and names used to describe clothing according to each country, we were able to centralize information in the Border Project database, which mirrors the information found in the forms. The Border Project is in the process of finalizing the delivery of the database containing all ante-mortem and background

⁸⁵ An exception to this, again, was the work being carried out by the PCOME. See earlier references to PCOME practices in this chapter.

data for each migrant to each forensic databank. Each databank has its own database content, but their structures are identical, so that they can easily be part of a network of regional data exchange, as exchange parameters are established via agreements.

Best practice: Adherence to practices via standard operating procedures

In the early years of the forensic databanks, there were sometimes difficulties because of fluctuations in leadership personnel, especially on the governmental side of the partnerships. With every institutional leadership change, there was the potential for new people with differing political agendas to enter into the process, potentially also negatively impacting the stability of the databanks. In addition to serving as principles and guidelines to databank practices, standard operating procedures (SOP) at forensic databanks also serve to anchor these mechanisms, providing an assured framework and making them less susceptible to fluctuations. These SOPs include protocols for incorporating, removing, and closing cases, coding standards for each migrant case and each donor (which safeguards their personal information), protocols for collecting case information and DNA samples, protocols on sharing information with morgues on the migrant corridor (including limits on the information shared), identification protocols and protocols for notifications to the family, among others. The adoption of SOPs provides stability and consistency. The SOPs are structured so that, even though each forensic databank has its own SOPs and retains its independence, the same baseline standards are part of each bank. This enables the similarities in protocol and practice to work towards a regional system.

Best practice: Notification of identification protocols

Among one of the most important SOPs is the notification of identifications protocol. This protocol has been adopted in similar form in all forensic databanks in the Border Project and has also been adopted as the standard in other regional mechanisms, such as the Forensic Commission in Mexico. Central to this SOP is the concept that the notification process is as important as the identification process. Further, the protocol specifies that notification of identifications to families of missing migrants must be:

- Conducted in person with representatives from parties of the forensic databank or Commission;
- Conducted in the preferred language of the family;
- Delivered with a multidisciplinary, integrated identification report;
- Delivered with expert explanation of the report;
- Done with the recognition of any past errors in previous forensic investigations (where that issue is relevant);
- Conducted with medical attention available;
- Conducted in conjunction with psychosocial support (before, during and after); and
- Have symbolic and/or financial reparation incorporated (where relevant to the case).

Best practice: Large-scale collection of genetic information as a standard strategy in missing migrant case investigation

The identification of remains is always a comparison process between information from the missing person (and sometimes from their relatives) and a given body. The comparison typically includes physical ante-mortem data and background information (date and place of last communication, route and other circumstances) on a missing person that is compared against the recovery information and physical information extracted from a body during its examination. Fingerprints and DNA from the remains and the missing person (or DNA from direct relatives) can also be compared. A multidisciplinary integrated approach to identification of remains is extremely important. In each context where a person went missing – each country, conflict, incident, etc. – some elements may be more important or more available to prioritize in an investigation than others.

Within the missing migrant context of the Central America–Mexico–United States migrant route, in EAAF’s experience, initial DNA comparison is typically the most effective approach. The first problem to take into account regarding the use of other options is the typical ante-mortem data available in these cases. In EAAF’s experience, the majority of missing migrants have very little forensically significant ante-mortem data that might aid in reaching identifications. They tend to be young individuals, from poor communities, who rarely visit a doctor or a dentist. The ante-mortem data collected only very rarely involve any medical or dental records; this information is typically based on memory. Old fractures are not common; tattoos are more frequent in this corridor than in other contexts but still occur only in a minority of cases. This is not to say that ante-mortem data should not be collected or cannot be used; we strongly emphasize that even if based on memory and even if limited in most cases, it is critical to collect this information because it does produce identifications. Furthermore, in every case it is important to check that all data are consistent; ante-mortem data often work as a very useful tool for exclusion of inconclusive initial genetic matches.

