Resilience to radiation emergencies in war or armed conflict situations

C. Turcanu, Y. Tomkiv, R. Geysmans, A. Nagy

NERIS workshop 11/11/2024

Co-funded by the European Union

RRADEW

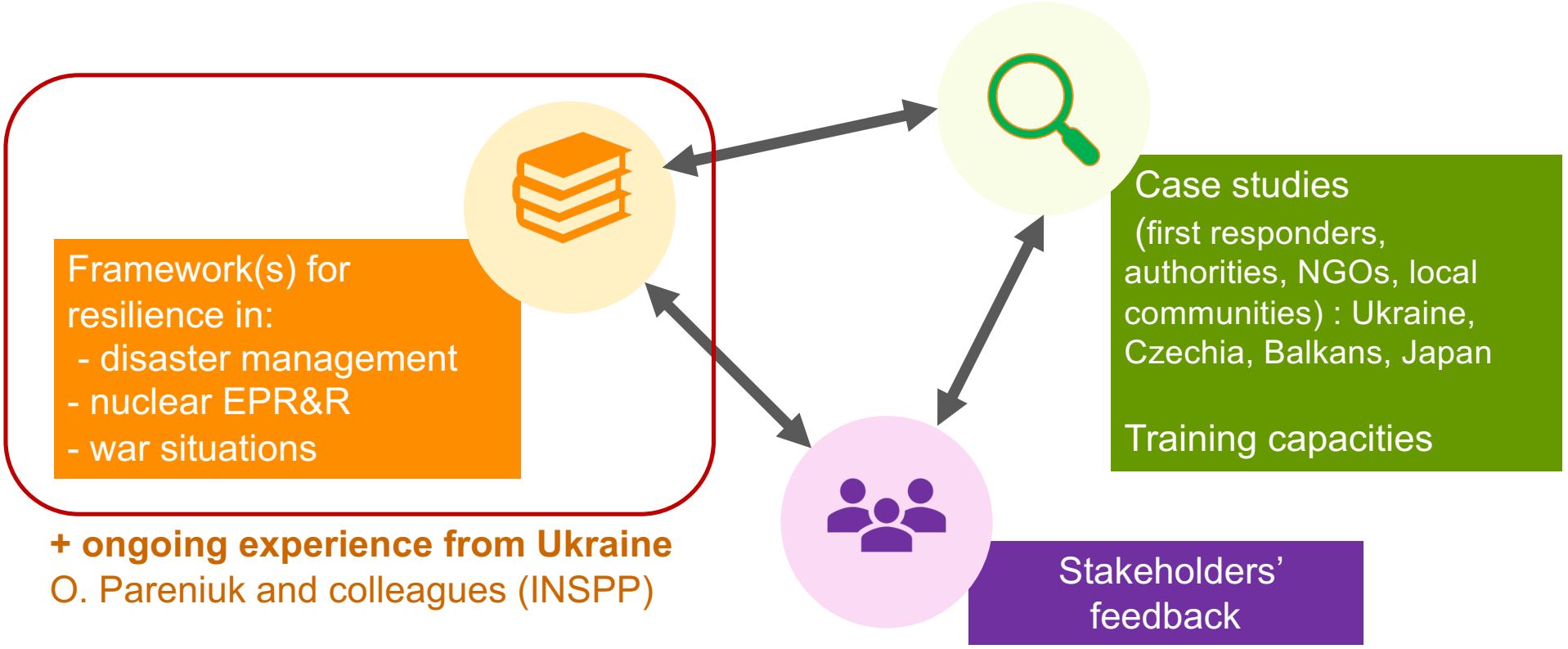
How to

- **characterise,**
- **assess** and
- **enhance resilience**

to radiation emergencies in armed conflicts situations?



How can we characterize resilience to radiation emergencies in armed conflict situations?



