



Area-based risk assessments

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ABOUT IMPACT



Swiss non profit humanitarian research organisation (Geneva-based), founded in 2010



Applied research to support better decision-making by aid actor



Data collection and analysis



Partnerships



Capacity building



ACTED = sister organisation

→ Synergies in the field / Logistics capacity

VISION

To act as a **catalyst for change** of aid practices and policies in order to sustainably impact individuals and their communities.

SHAPING PRACTICES
INFLUENCING
POLICIES
IMPACTING LIVES

MISSION

To enable better and more effective decision-making **by generating and promoting knowledge, tools and best-practices** for humanitarian and development stakeholders.

IMPACT Contribution to Sendai Framework

The Sendai Framework for Disaster Risk Reduction 2015-2030



Problem statement and solution

Humanitarian response is not risk-informed, Especially at a local level



Fragile states often lacking resources and capacity to prepare and respond to disasters



Data on community vulnerabilities and capacities is missing

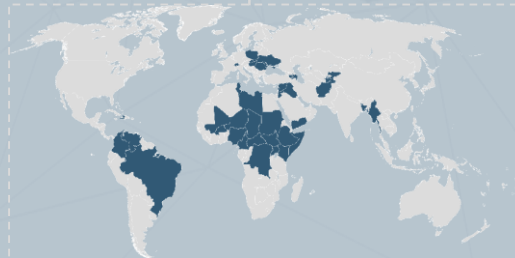
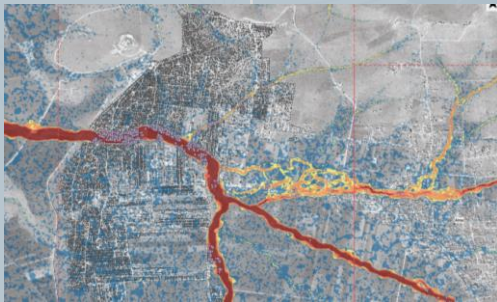


IMAPCT has an expertise in hazard and risk analysis in the granular level by using remote sensing and GIS technologies

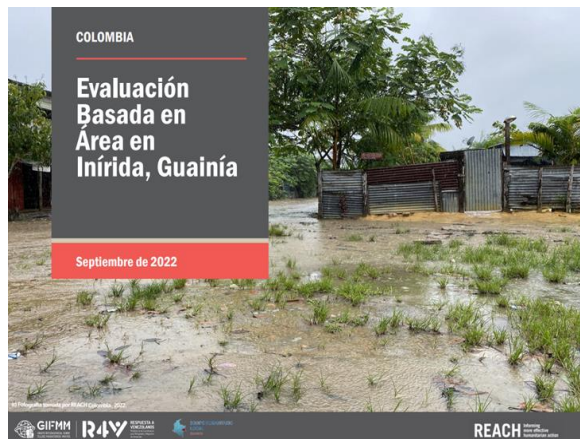
IMAPCT has an extensive field presence in fragile states, most of each are ranked being at very high or high level of risk and vulnerable to climate change

[Of the top 15 countries most vulnerable to climate change, 12 had a Humanitarian Response Plan (HRP) in 2022 (OCHA, ND-GAIN)]

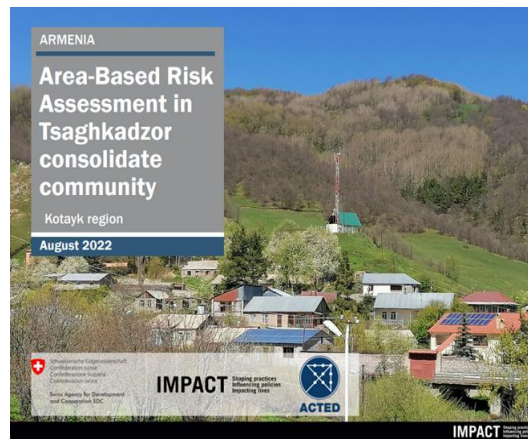
IMAPCT has an expertise in primary data collection on vulnerability on a local level, even in a hard-to-reach areas