The second problem is, as mentioned before, an issue of data collection. The forms typically used to collect ante-mortem data previous to the forensic databanks were quite simple (often only one page), collecting only very basic ante-mortem information – particularly in Mexico and Central America. In addition, none of these countries had a public database with ante-mortem information that would allow large-scale crossing of ante- and post-mortem data. This situation has improved significantly recently with the adoption of the International Committee of the Red Cross, Colibrí Center for Human Rights and Border Project forms and databases. In the United States, the collection of ante-mortem data has tended to be more thorough with some examples of excellent ante-mortem collection on missing migrants in the work performed at the PCOME, primarily conducted through phone interviews with families. Since 1989, the United States also has NamUs, the national public web-based database on missing people, unidentified remains and unclaimed remains, where ante-mortem data regarding missing persons can be entered; though, as mentioned above, there are barriers to participation for families located outside of the United States.

In addition, for this migrant corridor context, even in cases where the collection of ante-mortem data could be useful, on the post-mortem end, the bodies may be too decomposed or skeletonized to take fingerprints or observe tattoos, scars or other skin-related features that could help identify remains. Many morgues along this corridor, particularly in Mexico, do not X-ray bodies while performing autopsies, diminishing the possibility to observe ante-mortem fractures.

Fingerprints and DNA comparisons are often more precise and stronger in terms of their discriminatory power on human identification; they also allow the possibility of large-scale comparisons as a first step towards possible identification, via more mathematical processes. However, fingerprints are not always easy to obtain for a number of reasons. Even if available for missing persons from previous records, State institutions may not release fingerprints because they are considered personal data and are protected by legislation; for unidentified remains,

they may be difficult to obtain as described above. They are typically available on a case-by-case basis for those cases in which an identity hypothesis has been developed. A special agreement is required for larger case comparison requests in the absence of specific identification hypotheses. DNA comparisons present advantages in this regard for two important reasons: first, because the relatives of a missing person can decide to donate saliva or blood samples with informed consent, and, second, because even with decomposed remains, DNA can be extracted from bone tissue.⁸⁶

Nonetheless, EAAF found during our assessment project that, largely due to cost and local processing capacity, DNA testing of relatives had rarely been conducted in Central American missing migrant cases except where a specific identification hypothesis was present. Even in those cases, sometimes DNA sampling and processing was not conducted. In Mexico, many more relatives had been tested by State and federal forensic institutions, but often families were not informed of what happened to their samples and the comparisons of that information against unidentified remains.⁸⁷

In sum, as a best practice in the investigation of missing migrant cases, we highly recommend the collection of ante-mortem and background information on each missing migrant case, but, in order to increase the possibility of reaching a significantly higher number of identifications, we also strongly recommend sampling and processing DNA from the relatives of missing migrants from the very beginning of the search process.

6.2.3. Border Project Missing Migrants Case Collection statistics

The tables and charts that follow capture the current statistics regarding case collection by the Border Project at the time of writing this chapter. Each forensic databank and other migrant community of origin is listed with the following: (a) the number of missing migrant/missing person cases collected; (b) the number of families related to these cases (a smaller figure because several families have multiple missing loved ones); and (c) the number of individual family member DNA donors sampled and processed.

Table 5. Total number of cases of missing migrants, families and DNA donors in the forensic databanks

Forensic databanks	Cases	Families	DNA donors
El Salvador	291	288	817
Honduras	417	385	966
Chiapas	44	42	142
Oaxaca	81	80	228
Guatemala	94	90	338
Mexico*	144	131	395
Costa Rica	1	1	5
Ecuador	3	3	6
Peru	1	1	2
Brazil	1	1	2
Nicaragua	5	5	19
Total	1,082	1,027	2,920

⁸⁶ Fire or high temperature can prevent the recovery of DNA material from bone tissue but in such cases, it would also prevent the taking of fingerprints.

⁸⁷ This relates to the larger issue of the fragmentation of forensic information and its exchange, as discussed elsewhere in this article.

