

International arms flows: monitoring, sources and obstacles

Clingendael Report

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About the author


Pieter D. Wezeman is a Senior Researcher with the SIPRI Arms and Military Expenditure Programme. His area of research is the global production and proliferation of conventional arms with a special focus on military expenditure and arms procurement in and arms transfers to the Middle East and Africa. He also monitors multilateral arms embargoes and maintains the SIPRI database on that issue.

The Clingendael Institute
P.O. Box 93080
2509 AB The Hague
The Netherlands

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Email: info@clingendael.org

Website: www.clingendael.org

Contents

| | | |
|---|---|----|
| 1 | Summary and recommendations | 1 |
| | Use and support existing monitoring efforts | 1 |
| | Improve the use of existing information | 2 |
| | Carefully explore new tools | 2 |
| | Commission case studies | 2 |
| | Support broader studies based on existing case studies | 3 |
| 2 | Why monitor international arms flows? | 4 |
| 3 | Organisations that monitor arms flows | 6 |
| | Overview of organisations that monitor arms flows | 6 |
| | Intelligence agencies | 7 |
| | The Stockholm International Peace Research Institute (SIPRI) arms transfers programme | 7 |
| | Small arms: Norwegian Initiative on Small Arms Transfers (NISAT) | 8 |
| | United Nations Panels of Experts | 9 |
| 4 | Monitoring and measuring arms flows: sources and methodologies | 10 |
| | Systematic public government reporting on the national level | 10 |
| | Systematic public government reporting on the international level | 10 |
| | Occasional government and company information | 12 |
| | Field research | 12 |
| | Images from the internet | 13 |
| | Satellite images | 14 |
| 5 | Case studies of arms flows to conflict areas | 15 |

1 Summary and recommendations

This paper discusses the current monitoring of arms flows to conflict areas. While underlining the great variety of information, it discusses the limitations and biases of the most commonly used sources and methods for compiling and analysing data on arms flows. The discussion is illustrated by brief case studies on arms transfers to belligerents in a small number of conflict areas: Syria, Turkey, Ukraine and Yemen. The paper includes recommendations on how to improve the collection and analysis of arms flows data.

Despite the availability of useful information from a great variety of sources there is no single database or other type of systematic long-term research that continuously and in detail monitors flows of all categories of arms globally or to certain regions, countries or conflict zones. The cases described in this report show that gathering evidence of arms flows is a time-consuming, labour-intensive process with uncertain outcomes. However, such research has regularly yielded information of great value to understand the impact of arms flows on conflicts and networks and processes behind arms flows.

The main surviving continuous public effort to monitor international arms flows, the SIPRI database, only covers transfers of major arms. The NISAT database on the authorised small arms trade has been closed down in 2017 due to a lack of funding. There is no continuous collection of data on illegal or clandestine arms flows, primarily those to non-state armed groups. Experience has shown that it is difficult to sustain long-term monitoring activities in the field of arms flows.

These observations lead to several recommendations for policy-makers on how to support the improvement of global arms flows monitoring and how to gain in-depth insights into arms flows to specific conflicts, which are summed up below.

Use and support existing monitoring efforts

To increase the understanding of the impact of arms flows on conflicts and to monitor trends and patterns of arms flows to primarily state actors in conflict zones, it is important to ensure the continuance of existing long-term efforts, like the arms transfers database and related activities of the Stockholm International Arms Transfers Database or the regular publications of the Small Arms Survey, and to consider the possibility of reviving the database on transfers of Small Arms and Light Weapons by the Norwegian Initiative on Small Arms Transfers.

In addition, political support is needed for promoting broader participation in and improvement of governmental reporting on arms flows, such as within the framework of the United Register on Conventional Arms and the Arms Trade Treaty.

Improve the use of existing information

As existing arms monitoring efforts remain limited in coverage and funding there is a need to review and improve them, in particular by facilitating the integration of a large body of underutilised data from easily available sources. For example, annual reports that collect and analyse data from governmental reporting on arms exports could improve insights into the effects of government sanctioned arms flows.

Carefully explore new tools

Exploring new tools for assessing arms flows such as the use of satellite images, monitoring images on social media or field research is worthwhile when used in combination with existing approaches. However, limitations to these methodologies include the significant resources needed for the large-scale collection and processing of such data and the risk that funding such efforts may crowd out existing and, in terms of the balance between costs and the coverage of the output, probably more effective data collection efforts.

Commission case studies

Case studies, based on combinations of sources, remain the main tool for gaining a detailed understanding of international arms flows, especially when these are clandestine or illicit, whether to governments or to non-state armed groups. This often involves one-off studies with a limited time frame. Support for such case studies remains crucial as the chances of creating and sustaining large-scale and long-lasting monitoring projects appear to be small.

For those cases where the UN Security Council agrees on arms embargoes the efforts of the UN panels of experts' monitoring deserve attention and political support. Governments could aim to support the panels by increasing and announcing their interaction with the panels, by making more resources available, by highlighting their importance and by calling on other states to increase their constructive interaction with the panels. In addition, governments can continue to support the practice that the reports of the panels remain available in the public domain, a practice which some states have questioned on some occasions in the past.

