



## Leveraging Geographic Information to Combat Wildlife Trafficking Workshop Summary<sup>1</sup>

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### Background

On October 23, 2017 the Stimson Center, United States Department of State, and Michigan State University co-hosted a workshop on leveraging geospatially-enabled information to combat wildlife trafficking, one of the largest illicit markets in the world. The workshop was designed to bring together non-governmental (NGO), U.S. Government (USG), and academic experts to enhance database standards for wildlife trafficking geoinformatics, including identifying types of geographic information that would help end-users be more effective in combating wildlife trafficking, key common denominators for geospatial information databases in transboundary contexts, and coping with conditions of data delivery. The intent was to adapt insights from this workshop to future regional workshops in southern and central Africa for practitioners working to combat wildlife trafficking in both a national and transboundary context. Approximately 55 individuals representing 11 NGOs, 4 universities, 6 federal agencies, 1 development bank, 2 private sector organizations, and 1 professional scientific society participated in the workshop. Three discussion-based panels were followed by an interactive exchange. Below is a summary of each panel, its affiliated discussion, and future points for consideration.

### Panel 1: What geospatially-enabled information would help end-users best combat wildlife trafficking?

This panel was designed to focus on the different types of geospatially-enabled information that end-users such as prosecutors, law enforcement authorities and NGO program officers *need* (vs. want, although that is important) in order to achieve their mission (e.g., arrests, forensic evidence, prosecutions, sentencing, monitoring and evaluation, intelligence fusion). Participants identified what information is foundationally useful for confronting the transboundary aspects of wildlife trafficking. Discussants detailed specific use cases where geospatially-enabled information was helpful, may not be necessary, could pose risks for individuals or communities, and why. The conversation focused on Africa although insights from other geographies underscored global commonalities. The anticipated outcome

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<sup>1</sup> The information presented herein represents a summary of the workshop, conducted under Chatham House Rules. This information does not necessarily represent the views of the United States Government, Henry L. Stimson Center, or Michigan State University. Funding for this workshop was provided by the Department of Fisheries & Wildlife at Michigan State University; the Stimson Center provided resources in-kind.

from this panel was for participants to have an enhanced understanding of a set of end-user needs for geospatially-enabled information and how needs vary across end-users.

Discussion during Panel 1:

- Affirmed the cross-sectoral utility of a simple, centralized, practical, and standardized geospatially-enabled database(s);
- Underscored the importance of incorporating built-in privacy, appropriate levels of anonymity, and security safeguards;
- Characterized how geospatially-enabled information about poaching is not equivalent to information about trafficking in its' utility for prosecutors;
- Confirmed a general need for a geospatially-enabled database to be platform and data agnostic;
- Identified a need to determine the level of comfort with classification levels for geospatially-enabled information because classified information may be of limited use to prosecutors;
- Delineated issues of safety and anonymity for (a) communities and community groups, and (b) endangered species when aggregating and sharing data through cloud-based or otherwise accessible systems; and
- Identified a strong need to build trust among data users and providers for transparency and data sharing.

Future points for consideration emerging from Panel 1 included:

- Some geospatially-enabled data that could be useful may not be being considered (e.g., geothermal data from campfires, wildlife population images from camera traps);
- Prosecutors benefit from detailed information on specific animal trafficking events by specific people and less from a group of people and a group of animals. They have a need for more information than just good locational data for dead animals;
- There seems to be a lack of consensus about what constitutes reasonable expectation(s) for the scale of data, speed of database updates, and extent of information sharing?
- Citizen science-generated data about wildlife trafficking could hold promise but currently lacks standardized and accepted mechanisms for vetting the source and verifying the data.

## Panel 2: How can we cope with “risky” data and conditions of delivery?

This panel was designed to focus on the different types of “risky” data and conditions of delivery (e.g., law enforcement sensitive, confidentiality, anonymity, proprietary data, not necessarily classified or intelligence-based) that different end-users need in order to combat wildlife trafficking. Summary data can be mapped and be extremely powerful, informative, and protect individuals and organizations if there are sufficient data points that provide anonymity. Participants identified existing efforts to protect sensitive geospatially-enabled information (e.g., the information itself and the individuals/organizations reporting the information). The anticipated outcome for this panel was for participants to have an enhanced understanding of the specific types of sensitivities and conditions of geographic information delivery that need to be addressed in a federated geospatial information database.

Discussion during Panel 2:

- Affirmed a lack of international brokers with sufficient trust to collate data (e.g., civil society weary of law enforcement-centric channels), balance the sensitivity of data, and protect organizations or sources;

- Confirmed a need for codified secure access channels between NGOs and governmental organizations for information sharing as well as a preference for unclassified data wherever available;
- Highlighted a strong yet currently underdeveloped avenue or role for civil society's participation and leadership as well as integrity testing and source vetting; and
- Recognized the potentially exceptional influence of host governments on information sharing about wildlife trafficking.

Future points for consideration emerging from Panel 2 included:

- Data quality varies in terms of informant bias, institutional bias, ability to be analyzed and disseminated;
- Coping with risky data is complicated by a lack of transparency among authoritative governments;
- There is no clear leader on this issue to date and leadership is challenged by the bottom up nature of data generation;
- Data protection agreements (e.g., NDAs or MOUs) can help “de-risk” data;
- Processes and methods for coping with risky data will only be effective if implemented well; and
- A code of ethics is needed to address issues related to “risky” data.