Figure 16a. Cases of missing migrants

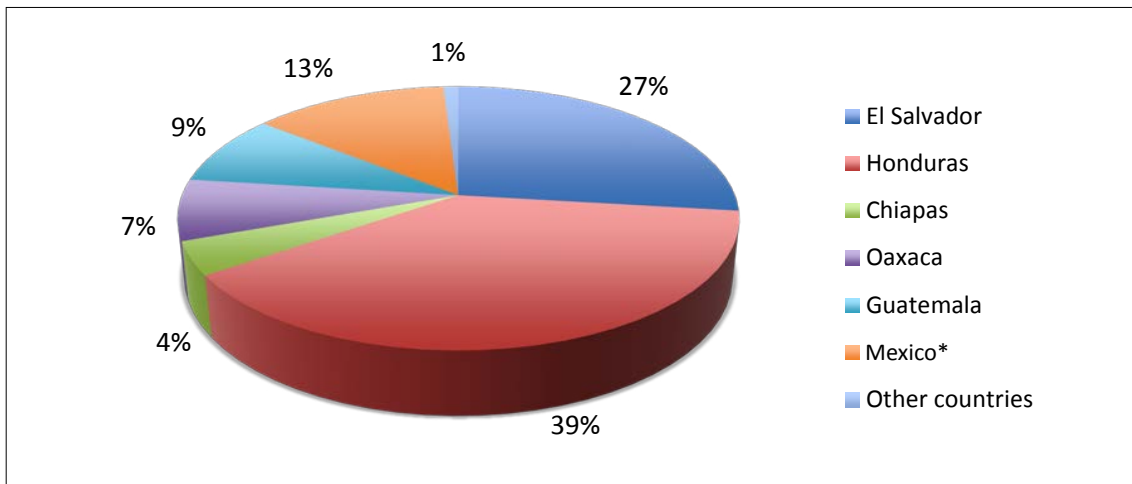
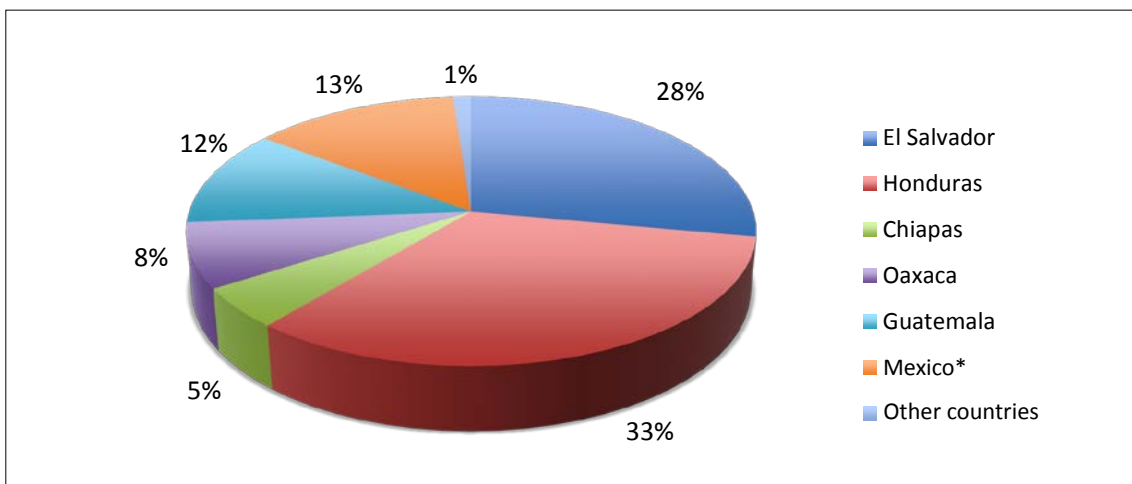


Figure 16b. DNA donors



Source: Forensic Data Banks on Missing Migrants/EAAF, statistical report June 2017.

Note: *Mexico statistics in these charts include cases that the Border Project has taken inside Mexico, outside of the states of Chiapas and Oaxaca, in places where there is not yet a forensic databank in operation; Chiapas and Oaxaca statistics are listed separately.

The forensic databanks not only dramatically improve the quantity and accuracy of information available for missing migrant cases, they also make regional information-sharing, a crucial element in reaching identifications for these populations (see the following section), more feasible.