When governments are seeking a better understanding of arms flows to specific conflict situations the significant expertise at organisations like SIPRI, the Small Arms Survey and Conflict Armament Research could be more actively called upon.

Support broader studies based on existing case studies

Case studies on arms flows to specific countries or regions are seldom combined into larger comparative studies that aim to map and understand broader patterns of international arms flows and their impact, and that can contribute to improving arms monitoring tools.

For example, combining the findings of several or all reports of all UN panels of experts during a certain number of years into a single study would be a relatively modest project that could yield general insights and concrete recommendations for improving existing arms transfer control policies and instruments and related tools and procedures.¹ In addition it would be an opportunity to take stock of and to assess the methodologies used by the panels.

1 The only study in which the reports were used in a comprehensive manner dates from 2007: D. Fruchart et al., 'United Nations arms embargoes: their impact on arms flows and target behaviour', SIPRI and Uppsala University, 2007.

2 Why monitor international arms flows?

The monitoring of international arms flows to conflict areas, in the form of both case studies and the consistent, longitudinal and comprehensive collection and analysis of data, can have several related objectives.

The availability and supply of arms is a significant factor in the dynamics of violent conflicts. Most states and non-state actors involved in violent conflicts will use weapons and military equipment that originate mainly or completely from foreign suppliers. Mapping and analysing international arms flows is therefore considered an important part of the research aimed at understanding conflict, developing conflict early warning efforts and as input in policy-making aimed at conflict prevention and resolution.

Monitoring arms flows is essential for assessing the implementation and effects of national arms export laws and policies, international or multilateral arms transfer control mechanisms and treaties such as United Nations arms embargoes, the Arms Trade Treaty, the EU Common Position on arms exports and the Wassenaar arrangement as well as international arms control efforts such as the United Nations Register of Conventional Arms.² A key objective of these laws, policies and instruments is to prevent irresponsible arms transfers that may contribute to an excessive and destabilising accumulation of arms and regional instability or that may provoke, prolong or exacerbate violent conflict. Research into the structures and networks through which arms are supplied generally also aim to support the implementation of arms export policies and the improvement of relevant instruments.

Research on arms flows may also be used in military or security policy-making in the national interest of states when it is used to assess how arms flows impact on the military capabilities of current or potential adversaries, including in the framework of international peacekeeping operations. Such assessments, which may not be public, can inform decisions about arms procurements, military deployments and operations or arms transfers and military aid to allies.

2 For an overview of developments in these treaties and mechanisms, see SIPRI Yearbook, Armaments, Disarmament and international security, Oxford University Press, 2017 and 'Literature review for the Policy and Operations Evaluations Department of the Dutch Ministry of Foreign Affairs', SIPRI, August 2017, <https://www.job-evaluatie.nl/publicaties/rapporten/2017/08/01/sipri-literature-review-for-job>.

Assessing arms flows may contribute to mapping relations between actors in conflicts and their external supporters. Such insights can underline the utility of involving these external actors in efforts to end conflicts. They can also lead to action to prevent these arms flows, including by sanctioning arms supplying states or military action.

Definition

While different terms exist, in this paper ‘international arms flows’ is used, to include all cases in which weapons are deliberately transferred or handed over by a supplier in one country to a recipient in another country. Such suppliers can be governments or government institutions and companies or arms traders acting with the permission of relevant governments. They can also be companies or arms traders that act without government permission, usually referred to as the ‘illegal’ or ‘illicit’ arms trade. Recipients can be armed forces, paramilitary forces, non-state actors or multilateral or international organisations.

The term ‘arms trade’, though often used to describe all forms of international arms flows, is avoided here as it may suggest that the main objective of the research is market analysis with a focus on economic and financial aspects instead of the broader objective of understanding the impact of arms availability on conflicts.

3 Organisations that monitor arms flows

This section discusses several organisations that monitor, on a more or less regular basis, arms flows in general or to more specific areas of tension and conflict.

Overview of organisations that monitor arms flows

| | Type of information | Advantages | Disadvantages |
|---|---|---|---|
| Intelligence Agencies | <ul style="list-style-type: none"> - Any relevant information | <ul style="list-style-type: none"> - May have significant technical and human resources - Authorised to use intelligence tools such as Communication intelligence | <ul style="list-style-type: none"> - Potential country bias - Often secret and not verifiable - Usually confined to specific regions or countries |
| Stockholm International Peace Research Institute (SIPRI) | <ul style="list-style-type: none"> - Transfers of mainly major arms - Register of arms transfers - Statistical estimate of volumes of arms transfers | <ul style="list-style-type: none"> - Long-term effort - Transparent methodology and sources - Available for free | <ul style="list-style-type: none"> - Excludes small arms and therefore limited information to non-state actors - Time lag of up to one year |
| Norwegian Initiative on Small Arms Transfers (NISAT) | <ul style="list-style-type: none"> - Government-authorized exports of small arms and light weapons | <ul style="list-style-type: none"> - Long-term effort - Transparent methodology and sources - Available for free | <ul style="list-style-type: none"> - Discontinued - Mainly based on data published by governments, whereas many governments do not publish such data - Time lag of two years or more - Little information on arms flows to non-state actors |
| United Nations Panels of Experts | <ul style="list-style-type: none"> - Data and assessment of arms flows to states under a full or partial UN arms embargo | <ul style="list-style-type: none"> - Access to conflict zones - Governments respond to their requests | <ul style="list-style-type: none"> - Covering a small number of conflict areas - Lack of resources and time |