+ ongoing experience from Ukraine

O. Pareniuk and colleagues (INSPP)

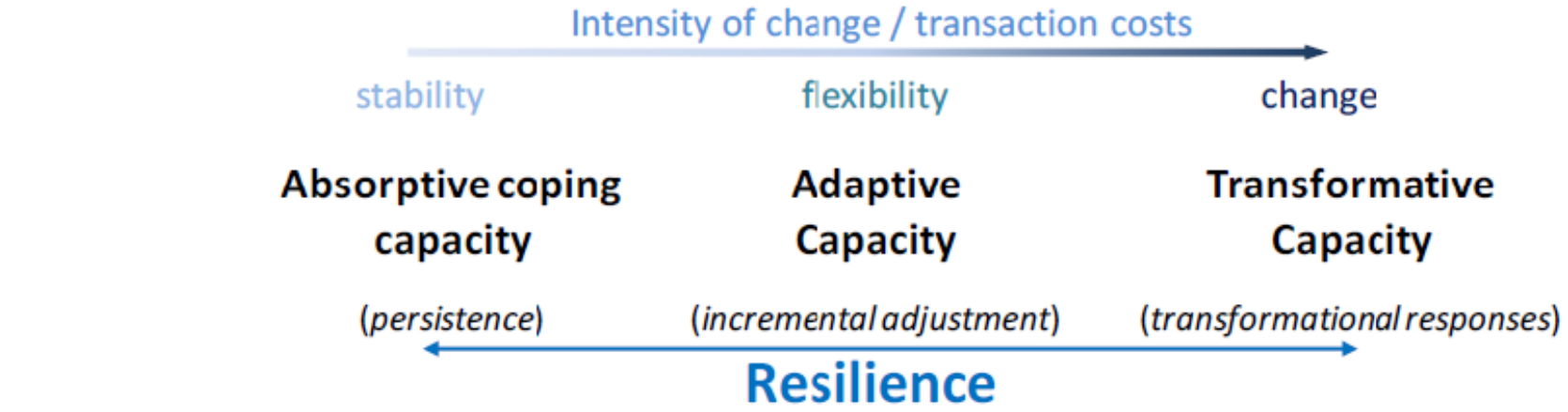
What is resilience?

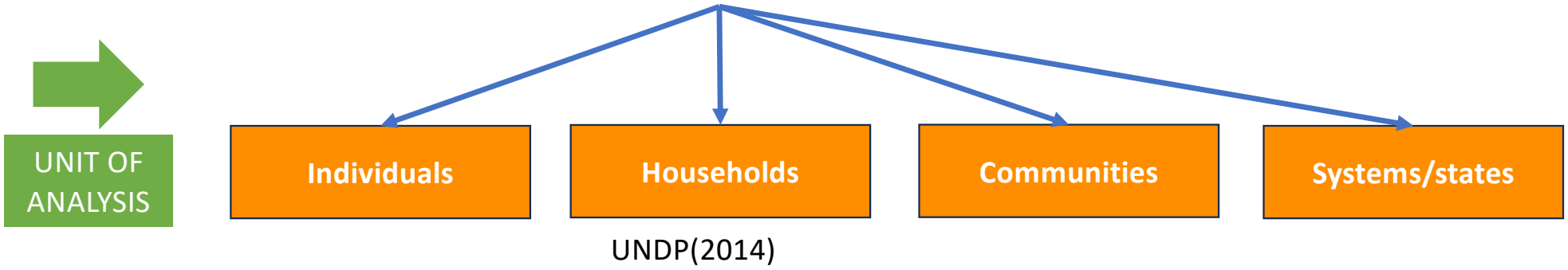
*"Transformative **process** of strengthening the capacity of [individuals], communities, institutions, and countries to resist, absorb, accommodate, **adapt to, transform, and recover** from the effects of [a radiation emergency] in a timely and efficient manner in the aftermath of shocks, stresses and change."*