6.2.4. The Border Project Strategic Agreements Programme

Strategic agreements: Mechanisms for information-sharing across institutions and scales

A significant component of the Border Project's approach is a strategic planning project to improve regional governments' responses and public policies regarding cases of missing migrants, working towards the founding of a Regional Mechanism on Missing Persons and Unidentified Remains. This includes State- and national-level agreements not only to create forensic databanks on missing migrants but also agreements to enlarge the crossing of information coming from

missing migrants and migrant cases with that on unidentified remains. EAAF has participated in a series of thematic meetings among Mexico and United States forensic institutions, state prosecutors' offices, NGOs and other relevant institutions to discuss access to and crossing of information on unidentified remains, the treatment of families searching for missing migrants, and improving local SOPs for collecting information on and investigating cases. In the absence of an established, large-scale regional agreement, EAAF has helped facilitate agreements for data sharing and comparison with several different entities relevant to this migrant corridor. These include strategic agreements with the PCOME in Arizona in the United States, the Attorney General's Offices of the Mexican states of Chiapas, Oaxaca and Coahuila, the federal-level Mexican Attorney General's Office and the states of Tamaulipas and Nuevo Leon in conjunction to specific sets of remains and events (see Forensic Commission section below), and networks of morgues, forensic anthropology labs, NGOs and county and local medical examiner's offices in the United States' border area, including the co-founding in 2013 of the US Forensic Border Coalition (see www.forensicbordercoalition.org).⁸⁸

Example strategic agreement: The Forensic Commission – A model in addressing challenges in access to remains likely to correspond to migrants

The Forensic Commission, launched as part of the Border Project, provides one example of transnational data exchange and case investigation practices that has led to new identifications of missing migrants. The Forensic Commission was established in 2013, when EAAF and nine partner NGOs from Mexico and Central America signed an agreement with the Federal Attorney General's Office (*Procuraduría General de la República/PGR*) to form an international commission to review cases in a transparent and independent manner from the San Fernando, Tamaulipas (2010 and 2011) and Cadereyta, Nuevo Leon (2012) massacres, totalling 316 victims, where many victims are presumed to be migrants. The agreement designates EAAF and PGR specialists to try to identify and establish cause of death of the nearly 200 unidentified remains from these massacres, as well as to review any cases where families had doubts about the remains they received as identified before the Commission's existence. Data from these remains are compared against the Forensic Databanks on Missing Migrant cases from across the Border Project data sets. The Forensic Commission is one of the first efforts of its kind, in which governmental PGR forensic staff work with non-governmental experts, with oversight from civil society. The United Nations Office of the High Commissioner on Human Rights in Mexico and Amnesty International signed the agreements as observers of its work. The Inter-American Commission on Human Rights of the Organization of American States (IACHR) and current and past Mexican attorney generals have indicated that the Commission is an effective model to be followed (IACHR, 2015a and 2015b).

Work with the Forensic Commission to date has demonstrated this type of collaboration as an effective means through which to conduct investigations and potentially improve current forensic practices. Thus far, the Commission has identified 69 individuals and returned their remains to families. These are the combined results of data provided by the Central American Forensic Databanks on Missing Migrants coordinated through the Border Project by EAAF and the Commission's investigation, resulting thus far in including another 154 additional cases of missing individuals and DNA information for 431 of their relatives as potential victims of these massacres. In addition, EAAF has been successful in recommending and implementing improved

⁸⁸ The Forensic Border Coalition is comprised of forensic scientists, scholars and human rights partner organizations working to comprehensively address the significant barriers to identifying the remains of missing migrants found on the United States–Mexico border. Coalition partners include: EAAF, the Forensic Anthropology Center at Texas State, Colibri Center for Human Rights, Houston Migrant Rights Collective, South Texas Human Rights Center, Texas State University Department of Geography and University of Houston Clear Lake Anthropology Program. See www.forensicbordercoalition.org for more information about the coalition's work and mission.

protocols for notifying families of identifications. Ultimately, in the absence of an established regional agreement for data exchange and comparison across the migrant corridor, multiple intra- and inter-State agreements can contribute greatly to making identifications of missing migrants possible; they also provide important models for future large-scale regional agreements.