Intelligence agencies

States may employ intelligence agencies to gather information on arms transfers to conflict zones. Some states may task their agencies with making global surveys, but most will focus on geographic areas which involve their specific national interest, such as the areas where their armed forces are deployed. Intelligence agencies can have more resources than other entities that monitor arms flows. This includes communication intelligence, the use of which is restricted by national laws, and large-scale and high-resolution satellite or aerial imagery, which remains too costly for others. Whereas intelligence agencies are likely to have the most extensive resources, in terms of personnel, technology and a legal mandate, their reporting usually remains outside the public domain as part of their efforts to protect their sources and methods and the technical performance of the intelligence collection tools they use.

The only regularly published overview of global arms transfers assumed to be based partly on information provided by intelligence agencies is an annual report published by the US Congressional Research Service.³ It provides estimates of the value of total arms flows between countries. The main drawback to this publication is that its sources and methodology are secret and unverifiable and that its US government origins make it potentially biased. Furthermore the reports are limited in detail and do not provide data disaggregated by the type or category of weapons.

The Stockholm International Peace Research Institute (SIPRI) arms transfers programme

SIPRI monitors and analyses global arms transfers with the aim of increasing the fundamental understanding of the impact of arms transfers and informing policy-making and implementation related to arms control and enhancing public transparency as a means of ensuring responsible international arms procurement and arms transfers.

SIPRI's research revolves around its arms transfers database, which is currently the only freely available and continuously updated public database.⁴ Using the full spectrum of open sources, SIPRI collects data on international transfers of major arms and some of their major components. By comparing reports from different sources an assessment of their accuracy is made. This is a labour-intensive method and resources are limited. Therefore not all the available source material is used and the scope of the monitoring is confined. In particular small arms, ammunition and most light weapons are excluded

3 C.A. Theohary, 'Conventional arms transfers to developing nations', 2008-2015 (Library of Congress: Washington DC, 19 December 2016); Holtom, P., Bromley, M., Simmel, V., 'Measuring international arms transfers', SIPRI Fact Sheet, December 2012.

4 The database is available at: <https://www.sipri.org/databases/armstransfers>.

from the SIPRI database and statistics. With the available sources it is not possible to create a sufficiently detailed and comprehensive overview of transfers of these items that allows the construction of statistics that give meaningful insights into trends and patterns. In addition, the continuous collection of the available information on small arms and light weapons would require more resources.

The database provides the option to create lists of weapons transferred between countries and to convert this information into statistics, so-called trend indicator values (TIV). These indicate the volume of the transfers of major arms between countries and regions over time.

Due to the focus on major arms the SIPRI data is mainly useful for an analysis of arms flows at the state level, in particular assessing global trends and patterns, arms export and arms procurement policies by states and research on the impact of arms flows on state behaviour.

Small arms: Norwegian Initiative on Small Arms Transfers (NISAT)

From 1997 to 2017 the NISAT maintained a database that compiled data on exports and imports of small arms and light weapons, mainly from national and international government reporting on arms exports and imports.⁵ As many countries do not report or report on an irregular basis the database offers only a partial insight into government permitted international transfers in small arms and light weapons, with a bias towards transparent countries. As government reporting is generally slow the database has a time lag of about two years. Funding for NISAT ceased in the autumn of 2017, although the database is still accessible at the time of writing.

The NISAT database provided data for an annual analysis of global arms flows by the Small Arms Survey (SAS) in Geneva. Between 2001 and 2015 the Small Arms Survey Yearbook included a chapter on this topic. The yearbook was discontinued in 2016 and instead the SAS published its description of global patterns in the trade in small arms and light weapons in 2013 in the form of occasional papers.⁶ However, the analysis is very broad and is hampered by the limitations of the data, in particular regarding arms flows to conflict areas. For example, its utility for early warning or an analysis of current conflict is limited as it describes the situation two years prior to the publication of the report.

The cases of the discontinuation of NISAT and of the SAS Yearbook illustrate the difficulty of obtaining consistent funding for long-term arms transfer monitoring efforts.

5 The project has maintained a website at <http://nizat.prio.org>. Although it was still available at the time of writing, it may close down.

6 The latest version is from 2017 and covers trends in 2014: P. Holtom, I. Pavesi, 'Trade update 2017, Out of the shadows', Small Arms Survey, 2017.

United Nations Panels of Experts

Since the 1990s the United Nations Security Council has regularly imposed sanctions on states, regions within states or non-state actors, which often include arms embargoes. It has been common practice that teams of ‘panels of experts’ or ‘monitoring groups’ appointed by the UN Secretary-General monitor the implementation of UN sanctions and investigate violations.⁷ In 2017 of the 13 UN arms embargoes in force, such panels were in operation for 11 sanction regimes.⁸

The panels consist on average of five persons of which usually one is an expert in armament issues. Due to their UN affiliation they often have access to the conflict areas that they are monitoring and have an increased possibility of receiving answers to requests addressed to the governments of countries linked to elements of the investigations of these panels. For example, the panels may visit a conflict area, observe certain weapons in use and, on request, receive information about the original export licences for these weapons from the government of the country where the weapons were produced.

