Geospatial data & analysis solutions for humanitarian action

Building blocks for UNICEF GeoHub

UNICEF DAPM, Data Use Unit

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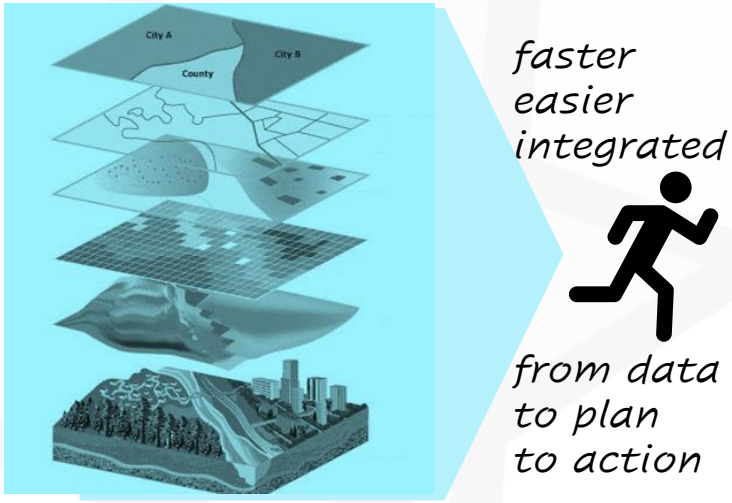
WHY?

should we invest
in geospatial data & analysis resources
for humanitarian action?



To better and more quickly identify **who is at risk or affected by which shocks and stresses and where** so we can advocate and programme with better focus and more quickly.

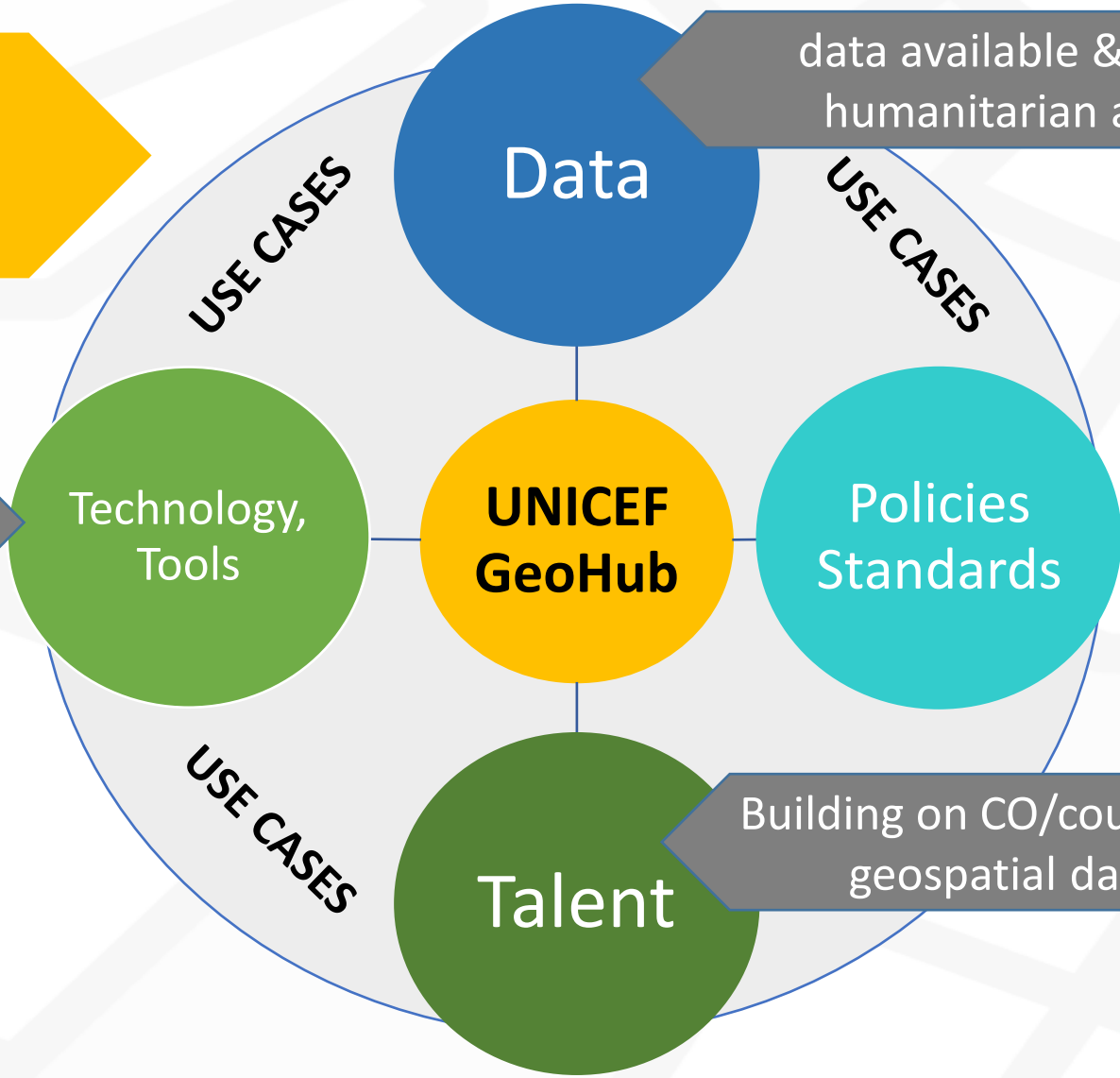
For example:

If seasonal flooding is predicted in country 'X', are we equipped to easily and quickly identify how many children will be affected, where and with what existing vulnerabilities and child-focused services? If not, how much time are we losing before decisions and action?