### Panel 3: What can be learned from other issues such as health, humanitarian crises, human rights, or convergent crimes?

This panel was designed to focus on how, when, and where other sectors and actors are attending to issues of leveraging geospatially-enabled information. Discussion reflected upon lessons learned from the successes and failures of other contexts including health, humanitarian crises, human rights, and other serious crimes that converge with wildlife trafficking (e.g., drug trafficking). Best practices for the wildlife trafficking sector may be built upon the broadest knowledge base possible. Highlighting convergence in problem definition, prevention, and response was illustrative. The anticipated outcomes of this panel were for participants to have an enhanced understanding about how, when, where, and what other actors are doing in other contexts to leverage and protect as needed geospatially-enabled information.

Discussion during Panel 3:

- Affirmed a general lack of database standards relevant to wildlife trafficking alongside a need for metadata standards that capture the diversity of the issue and are representative of different parts of society; and
- Identified commonalities across other fields relevant to wildlife trafficking, such as the iterative nature of constructing database standards to enhance interoperability, need for dedicated resources to cover overhead and coordination, and linking of programmatic planning with geospatially-enabled information.

Future points for consideration emerging from Panel 3 included:

- Database standards can be used to help assess the extent to which wildlife trafficking converges with other serious crimes (e.g., human, gun, and drug trafficking);
- Local law enforcement authorities and development bank representatives can provide valuable touchpoints for contextualizing database fields; and

- Humanitarian assistance, global health, and counterfeit medicine sectors have advanced thinking on the topic and can share lessons learned about process and usability of outcomes.

#### Panel 4: Identifying common database fields and metadata for geospatially-enabled information in a transboundary context?

This hands-on interactive exchange began the design process of a database by building upon earlier workshop sessions, the knowledge base, and extensive audience expertise to account for the best available data that satisfies end-user needs. In addition to conversing about database interoperability, structure, fields, definition, metadata, and location, participants considered data sensitivities and conditions for delivery. Participants were guided through a process of database construction in a platform agnostic way that is interoperable at local, regional, and transboundary scales. The anticipated outcome of this panel was for participants to have a baseline database structure that can be refined and revised in the African context and protect sensitivities. The database will demonstrate discipline in terms of the quality, quantity, accessibility, confidentiality, and sensitivity issues that were previously identified.

#### Discussion during Panel 4:

- Identified a suite of questions relevant to the creation of a geospatially-enabled information database to help combat wildlife trafficking, including:
  - How can we make little data big?
    - Collecting new data using spreadsheets, linking databases through common keys to enhance data integration, utilizing remotely sensed data
  - How can we accurately map law enforcement assets (i.e., blue force resources)?
  - What is the question respective end-users are looking to answer and what are their value propositions?
  - What are the shared issues across all of the end-user problem sets?
  - How can a database incorporate retrospective and prospective data?
  - Who isn't at the table that should be?
- Informed a baseline geospatially-enabled information database using markets as an exemplar (see Appendix)
  - As the baseline database was drafted, participants discussed the extent to which pre-existing formats from NGOs (e.g., SMART, TRAFFIC) could or should be incorporated.
  - Identify common geospatial base layers that describe the context of place such as roads, rivers, topography, boundaries.
  - Map the spatial characteristics of wildlife trafficking (see Appendix).
  - Develop standardized codes and common keys to link geospatial data to existing datasets and enhance interoperability of data.

#### Future Action

The closing conversation centered upon a need to identify a set of fundamental use cases in order to build out future iterations of a geospatially-enabled information database. Use cases could incorporate diverse human dimensions (e.g., gender, livelihood strategy, poverty, legal statutes, transboundary migration of wildlife) and organizational profiles. Participants reiterated the issues of metadata resolution and horizon scanning could be considered in future workshops. Uncertainty lingered about which agencies should and do have access and relevance to wildlife trafficking.

Appendix  
Draft geospatially-enabled information database  
Version 1.0 Exemplar: Markets

Data layers:

- Location of wildlife markets (points)
- Population data (Landsat – raster)
- Human geography
  - Language boundaries (polygon)
  - Racial boundaries (polygon)
- Administrative boundaries:
  - Villages (polygon)
    - Fields:
      - Employment status
      - Population
      - Ethnicity
      - Religion
      - # Men
      - # Women
      - Population under 18
      - Population over 18
  - Admin LVL 1 (polygon)
  - Admin LVL 2 (polygon)
  - Country (polygon)
- Species boundaries (polygon)
- Parks boundaries (polygon)
- Transportation
  - Roads (lines)
  - Highways (lines)
  - Cart trails (lines)
  - Railroads (lines)
  - Bridges (lines)
- Infrastructure
  - Pylons (lines)
  - Electricity lines (lines)
  - Fiber lines (lines)
  - Communication towers (point)
- Observation of a transaction (point)
- Observation of an arrest (point)
- Seizure incident (point)
  - Fields:
    - City
    - Longitude
    - Latitude
    - Place of Seizure
    - Seizure Date
    - Arrest

- Yes
- No
- Ammunition Headstamp
- Transport mode
- Carrier
- Species 1
- Scientific Name 1
- Species 2
- Scientific Name 2
- Origin Country
- Destination country
- Seizure Country
- Method of seizure
- Intended Final Market
- Year of seizure
- Contraband Description
- Quantity
- Value(USD)