Reporting by the panels varies between one and two per year. In general these reports are made publicly available and are often the most comprehensive and informative if not the only publicly available overviews and analyses of arms transfers to conflict areas where UN arms embargoes apply. The reports provide key insights into the methods used to evade arms embargoes and the actors involved, which can be used by states to respond directly to sanctions violations and to improve their own national arms export control capacities or assist other states in doing so.

However, the reports can only provide a rudimentary assessment of arms flows to the areas or groups under investigation for several reasons: limited resources; access to specific areas is denied by the governments that are under investigation; a lack of responses to requests for information to governments regarding weapons and other military technology observed or documented; and interference by UN member states aimed at influencing the panel findings.⁹

7 An overview of these teams and their reports can be found on the website of the UN Security Council sanctions committees, <https://www.un.org/sc/suborg/en/>.

8 These were related to Afghanistan, the Central African Republic, Eritrea, Somalia, Sudan, the DRC, Libya, Iran, North Korea, Yemen and the Taliban. In addition, the Panel on South Sudan investigates arms flows, even though there is no UN arms embargo on the country.

9 See for an in-depth analysis of the panels and their limitations: E. LeBrun, C. Rigual, ‘Monitoring UN arms embargoes, observations of Panels of Experts’, Small Arms Survey, Occasional paper 33, August 2016; A. J. Boucher, V. K. Holt, Targeting spoilers, ‘The role of United Nations panels of experts’, The Henry L. Stimson Center, 2009.

4 Monitoring and measuring arms flows: sources and methodologies

This section discusses the most prominent sources and methods used by the organisations described above and for less regular or occasional monitoring efforts and case studies published by others.

Systematic public government reporting on the national level

A significant number of governments, mainly in Europe and North America, publish national arms export reports that give information, sometimes in great detail, about the categories or types of arms exported, their destination and their end users.¹⁰ Relying solely on national governmental arms export reports would provide an inaccurate overview of arms transfers to conflict zones, because many countries known to be supplying weapons to conflict zones are not publishing arms exports reports, including the major arms exporters Russia and China.

Despite these shortcomings, government reports are an important but underutilised source of information on arms flows. Data from the national reports has been included in the now defunct NISAT database on small arms transfers and in the SIPRI arms transfers database. However, there is no regular comprehensive report that compiles, compares and analyses the information in the national reports and uses them to understand the impact of these arms exports on conflict and stability.

Systematic public government reporting on the international level

Each year all UN member states are requested to report, on a voluntary basis, information on their annual exports and imports of major arms and are invited to report information on the transfers of small arms and light weapons to the *United Nations Register of Conventional Arms* (UNROCA). However, in recent years only around 25 per cent of UN member states have reported and participation by countries in the

10 An archive of national arms export reports is maintained by SIPRI at <https://www.sipri.org/databases/national-reports>.

conflict-prone Middle East and African regions has been very low.¹¹ Many countries submit information irregularly or submit only information on major arms. Therefore, any statistics derived from the data in UNROCA provide an incomprehensive and skewed picture of trends and patterns in arms transfers.

Submissions often add new information to the public domain, including details on arms transfers to conflict zones, especially data on the exports of small arms. However, cross-checks on imports and exports between submissions, and with information from other sources show that some states' submissions are incomplete or include major errors.¹²

To maintain UNROCA as a major source of information on international arms flows efforts are needed to reverse the decline in participation and to encourage states to improve their reporting.¹³

The international *Arms Trade Treaty* (ATT) that aims to establish standards for regulating the trade in conventional arms and to prevent the illicit trade in weapons entered into force in late 2014. A total of 130 states have signed the treaty, of which currently 92 are state parties. The ATT promotes transparency in the arms trade and state parties are obliged to submit annual reports on arms exports and imports, which will be important for assessing the impact of the ATT. The ATT reporting format is similar to that of UNROCA and as such the two mechanisms complement each other. Some states that are not parties to the ATT do report to UNROCA, including China, Russia and the US, while other states report to the ATT and not to UNROCA.¹⁴ Whereas the ATT reports are generally made public, states can choose to submit confidential reports to the Secretariat of the ATT.

Neither UNROCA nor ATT has established procedures to systematically compare and analyse the data submitted by states.

11 SIPRI Yearbook, 'Armaments, Disarmament and international security', Oxford University Press, 2017, p. 391.

12 P.D. Wezeman, S.T. Wezeman, 'The 2015 UN Register on Conventional Arms: still time to improve', SIPRI, 18 September 2015, <https://www.sipri.org/commentary/expert-comment/2015/2015-un-register-conventional-arms-still-time-improve>.

13 In 2016 a UN Group of Governmental Experts made a number of recommendations in that regard. See: United Nations, General Assembly, Report on the continuing operation of the United Nations Register of Conventional Arms and its further development, A/71/259, 29 July 2016.

