Data and Information Management Basics

Rachel Yales & Heather Leson
The Data Revolution is here.
Are we Data Ready?
Data can lead to:

- Information
- Knowledge
- Decisions
- Evidence
Data is part of our Leadership

IFRC is the Secretariat, National Societies, and volunteers.

We aim to be a data-driven organization making evidence-based decisions. It is cited in our 2020 strategy.
Data Types

**Community/Citizen**
- SMS/Mobile data
- Email
- Surveys
- Social Media (WhatsApp, Facebook, Twitter, Instagram)
- Multimedia (photos, video, VR)

**Government**
- Census/Population
- Statistics
- Infrastructure
- Finance/Budgets/Spending
- Companies/Land Ownership
- Pollution Index/Water Quality

**Physical**
- Geographical
- Infrastructure

**Aerial/Satellite**
- Satellite
- Aerial/UAV
- Balloon Mapping

**Sensor/New Tech**
- Biometric
- Genetic (Crispr)
- Movement
- Meteorology
- Bitcoin
From Data to Information

1. Data is everywhere.
2. Data is naturally messy and lacks sense.
3. Data can often be structured and processed.
4. Information is data that makes sense.
From Data to Information

**Data** must be interpreted, processed, analysed, or presented to become **Informative**.
From Chaotic Data
... to processing and organizing the data...

<table>
<thead>
<tr>
<th>Feedback Reference</th>
<th>Site where the feedback was received</th>
<th>Date feedback received</th>
<th>Gender for face to face interaction and when the person submitting the feedback notes it on the feedback form</th>
<th>Language used to express the feedback by the person submitting it</th>
<th>Channel of feedback reception</th>
<th>Feedback type: classify the feedback according to its content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sector which is the sector of intervention the feedback is referring</td>
<td>Scope: classify the feedback</td>
<td>Details of feedback: transcribe the feedback received as literally as possible and provide any other explanation that could facilitate its content</td>
<td>Grade of Priority/Sensitivity: level the priority to be agreed between the CEA focal and the RC site coordinator/site officer</td>
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International Federation of Red Cross and Red Crescent Societies
Fédération internationale des Sociétés de la Croix-Rouge et du Croissant-Rouge
Federación Internacional de Sociedades de la Cruz Roja y de la Media Luna Roja
الاتحاد الدولي لجمعيات الصليب الأحمر والهلال الأحمر

DATA PLAYBOOK: SLIDEEDECK 9
... to turning it into ‘information’...
Data-literate is not the same as data-skilled

“A data-literate organisation is one that shares a culture of data and a strong vision of the future. Most people invested in this vision will have no analytic interaction with data and may never need to.”*

*Source: Open Data Institute
What is Data Literacy?

“Data Literacy includes the skills, knowledge, attitudes, and social structures required for different populations to use data.”*

Humanitarian Information Managers (IMs) are often very data-skilled. How can we build an ecosystem of data ready colleagues?

*Source: School of Data
Potential benefits of focusing on Data literacy

- Teamwork / Collaboration
- Increased Accountability/Transparency
- Organizational Effectiveness (reuse, decrease of duplication)
- Financial improvements
- Competencies / Skills
What does data literacy mean for me?

<table>
<thead>
<tr>
<th>Role</th>
<th>Task</th>
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<tbody>
<tr>
<td>IM/Operations/PMER/Health</td>
<td>Deliver projects with information products/Assess project and programme delivery</td>
</tr>
<tr>
<td>Marketing Communications</td>
<td>Excellent data/analysis, narrative for storytelling, Brand and fundraising</td>
</tr>
<tr>
<td>IT</td>
<td>Assess and support data products/tools, provide infrastructure</td>
</tr>
<tr>
<td>Training</td>
<td>Provide e-learning, workshops and technical training</td>
</tr>
<tr>
<td>Manager</td>
<td>Strategic planning, staff development, organization development</td>
</tr>
<tr>
<td>Community served</td>
<td>Provide data, obtain help/services, get feedback</td>
</tr>
</tbody>
</table>
Data Pipeline

When we talk about “data”, people often focus on the *skills, tools* and the *process* steps for delivery of data products like a “dataset.”