Variations of DRR Outputs



ABA with risk analysis section



Multi hazard Area-Based Risk Assessment



Single hazard risk assessment

Area-based Risk Assessment (ABRA)

Mariupolskyi raion



Localized



Participatory



Evidence-Based



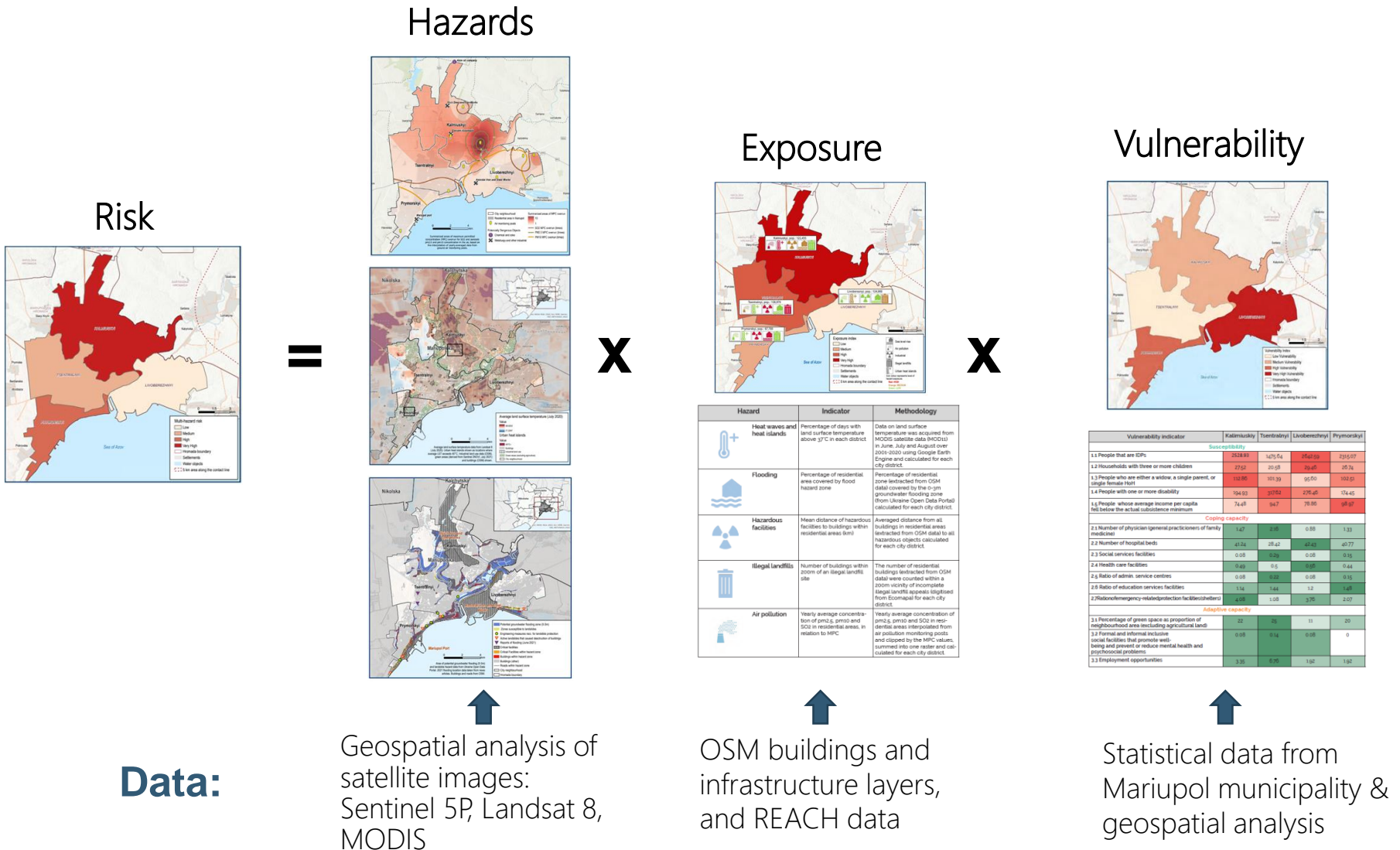
Multi-Hazard/
Multi-Sector






Risk methodology

For risk analysis IMPACT is using the **World Risk Index** approach:



ABRA Methodology



| Hazard | Indicator | Methodology |
|---|--|---|
|  Heat waves and heat islands | Percentage of days with land surface temperature above 37°C in each district | Data on land surface temperature was acquired from MODIS satellite data (MOD11) in June, July and August over 2001-2020 using Google Earth Engine and calculated for each city district |
|  Flooding | Percentage of residential area covered by flood hazard zone | Percentage of residential zone indicated from DSM data covered by the 0-1m groundwater flooding zone (from Ukraine Open Data Portal) calculated for each city district |
|  Hazardous facilities | Mean distance of hazardous facilities within residential areas (km) | Averaged distance from all buildings in residential areas indicated from OSM data to all hazardous objects calculated for each city district |
|  Illegal landfills | Number of buildings within 200m of an illegal landfill site | The number of residential buildings indicated from OSM data were counted within a 200m vicinity of inoperable illegal landfills specified from Ecomapal for each city district |
|  Air pollution | Yearly average concentration of pm2.5, pm10 and SO2 in residential areas, in relation to MFC | Yearly average concentration of pm2.5, pm10 and SO2 in residential areas interpolated from all pollution monitoring posts and clipped by the MFC values, summed into one result and calculated for each city district |

| Vulnerability indicator | Kalmirskiy | Tsentralnyj | Linobrosterij | Prymorzkyj |
|--|------------|-------------|---------------|------------|
| Subsistence | | | | |
| 1.1 People that are SPS | 2528.93 | 1475.54 | 2741.69 | 2395.07 |
| 1.2 Households with three or more children | 27.22 | 20.28 | 29.47 | 25.34 |
| 1.3 People who are either a widow, a single parent, or a single female head | 102.86 | 101.39 | 95.50 | 102.20 |
| 1.4 People with one or more disability | 154.93 | 127.52 | 278.25 | 174.45 |
| 1.6 People whose average income per capita is below the actual subsistence minimum | 74.48 | 94.7 | 78.80 | 88.87 |
| Coping capacity | | | | |
| 2.1 Number of physician (general practitioners of family medicine) | 1.47 | 1.08 | 0.88 | 1.33 |
| 2.2 Number of hospital beds | 43.54 | 28.42 | 40.43 | 40.77 |
| 2.3 Social services facilities | 0.08 | 0.29 | 0.08 | 0.15 |
| 2.4 Health care facilities | 0.49 | 0.5 | 0.08 | 0.44 |
| 2.6 Ratio of admin. service centres | 0.08 | 0.02 | 0.08 | 0.16 |
| 2.8 Ratio of education services facilities | 1.14 | 1.44 | 1.2 | 1.48 |
| 2.9 Non-emergency-related protection facilities/shelters | 4.08 | 1.08 | 3.75 | 2.07 |
| Adaptive capacity | | | | |
| 3.1 Percentage of green space as proportion of neighbourhood area (including agricultural land) | 0.21 | 0.26 | 0.11 | 0.20 |
| 3.2 Farms and informal institutions (social facilities that promote well-being and prevent or reduce mental health and psychological problems) | 0.08 | 0.14 | 0.08 | 0 |
| 3.3 Employment opportunities | 1.16 | 0.95 | 1.62 | 1.62 |



Innovation opportunities

PARTICIPATORY

URBAN

FORWARD-
LOOKING

Increase participatory research approach and facilitate **local DRR planning**

Design a tool specifically for **urban** multi-hazard risk assessment + MCR2030

Include climate-related **risk trends** and potential impact (**L&D**) for community

Thank you for your attention



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IMPACT Shaping practices
Influencing policies
Impacting lives
REACH PANDA AGORA