14 The reports are available at <http://thearmstradetreaty.org/index.php/en/2017-01-18-12-27-42/reports>.

Occasional government and company information

In addition to systematic annual reporting on arms exports a wealth of information on specific arms exports, military aid and arms imports is available in the form of occasional government reports, parliamentary records and statements by government officials. Information published by arms-producing companies also provides significant insights into arms flows to potential or current conflict areas. Usually this information provides details on weapons deals with governments.

Gathering this type of information is labour-intensive and for optimal results is dependent on staff with broad language skills. Such information, either gathered from primary or secondary sources, forms an important part of the data used in the SIPRI database on the transfers of major arms. However, information on other arms and military technology, such as small arms or ammunition, is not compiled in a similar systematic manner.

Field research

Field research on arms flows, in both conflict areas and in countries from where weapons originate, includes interviewing key informants, collecting unpublished documents and recording technical data about weapons observed in the field. In general this type of research is labour-intensive and only scratches the surface of the overall scope and volume of arms flows. However, it provides valuable insights into the workings of arms flows.

Collecting information in the field about the types of weapons used and information about their origins has become a significant element of an investigation and research into arms flows in conflict zones and is an integral element in the work of UN panels of experts and has also been adopted by non-governmental and commercial consultancies, such as the Armament Research Service (ARES) and Conflict Armament Research (CAR). The main aim of such research is to trace back the chain of custody or the supply chain by recording data such as weapon types, serial numbers and batch numbers observed in conflict areas and comparing the results with the production and export records made available by governments or with data on weapons observed elsewhere. CAR operates a database of the results of its field research that includes data on observations of small arms and light weapons and ammunition observed in several countries in the Sahel, Iraq and Syria.¹⁵

15 The database is accessible via <https://itrace.conflictarm.com/Home/Login> which is part of <http://www.conflictarm.com>.

This type of research is time-consuming and labour-intensive and the anecdotal or fragmented data it yields has limited value when assessing trends in the volume of arms flows and determining the immediate suppliers. In theory crowd sourcing could be used to increase the yield in the information gathered. However, there are obvious risks to such an approach, including the risk involved in handling weapons and munitions and that gathering information on weapons may be considered to be spying.

Despite the shortcomings, weapons data from field research has been shown to be useful in assessing how arms move between conflict zones and arms supply networks, in raising awareness amongst arms suppliers about the risk that weapons may be diverted to unintended end users and in showing that arms have a long lifespan and may fuel conflict long after they have been produced and transferred.¹⁶

Whereas systematic field research aimed at tracing small arms and light weapons is a relatively new development, its potential is illustrated by the long-established hobbies of military aircraft and military ship spotting. In effect a form of crowd sourcing, spotters' networks can be a rich source of information, for example for the SIPRI database, and this information is likely to be relatively reliable as a result of an informal process of sharing imagery and independent observations and informal 'peer review' within the international networks.

Images from the internet

The amount of images and videos of events in conflict zones published by individuals, NGOs, armed groups or governments, whether for private use on social media, as propaganda or as news has massively increased with the internet and such imagery is now a useful source for research on arms flows.

The key drawbacks of using images from the internet are the difficulties in determining when and where the images were taken and if and to which extent they have been altered, whether or not with the aim to mislead. Moreover, such information often does not provide the detail needed to determine the key characteristics of arms, such as serial numbers, which are needed to establish the chain of custody.

16 See for example: 'Investigating cross-border weapon transfers in the Sahel', Conflict Armament Research, November 2016.

Despite these shortcomings, images of weapons in conflict zones have proved to be useful in order to confirm reports from other sources and as leads for further investigation. The use of images from the internet has been significant for monitoring arms flows to the conflict in Syria.¹⁷

However, the use of internet-sourced images for arms flow research is labour-intensive and there is no global or regional systematic collection and analysis of this type of data on arms flows in the public domain.

Satellite images

High-resolution satellite imagery has become cheaper and thus more accessible for non-governmental research organisations that research different aspects of violent conflict. Such imagery is particularly useful when assessing large-scale conflict-related developments, such as damage to houses and infrastructure and population displacement and to detect the deployment of major weapons and military formations.¹⁸ When investigating arms flows satellite images can corroborate other information or they can be a lead for further investigations. However, such use is limited for several reasons: images of certain areas at certain times may not be available; the procurement of sufficient images and the expertise needed to analyse them is costly; the available imagery only allows the identification of larger types of weapons, excluding small arms, and only if those are out on open terrain and not stored in buildings or well camouflaged; details of weapons that provide clues about their origin may be difficult or impossible to discern; it may be impossible to determine if identified weapons have been transferred to an entity in the country where the weapons are sighted or are still owned and operated by another country; satellite imagery by itself will not reveal the supplier of the weapons and conclusions about the time of delivery have to be made carefully; satellite imagery may confirm a minimum number of weapons that have been delivered, but not the total number as more weapons may be out of the satellites' view.

Considering the limitations of satellite imagery and the relatively high costs of investments in this technology, their use in mapping arms flows appears to be less cost effective than using available resources to continue and improve the use of sources.

17 The possibilities of monitoring arms in conflict areas were demonstrated by individuals collecting and analysing images from the Internet as a hobby. See for example: 'How Brown Moses exposed Syrian arms trafficking from his front room', The Guardian, 21 March 2013. The blog was published on <http://brown-moses.blogspot.se>.