Table 6. Identifications reached by the Forensic Commission, via the Border Project, by year and by event/massacre

	El Salvador	Honduras	Guatemala	Mexico	Nicaragua	Total
2013	-	8	-	-	-	8
2014	-	3	-	-	-	3
2015	1	-	10	6	-	17
2016	1	1	3	25	2	32
2017*	-	1	3	5	-	9
Total	2	13	16	36	2	69

	El Salvador	Honduras	Guatemala	Mexico	Nicaragua	Total
T1	-	2	-	-	-	2
T2	2	1	16	36	-	55
Cadereyta	-	10	-	-	2	12
Total	2	13	16	36	2	69

Source: Forensic Data Banks on Missing Migrants/EAAF, statistical report June 2017.

Notes: The abbreviation “T1” refers to the San Fernando, Tamaulipas massacre in 2010 and “T2” refers to the San Fernando, Tamaulipas massacre in 2011.

*January–June 2017

6.2.5. The Border Project: Current statistics on identifications

Through the strategies outlined above, the Border Project has developed significant data sets (see Table 6) and reached identifications in a number of missing migrant cases for this challenging transnational context. The current identifications statistics for the Border Project (including those related to the Forensic Commission) are as follows:

Table 7. Border Project identifications per forensic databank (FDB) and per year

	FDB – El Salvador	FDB – Honduras	Mec. – Guatemala	FDB – Chiapas	Costa Rica	Ecuador	Mexico*	Nicaragua	FDB – Oaxaca	Total
2011	3	-	-	-	-	-	-	-	-	3
2012	9	1	-	1	1	-	-	-	-	12
2013	14	14	12	1	-	-	-	-	-	41
2014	2	5	1	-	-	1	-	-	-	9
2015	6	1	10	-	-	-	6	-	-	23
2016	8	4	4	2	-	-	26	2	-	46
2017	1	2	3	1	-	1	5	1	2	16
Total	43	27	30	5	1	2	37	3	2	150

Note: FDB stands for Forensic Data Bank. Mec. stands for Forensic Mechanism.