The ‘Data Pipeline’* is an example of data ready skills. We all have varying levels of know-how.

*Source: School of Data

Graphic Source: School of Data
Humanitarian Data Teams: Supporting Skills

**Humanitarian Business**
- Cluster coordination
- Assessments
- Operational planning
- Logistics/Roster Management
- Disaster Risk Reduction
- Response preparedness
- Disaster relief/Recovery
- Thematic Areas of Focus
- Health, Gender and Social Inclusion

**Network**
- Clients
- Humanitarian agencies
- Development agencies
- Access to skilled people, information managers, database managers, data analysts
- Businesses
- Investors, sponsors and donors

**Business Skills**
- Leadership
- Strategic business planning
- Marketing & Sales
- Customer relations
- People management & HR
- Administration
- Public speaking
- Problem resolution
- Finance and accounting skills
- Delegating tasks
- Motivating team

**Soft Skills**
- Strategic, proactive, creative, innovative and collaborative
- Curious about data
- Influence without authority
- Problem solver
- Hacker /Maker mindset
Humanitarian Data Teams: Technical Skills

Math and Statistics
- Machine learning
- Statistical modeling
- Supervised learning & Unsupervised learning
- Statistical computing (e.g. R)
- Relational algebra

Data Management
- Data modelling
- Data collection
- Data refinement and cleaning
- Database, SQL and NOSQL
- Parallel databases and parallel processing
- Open Data standards
- API's
- Hadoop and Hive/Pig

Information Management
- GIS & Mapping
- Survey methodology
- Data analysis
- Finding & using datasets

Programming
- Computer science fundamentals
- Scripting language (i.e. Python, javascript)
- Filtering scripts (i.e. D3.js)
- Web development
- Experience with xaaS like AWS

Communications and Visualization
- Story telling skills
- Translate data-driven insights into decisions and actions
- Interactive dashboards
- Infographics
- Visual art design
- Knowledge of visualisation tools like Tableau, Adobe toolkit
## About the Data Literacy Program

<table>
<thead>
<tr>
<th>1. Connect</th>
<th>2. Learn</th>
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<tr>
<td>We are connecting the data curious and the data ready across the Secretariat and National Societies.</td>
<td>The Data Literacy program is creating learning spaces via skillshares, workshops and webinars.</td>
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<table>
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<th>3. Create</th>
<th>4. Measure &amp; Impact</th>
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<td>Together we are creating sessions, guides, policies, checklists and modules to work with existing programs and projects.</td>
<td>We are assessing metrics for data readiness and collecting impacting examples.</td>
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How can we prove “Data Readiness?”

We measure many things at IFRC. How Might Data Readiness measurements be incorporated into existing frameworks:

- PMER/MEAL
- Surge/IM
- ICT Health Check/Digital Divide
- OCAC/BOCA
- Program Planning
- Competencies
## Data Literacy Menu

<table>
<thead>
<tr>
<th>1. Connect</th>
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<tbody>
<tr>
<td>A. Informal Data Working Group</td>
<td>A. Skillshare sessions</td>
</tr>
<tr>
<td>B. Local data Stories</td>
<td>B. Build with existing Curriculum inside RCRC</td>
</tr>
<tr>
<td>C. Ecosystem Map</td>
<td>C. Connect with other Data Educators</td>
</tr>
<tr>
<td>D. Data Simulations</td>
<td>D. Excel around the World</td>
</tr>
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<tr>
<td>A. Data Playbook: templates, checklists, session design, scenarios, and best practices</td>
<td>A. Responsible Data Policy/Guidance</td>
</tr>
<tr>
<td></td>
<td>B. Data Readiness Measurement/Competencies</td>
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The Future of Data

“The full exploitation of humanitarian data sources has the potential to improve the way crises are forecasted, monitored and addressed. Proper management of data could drastically increase the impact and timeliness of humanitarian assistance and protection activities, such as identifying the needs of affected populations or distributing life-saving resources. But the path ahead is rocky and complex.”

“...the humanitarian sector has yet to produce the policy, strategies and governance change that the data buzz has promised. Few organizations have truly embraced and incorporated data at the core of their programming or professional development activities.”
THANK YOU

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