18 See e.g.: 'Introduction to remote sensing of cross-border conflicts: a guide for analysts', Advance Science, Serving Society, 2015.

5 Case studies of arms flows to conflict areas

This section illustrates the sources and methods and their limitations described above by describing some of the attempts to monitor and assess arms flows to four conflict zones. In all of these cases such assessments can be aimed at improving the understanding of the impact of arms flows in general. In addition, specific objectives can be formulated for each case. The cases highlight that multi-source case studies are available for only a few conflicts and that knowledge on arms flows to conflict zones remains fragmented.

Arms flows to Syria

| | |
|---|--|
| <p>Possible objectives for research on arms flows</p> | <ul style="list-style-type: none"> - Gain insights into weapons flows to the Syrian Government and the armed opposition in the conflict. - Review and develop US and European military aid policies towards the Syrian opposition and to Iraq from where weapons spilled over into the Syrian conflict. - Understand the role of regional states in the conflict and how they acquire arms in Europe to support armed groups in Syria, possibly in contravention of the arms export regulation of the states from which the weapons originate. - Understand how the Islamic State obtains arms, an organisation universally denounced as a terrorist organisation. |
| <p>Available assessments</p> | <ul style="list-style-type: none"> - Public knowledge of arms flows to the country since the start of the Syrian war in 2011 remains fragmented. - There is no single report, series of reports at regular intervals or database that provides an overview and analysis of arms flows to the conflict. |
| <p>Examples of available sources for a case study on arms flows to Syria</p> | <ul style="list-style-type: none"> - Government information from arms suppliers such as Russia and the US. - Images on social media. - UN panels on the implementation of the UN arms embargo on Iran and on Libya. - Official government reports of European states exporting arms to Saudi Arabia, the UAE and Qatar. - Documentation of weapons observed on location in Syria. |

The SIPRI arms transfers database contains information on the transfer of major arms to the Government of Syria in relative detail until about 2013. Deliveries of major arms from Russia, Syria's main supplier, were confirmed using statements from Russian officials and images from Syrian state TV. By 2014 the Syrian Government appeared to have halted the import of complete major weapons and little public evidence was

available of deliveries of, for example, ammunition, small arms and spare parts for existing weapons.¹⁹ Images posted on the Internet provided indications that Russian arms supplies continued to a certain degree. For example, such images indicated that at the beginning of 2017 Russia was stepping up deliveries of tanks and armoured vehicles to Syria.²⁰

Reports that Iran had become a supplier of arms to Syria were given credence by a UN panel of experts monitoring sanctions on Iran, after it had inspected two shipments of small arms and mortar ammunition intercepted in Turkey in 2011.²¹ However, the volume of Iranian arms supplies to the Syrian Government remains impossible to assess. Reports of interceptions of arms shipments and the analysis of images from Internet sources have provided insights into the origins of weapons used by Syrian rebel groups. However, there remains great uncertainty regarding the immediate suppliers and the volumes of the weapons involved.

A rare case of a detailed confirmation of one source of weapons assumed to be for armed groups in Syria occurred in 2012 when a UN panel of experts monitoring arms flows to and from Libya inspected a shipment of weapons originating from Libya that had been intercepted in Lebanon. However, the panel could not confirm for whom in Syria the shipment was intended.²²

Other information has provided substance to media reports that Saudi Arabia and the UAE were amongst the states that gave military aid to the rebels. A Swiss Government investigation established that Swiss-produced hand grenades in the possession of Syrian rebels – photographed by a journalist – came from a lot supplied to the UAE in 2004. A combination of an analysis of videos of Syrian rebels and their weapons posted on the internet and data about weapons being exported from Croatia to Jordan shortly before this were one clear indication of a source of supply for the rebels. Based on information from undisclosed sources it was reported that Saudi Arabia had financed

19 P.D. Wezeman, 'Arms transfers to Syria', SIPRI Yearbook 2013, Armaments, Disarmament and international security, Oxford University Press, 2013, pp. 269-271.

20 S. Mitzer, J. Oliemans, 'Replenishing the stocks: Russian deliveries of T-62Ms and BMP-1s reach Syria', Oryx Blog, 17 February 2017, <http://spioenkop.blogspot.se/search/label/Syria?updated-max=2017-02-28T22:16:00%2B02:00&max-results=20&start=9&by-date=false>.

21 United Nations, Security Council, Final Report of the Panel of Experts established pursuant to resolution 1929 (2010), S/2012/395, 12 June 2012, pp. 26, 64-65.

22 United Nations, Security Council, Final report of the Panel of Experts established pursuant to resolution 1973 (2011) concerning Libya, S/2013/99, 9 March 2013, 35-39.

these supplies.²³ Data from national arms export reports from several Central European states during 2012-2015 showed a steep increase in the exports of arms to Saudi Arabia. In combination with images of weapons produced in these Central European states being used by armed groups in Syria, this raised a strong suspicion that many of these weapons were intended to be diverted to armed groups in Syria, even if no final proof could be provided.²⁴

The flow of weapons to the Islamic State (IS) in Syria has been the subject of much discussion although no detailed assessment exists. Here field research can provide major insights as was shown by an investigation by a Conflict Armament Research team that documented weapons from IS stockpiles. It found Chinese-made rifles, Chinese, Iranian, Russian, and Sudanese ammunition, French or German-produced guided anti-tank missiles and weapons that originated from Iraqi armed forces stocks.²⁵ Although the actual chain of custody could not be determined, the results of the investigation supported the assessment that IS had sustained its military operations with captured weapons. Such data can also feed into the analysis of the risks of supplying arms to other armed groups in Syria and the armed forces of Iraq.