Figure 17a. Border Project identifications per forensic databank and year

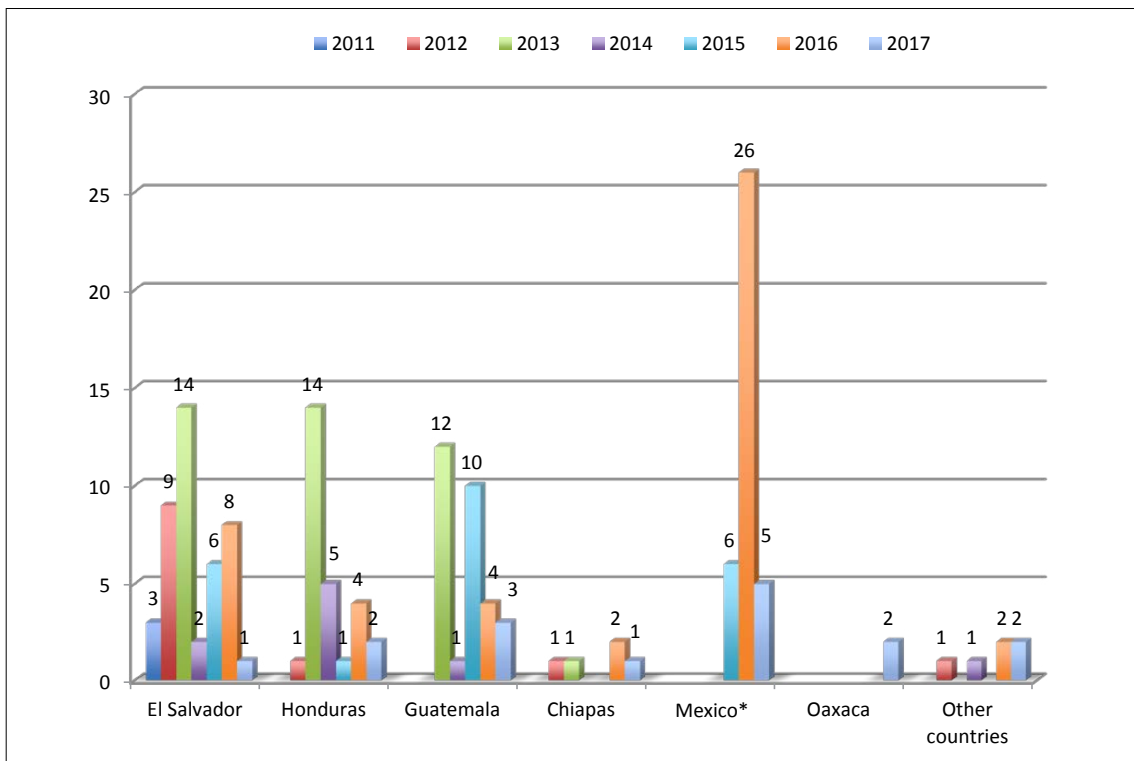
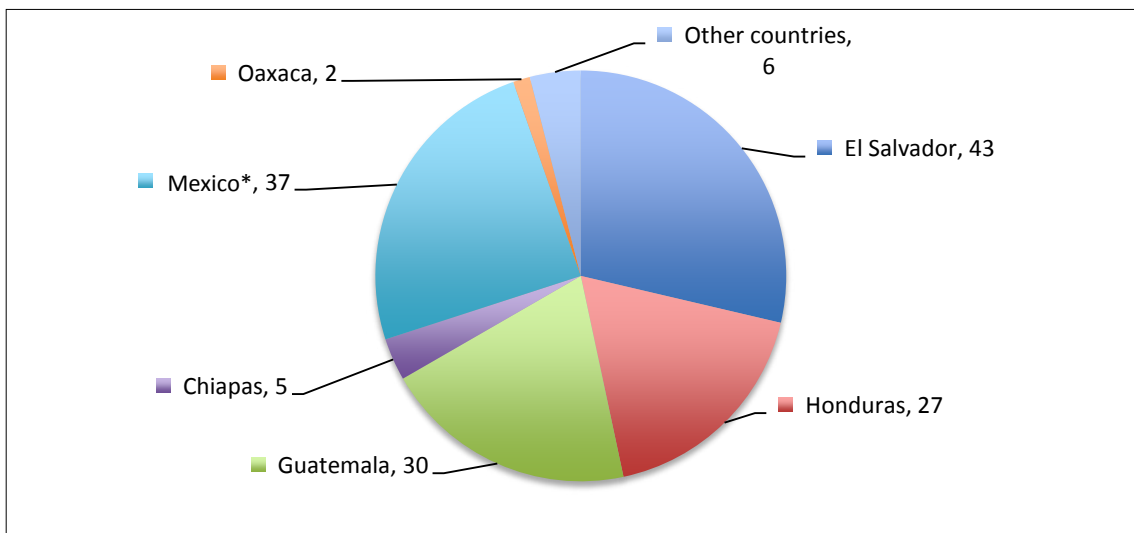


Figure 17b. Border Project identifications by location, 2011–2017



Source: Forensic Data Banks on Missing Migrants/EAAF, statistical report June 2017.

Note: *Mexico statistics in these charts include cases that the Border Project has taken inside Mexico, outside of the states of Chiapas and Oaxaca, in places where there is not yet a forensic databank in operation; Chiapas and Oaxaca statistics are listed separately.

Table 8. Border Project identifications per forensic databank (FDB) by location of remains discovery

	FDB – El Salvador	FDB – Honduras	Mec. – Guatemala	FDB – Chiapas	Costa Rica	Ecuador	Mexico*	Nicaragua	FDB – Oaxaca	Total
Arizona	10	8	8	5	1	-	1	-	2	35
Texas	29	4	5	-	-	2	-	1	-	41
Mexico	3	15	16	-	-	-	36	2	-	72
California	1	-	-	-	-	-	-	-	-	1
Florida	-	-	1	-	-	-	-	-	-	1
Total	43	27	30	5	1	2	37	3	2	150

Map 7. Border Project identifications per forensic data bank (FDB) by location of remains discovery



Source: Forensic Databanks on Missing Migrants/EAAF, statistics as of June 2017.

Note: Names and boundaries indicated on map do not imply official endorsement or acceptance by IOM.

6.3. Challenges

The practices outlined above address many of the challenges in tracing migrant deaths and resolving missing migrant cases in the region. However, some important challenges remain.