If we are advocating and developing global or regional strategies to accelerate learning, can we quickly and easily estimate how many school-aged children or out-of-school children are affected by conflict (and by what nature of conflict, with different contexts affecting acceleration strategies)?

UNICEF GeoHub
Integrating humanitarian data needs

Same building blocks driven by priority humanitarian use cases



OBJECTIVE
Humanitarian component of the GeoHub

Build global level resources for geospatial data solutions to support humanitarian action for children

… start small in first phase, focus on UNICEF niche

… focusing first on solutions for preparedness and early response

… building up UNICEF capacities AND contributing to geo-spatial data analysis and its use as a public good, bringing focus on children

Workplan overview: Humanitarian components of the GeoHub

Understand and prioritize use cases

- **Inventory of geospatial use cases** (country/regional/global)
- **Matrix of priority user questions** for top use cases

Develop & test selected use cases

- Country collaboration on short-term preparedness & immediate response
- Advocacy estimates on disaster and conflict affected/at risk populations
- Geospatial analysis for Children's Climate Vulnerability Index

Develop GeoHub building blocks

- **Country profiles of geospatial data readiness/capacity** and humanitarian/risk context
- **Geospatial Data Catalog** of recommended geospatial data sets for priority use cases (global/regional data sets)
- **UNICEF Common Geospatial Data Repository**
- **Geospatial Analysis Platform**

Scope next steps

- Recommended priorities and strategies for next phase

Global/regional geospatial data sets identified feeding into risk analysis

Shocks / stresses

- Floods, Storm surge, Tropical cyclones (GAR 2015)
- Droughts (UNEP and FAO)
- Disaster Alerts (GDACS)
- Armed Conflict (ACLED and PRIO)
- Malaria (MalariaAtlas project and IHME)

Exposure

- Global gridded population datasets (WorldPop, GPW, GHSL, UNICEF Blue Raster)
- Country gridded population datasets (WorldPop, GRID3, Connectivity Lab HRSL)

Vulnerability

- Child poverty (MICS)
- MICS / DHS indicators
- Health/Nutrition/WASH indicators (IHME)
- Displacement (UNHCR, IOM DTM)
- Food security (IPC)
- HDI (globaldatalab)

Capacity

- Location of health centers (HOTOSM, Healthsites.io)
- Location of schools (Giga, HOTOSM)
- Access to health services (Africa) (WorldPop)
- Partner presence (UN Partner Portal; UNICEF Partnership Management Platform)
- UNICEF presence/capacity (Office locations; budget)

Sector expert inputs – from country sector user questions to data needs

Country focus
Preparedness and Response

Shocks and stresses

Floods / Cyclones / Droughts

User questions (general)

- Populations at risk
- Existing services/capacities
- Community engagement
- Logistics & access constraints

User questions (sectoral)

- derived from CCCs
- common across sectors + sector-specific questions

Geospatial data & analysis (inputs)

- Different datasets and sources according to needs/questions and disaster management cycle phase

	User Questions (General)	User Question (Sectoral / Detailed)	Geospatial data & analysis
Shocks and stresses	**1. Population at risk [or PIN$^{\Delta}$]** – specifically children, adolescents & women by age/status as relevant for specific sector services)	1.1 How many people are in areas prone to [or actually affected by$^{\Delta}$] specific shocks and stresses and where, including subset of population displaced?	*Specified datasets*
		1.2 How many and who have specific heightened vulnerabilities shaping immediate response and where?	*Specified datasets*
	2. Availability and accessibility of existing services/capacities to engage for preparedness and response -- geolocation of facilities, staffing, supplies – and gaps	2.1 How many facilities [and functioning vs disrupted facilities$^{\Delta}$] are providing basic sector services to the population at risk [PINs$^{\Delta}$] and where?	*Specified datasets*
		2.2.a What is the accessibility of (estimated travel time) to each facility by zone and which areas have a significant increase in travel time to the nearest functional facility post-shock$^{\Delta}$? 2.2.b Which zones/settlements have lost timely access to basic services [post-shock$^{\Delta}$] due to damage to/disruptions of transportation networks and/or damage to/disruption of services of facilities	*Specified datasets*
		2.3 Where can stockpiles be increased for preparedness [response$^{\Delta}$] warehouses?	*Specified datasets*
	3. Community engagement capacities for behavioural and social change ***Cross-sector***	3.1 Where are CE Partnership networks?	*Specified datasets*
		3.2 What is the communications channels coverage and where?	
	4. General logistics access routes/ constraints shaping response (location & design)	4.1 Where are existing and [disruptions in$^{\Delta}$] road/transport networks? (derived through geospatial analysis/post-crisis assessment)	*Specified datasets*

Process going forward