Arms flows to Turkey

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| Possible objectives for research on arms flows | <ul style="list-style-type: none"> - Gain insights into how weapons flows relate to conflicts between the Turkish Government and the Kurdistan Workers' Party (PKK) and to the attempted military coup of 2016 and the following repression of the political opposition. - Review European arms exports to Turkey. |
| Available assessments | <ul style="list-style-type: none"> - Public assessments of arms flows to the Turkish Government are available. - There is no public overview and analysis of arms flows to the PKK. |
| Examples of available sources for a case study on arms flows to Turkey | <ul style="list-style-type: none"> - SIPRI data and government reporting on arms supplies to the Turkish Government. - Images of PKK weapons on social media. |

Arms flows to the armed forces of Turkey, including those elements of the armed forces that rebelled in 2016, are recorded in detail and can be assessed on the basis of existing datasets. SIPRI data shows that Turkey increased its arms imports in the period 2007-2016 and that it has obtained a variety of major weapons from the US and a series of European countries. National export reports and Turkish submissions on arms imports

23 C.J. Chivers, E. Schmitt, 'Saudis step up help for rebels in Syria with Croatian arms', New York Times, 25 February 2013, <http://www.nytimes.com/2013/02/26/world/middleeast/in-shift-saudis-are-said-to-arm-rebels-in-syria.html>.

24 The articles are compiled on a dedicated website: <https://www.occrp.org/en/makingakilling/#saudis>.

25 'Islamic State Weapons in Kobane', Conflict Armament Research, April 2015.

to the United Nations Register on weapons confirm this assessment. In addition, the NISAT database shows that small arms have been exported to Turkey from a wide variety of countries.

In contrast, arms flows to the PKK are difficult to assess. There is no specific independent entity that investigates arms flows to the PKK, such as a UN panel. Public information about arms supplies to the PKK comes mainly from the Turkish military, which has reported that the arsenals of the PKK are becoming more sophisticated and now include guided anti-tank weapons and portable anti-aircraft missiles. It is primarily the war in Syria which has created opportunities for the PKK to acquire more powerful weapons.²⁶ However, assessments made by the Turkish armed forces can be considered biased and the reliability of the data and the analyses it provides can be questioned. There is currently no widely accepted and verifiable public assessment of arms flows to the PKK, for example based on extensive analyses of photos and videos that are available on the internet.

Arms flows to the conflict in Ukraine

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| Possible objectives for research on arms flows | - Map arms flows to Rebel forces in Eastern Ukraine to prove and assess the scope of the Russian role in the conflict in Eastern Ukraine. |
| Available assessments | - There is no single report providing an in-depth overview and assessment of arms flows related to the conflict in Eastern Ukraine. |
| Examples of available sources for a case study on arms flows to Ukraine | - Images of weapons used by the rebels published on social media or by governments. |

Since the start of the conflict Russia has been accused of supplying weapons to armed groups in Eastern Ukraine, and these accusations were important reasons for the US and the EU to impose sanctions on Russia. However, while the rebels are well equipped with weapons, claims of massive military aid from Russia are difficult to confirm on the basis of public and verifiable sources.²⁷

Using primarily film and photo materials from mainstream media and social media sources in Eastern Ukraine, weapons used by the rebels have been identified. However, armed groups have captured weapons from existing large Ukrainian arsenals. Due to their common history, weapons in those arsenals are generally of the same generic types

26 M. Gurcan, 'Ankara concerned by PKK's modernized arsenal', Al-Monitor, 27 January 2017, <https://www.al-monitor.com/pulse/originals/2017/01/turkey-pkk-diversifies-and-modernizes-arsenal.html>.

27 S.T. Wezeman, A Fleurant, A. Perlo-Freeman, P.D. Wezeman, 'The impact of the crisis in Ukraine on arms transfers', SIPRI Yearbook 2015, Armaments, Disarmament and International Security, Oxford University Press, 2015, pp. 75-85.

as those possessed by Russia.²⁸ In many cases it is therefore impossible to determine the origin of weapons identified in the hands of the rebel groups solely on the basis of images. However, some images have shown Russian-made weapons in Eastern Ukraine which are not known to have been exported to Ukraine or to any other country before 2014. This type of evidence lends credibility to the claims of Russian arms supplies to the rebels.²⁹ However, the risks related to the use of images were illustrated when Ukrainian parliamentarians tried to convince the US Senate that Russian troops were active in Ukraine by using images of Russian troops in Georgia in 2008.³⁰