Ongoing challenge 1: Fragmentation of data

Fragmentation of data related to missing migrant cases continues to be a challenge across the entire migrant corridor. Case data on missing migrants are successfully being centralized via the forensic databank model, but, although such databases are pivotal resources where they exist, databanks do not yet exist for all relevant countries and localities in the region. One effort to centralize data on missing migrants in Mexico is the creation of the Migrant Unit in 2016 to investigate crimes against migrants in Mexico within the Federal Prosecutor's office; however so far it contains very few cases. Unidentified remains data continue to be fragmented in a range of local, State and federal systems both in Mexico and the United States, inhibiting the ability to initiate comparisons on a truly mass scale. EAAF is pursuing different strategies to partner with entities and advocate new policies and agreements in order to address these issues of fragmentation.

Ongoing challenge 2: Regional crossing of forensic data

Crossing forensic data internationally on a mass scale also poses significant challenges. In developing mechanisms to facilitate mass genetic/case data crossing, differences in potential blockages and possible solutions can vary greatly depending on the specific States and institutions involved. Particular regional agreements to exchange data also need to address issues specific to the regional context: for example, in regions where danger to migrants' families is a concern, such as the Central America–Mexico–United States migrant corridor, agreements should take into account the need to protect data that might be sensitive. For this migrant corridor, the current challenges in crossing forensic data internationally include issues that are pertinent to both the crossing of missing Central American migrants' case data with data on remains found in Mexico and the crossing of missing Central American and Mexican migrants' case data with remains found in the United States.

Ongoing challenge 3: Consistent use of known best practices in notifications of identification

In addition, even for cases where identification is resolved, it is necessary to create protocols for the notification of identification made to families that are sensitive to the context of the migration corridor context. Recommended best practice protocols have been generated by the Border Project and are in use across the project's partner entities, as described earlier in this article. However, the use of these protocols needs to be expanded for notifications of identification made of missing migrants by other entities across the region.

Ongoing challenge 4: Repatriation of remains

Repatriation of remains can be an expensive process that can contribute to the challenges faced by families whose missing loved ones have been identified but not yet returned. Migrants are major contributors to national economies; in recognition of this financial contribution, as well as general recognition of the rights of families to care for their loved one's remains, there should be more resources designated by home countries for the return of migrant remains. However, sometimes repatriation of remains of missing migrants to their country of origin can take a year or more largely because of lack of financial resources for the country paying for repatriation. Inevitably, delays damage relatives waiting for the return of their loved ones; relatives get sick, lose weight, experience depression and express being in a state of limbo, half already in a mourning process, half trying to connect with other life activities while waiting for the return of their loved ones. Repatriation is an entirely governmental task; governments need to expand their repatriation funds to speed up the repatriation process and diminish the damage to families of the missing.

Ongoing challenge 5: Lack of acknowledgement of the humanitarian crisis

Failure to recognize the phenomenon of missing migrants and migrant deaths as a humanitarian crisis contributes to barriers in effectively addressing it. In some public discourse, there can be devaluation of migrants as persons or stigma attached to the act of migration. Moreover, the lack of statistics on many issues related to missing migrants and unidentified remains shows a lack of acknowledgement of the scale and nature of the crisis. In the absence of care and attention to tracking the data concerning these phenomena and lack of recognition of the right to truth of the families behind each of these cases, the human reality of the crisis can be lost.

6.4. Conclusion and recommendations

The outcomes of the Border Project to date clearly demonstrate that improved missing migrant case data collection, improved access to unidentified remains data, and improved intra-State and inter-State data sharing opportunities can be reached through the development of mechanisms such as the Forensic Databanks on Missing Migrants and strategic local and international agreements. Further, the outcomes demonstrate the importance of prioritizing genetic information collection and comparison, in conjunction with other forensic methods, in the investigation of missing migrant cases. The results have been identifications made in situations where missing persons data and unidentified remains data would not have had the opportunity for comparison otherwise, ultimately meaning that more cases are resolved for families.

In the future, the Border Project seeks to extend the forensic databank model to other nations and States along the Central America–Mexico–United States migrant corridor experiencing missing migrant cases, as well as develop new strategic agreements across different geographical scales for further access to unidentified remains data in places of migrant transit and destination, ultimately working towards both increasing identifications and developing a regional forensic mechanism to address these issues in the long term.

The Border Project model could potentially be replicated in other migrant corridors to address the challenges of missing migrants (and missing asylum seekers and refugees) and unidentified remains forensic case investigations. Three programme-wide aspects of the Border Project approach are particularly key:

- (a) The creation of formal structures, signed agreements and agreed-upon protocols to facilitate the collection of missing migrant case data, access to unidentified remains data, and data exchange;
- (b) The inclusion of both governmental entities and NGOs representing family interests in such structures and agreements; and
- (c) Approaching the problem of missing migrants and unidentified remains likely to correspond to migrants across the entire region of the relevant migrant corridor.

These three key aspects can be addressed through the series of programme strategies, each of which has the potential for replication in other migrant corridors after an evaluation for adjustments needed to address regionally specific concerns. These areas are outlined in detail earlier in this chapter in the descriptions of the Border Project's best practice methodologies and approaches to strategic agreements. They can be summarized as:

- Create Forensic Databanks on missing migrants in migrant communities of origin; ensure that these are comprised of governmental and non-governmental partners who work together, collecting and crossing information on missing migrants.

- Standardize case/ante-mortem data collection forms across the migrant corridor and/or otherwise ensure that data collected are quality-controlled and that shared data can be easily compared.
- Collect and process genetic information from families of the missing at the case intake stage.
- Establish SOPs for the databanks to support their stability and functionality.
- Establish strategic agreements for data exchange and comparison for missing persons and unidentified remains throughout the migrant corridor; a broad transregional agreement is ideal, but agreements can also be approached on smaller scales responsive to local conditions, as a broader agreement is worked towards in the long term.
- Use a best-practice standard notification of identification protocol that ensures the notification process is performed with the same quality and care as the identification itself and is done with respect for the families' human rights.

In addition, EAAF sees the following points of action as key to increasing opportunities for the improvement of missing migrant case investigations worldwide:

- Sharing experiences between different migration corridors regarding pursuing case data collection, investigation and identification processes. A compendium of best practices based on worldwide experiences should be generated as a resource for all parties working on these issues. This could include sharing examples of effective data collection, recommended data structures and privacy guidelines for case data exchange, and recommended standard protocols for identification and notification.
- Compiling model agreements for effective exchange of case data across localities, regions and nation States to act as examples that might guide future agreements; these models should emphasize the importance of incorporating both government entities and NGO and family member organization entities.
- Advocating for the adoption of forensic best practices in the identification of remains for missing migrant cases, including case data quality standards that facilitate data exchange, identification methodologies appropriate to the regional migration route context, notification of identification protocols and repatriation process support, and addressing psychosocial support needs of the families.
- Advocating for the recognition of the human reality of the crisis – ultimately, the reality of the humanitarian crisis of missing migrant deaths must be recognized by officials and in public discourse in order to produce effective policies and procedures around these issues. Changes in data collection, interaction with families, treatment of remains and every other aspect of investigating missing migrant cases should be based on this recognition.

References

Anderson, B. and B. Parks

2008 Symposium on border crossing deaths: Introduction. *Journal of Forensic Sciences*, 53:6–7.

Argentine Forensic Anthropology Team (EAAF)

2017 *Forensic Data Banks on Missing Migrants, Statistical Report June 2017*. EAAF, New York.

Inter-American Commission on Human Rights of the Organization of American States (IACHR)

2015a IACHR wraps up onsite visit to Mexico. Press release. Available from www.oas.org/en/iachr/media_center/preleases/2015/112.asp

2015b *The Human Rights Situation in Mexico*. Organization of American States, Washington, D.C. Available from www.oas.org/en/iachr/reports/pdfs/mexico2016-en.pdf



This material has been funded by UK Aid from the Government of the United Kingdom; however, the views expressed do not necessarily reflect the Government of the United Kingdom's official policies.



IOM's Global Migration
Data Analysis Centre
GMDAC



65
YEARS

International Organization for Migration