The difficulty of determining the origin and time of delivery of weapons and whether they have actually been transferred is illustrated with the case of the evidence regarding the weapon used to shoot down the civilian airliner Malaysia Airlines MH-17 over Ukraine in July 2014. Based on a very large number of sources, including witness statements, intercepted telephone calls, images placed on social media and satellite imagery, an international criminal investigation team consisting of hundreds of investigators concluded that a BUK surface-to-air missile system was used from a site in Eastern Ukraine to shoot down MH-17 and that the system had been moved there from Russia shortly before this and moved back to Russia shortly afterwards. However, it remained unclear if Russian military or rebels operated the system.³¹

Arms flows to the conflict in Yemen

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| <p>Possible objectives for research on arms flows</p> | <ul style="list-style-type: none"> - Map arms flows to Rebel forces in Yemen to support the implementation of the relevant UN arms embargo. - Assess arms flows to states intervening in Yemen in the light of the regional rivalry between several states, in particular Saudi Arabia and Iran, the growing asymmetry in military capabilities in the Middle East and the increased use of military force by states in the region. - Review European arms exports to the states involved in the conflict in light of the major concerns about serious violations of international law committed by these states when using force in Yemen. |
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28 J. Ferguson, N.R. Jenzen-Jones, 'Raising Red Flags: An Examination of Arms and Munitions in the Ongoing Conflict in Ukraine', Armament Research Service (ARES) Research Report no. 3, ARES, November 2014.

29 S.T. Wezeman, A Fleurant, A. Perlo-Freeman, P.D. Wezeman, 'The impact of the crisis in Ukraine on arms transfers', SIPRI Yearbook 2015, Armaments, Disarmament and International Security, Oxford University Press, 2015, p. 84.

30 Mackey, R., 'Sifting Ukrainian fact from Ukrainian fiction', New York Times, 13 February 2015.

31 Presentation preliminary results criminal investigation MH17 28-09-2016, <https://www.om.nl/onderwerpen/mh17-vliegcramp/presentaties/presentation-joint/>.

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| Available assessments | <ul style="list-style-type: none"> - Public assessments of arms supplies to states intervening in Yemen are available. - Reports by the UN Panel on Yemen provide a rudimentary insight into arms flows to rebel forces. - There is no single report providing an in-depth overview and assessment of arms flows related to the conflict in Yemen. |
| Examples of available sources for a case study on arms flows to Yemen | <ul style="list-style-type: none"> - SIPRI data and government reporting on arms supplies to the states intervening in the conflict. - Images of weapons used by the rebels published on social media or by governments. |

The main source of reliable information on arms flows to the Yemeni rebels has been the annual reports of a UN panel of experts that was appointed in 2015 to monitor UN sanctions on the rebels, which includes an arms embargo.³² However, due to its limited resources the panel could not come to any firm conclusions about the origin of the weapons used by the rebels and even less about the volumes involved. It concluded that the main sources of arms for the rebels were large-scale seizures of arms from the Yemeni national stockpile and the small-scale capture of weapons in combat.³³ Mainly on the basis of the analysis of images of four batches of weapons seized by the Australian, French and US navies in the vicinity of Yemen, the panel concluded that these weapons were likely to have originated from Iran and were possibly intended for armed groups in Yemen. However, as the panel did not have physical access to the weapons and had not received sufficient details about the seized arms, in particular serial numbers, it could not determine the exact origins and the chain of custody of many of the weapons. Similar conclusions were drawn in a report by Conflict Armament Research, which assessed images of the same weapons investigated by the Panel of Experts.³⁴

The problems involved in assessing arms flows to the Yemeni rebels are also illustrated by the questions surrounding their use of ballistic missiles against targets in Saudi Arabia. Whereas the rebels claimed that they had developed and produced these missiles indigenously, this is widely perceived to be beyond their technological capacity.³⁵ Using images from media and social media sources the Saudi military pointed at similarities between the missiles and Iranian-produced ballistic missiles.³⁶ However, despite the naval and air blockades imposed on Yemen and the international efforts to

32 These are available at <https://www.un.org/sc/suborg/en/sanctions/2140>.

33 United Nations, Security Council, Final report of the Panel of Experts on Yemen, S/2017/81, 31 January 2017, pp. 25-32.

34 'Maritime interdictions of weapons supplies to Somalia and Yemen, Deciphering a link to Iran', Conflict Armament Research, London, November 2016.

35 J. Binnie, Ballistic persistence, Jane's Intelligence Review, August 2017.

36 G.A. Khan, 'Iran arming Houthis to attack Saudi Arabia, UAE', Arab News, 8 November 2017.

enforce the UN embargoes on arms supplies to Yemen and on arms exports by Iran no interception of shipments of missiles, missile components or technology from Iran to Yemen has been reported.

Available data from SIPRI and from government reporting on arms exports provides a comprehensive picture of arms flows to Saudi Arabia, the UAE and most of the other members of the coalition intervening in the conflict in Yemen. SIPRI data on the transfers of major weapons show a clear increase in the volume of arms imports by these countries in the period 2007-2016. During that period imports of advanced weapons significantly improved their military capability to undertake the combined air, land and sea operations that have taken place in Yemen.³⁷

37 P.D. Wezeman, 'Arms transfers to the Middle East and North Africa, and the military intervention in Yemen', SIPRI Yearbook 2016, Armaments, Disarmament and International Security, Oxford University Press, 2016, pp. 587-594.