UN office for Disaster Risk Reduction

UNDP(2014) https://www.preventionweb.net/publication/disaster-resilience-measurements-stocktaking-ongoing-efforts-developing-systems

Resilience capacities





UNDP(2014)

Literature on disaster resilience

- Increased focus in latest years
  - **7,614** results from Web of Science on **“disaster resilience” or “community resilience”** (search in March 2024)
    - **5,700 since 2018 !!**
    - **3,355** with **resilience in keywords**
      - 46 highly cited
      - 232 reviews
      - 54 refer to “war”
      - 21 contain “nuclear”
- Grey literature, e.g. (UN, FEMA, ..)



- Focus on “community resilience” AND (“war” OR “armed conflict*”)
- More comprehensive review for nuclear: “resilience” AND (“emergency” OR “accident”)
- Ongoing experience from Ukraine
- Scoping review for “resilience” in general

Data extraction

- Focus of resilience
- Definition
- Dimensions, criteria, indicators
- Vulnerable groups
- Ways to enhance resilience

Which elements of resilience are being assessed?



well-being

vulnerability

resilience capacities

disaster-related **shocks, losses and stress**

reaction to, and **recovery** from disasters

Resilience focus

- Individual resilience (e.g. citizens, medical staff)
- Community resilience
- NPP resilience
- EPR&R (system) resilience
- National resilience

Individual resilience

- Nuclear: focus on psychological resilience (maintain or regain mental health and wellbeing, adaptation)
  - Strong agency and responsibility on individuals
  - → need to broaden
- War literature: broader conceptualisations: e.g. “positive trajectory of adaptation” ; maintain “positive functioning or competence’ (Kimhi et al., 2012), but also global mental health, advocacy, women’s rights (e.g. Veronese et al 2021)
- Influencing factors (e.g. Veronese et al 2021; Eshel et al 2017), among others:
  - Human Security (feeling safe, psychophysical health); exposure to terror, (memories of) past experiences
  - Family Ties (nuclear and extended)
  - Psychosocial Resources (friendships, community protection, social support, sense of coherence, social integration, trust in political and public institutions,)
  - Individual Resources (sense of purpose, spirituality, education, work, activism and civic engagement, humor)
  - Motherhood (protection of children, maternal agency)
  - Patriotism

Ways to enhance individual resilience (examples)

Educational and culturally-sensitive interventions (also communities where exposure is anticipated)

Interventions focused on promotion of mental health (cf. WHO, 2020; OECD-NEA, 2024)

Community- and school-based programs promoting belongingness and collective efficacy

Mindfulness and narrative interventions

Urban green space for promoting quality of life and resilience

Strengths-based approaches in healthcare screening procedures (screening for assets and resources in addition to risk factors)

Women's' rights, freedom, and advocacy

Individual and community resilience are connected

- Individual resilience is influenced by interactions with the social and political environments (Sousa et al., 2013)
- Perceived community resilience as predictor for individual resilience (e.g. Eshel et al 2017)
- "Resilience portfolio": process of positive adaptation which uses individual, family, and community strengths (Kelmendi and Hamby, 2023).

Community Resilience

- Nuclear: strongly connected with (post-Fukushima) reconstruction and recovery
  - Focus on positive trajectory of adaptation
  - Key role of NGOs and NPOs to support a high level of citizens' participation (e.g. Vlachopoulou & Mizuta, 2018)
  - Need to critically reflect on the objectives of resilience: bouncing back, bouncing forward, or transformative resilience?
  - Sustainable development should be at the core of resilience building efforts
  - Need for reliable and actionable information
  - Integrating volunteers in EPR&R efforts (e.g. Raisio et al., 2023)
- War context
  - Broader context: humanitarian aid, cultural resilience, harnessing resources to sustain well-being
  - Highlights the key role of social capital, alongside human, political, …
  - Building on and strengthening community assets (e.g. library model) (Antczak & Gruszka 2023)
  - Dimensions: place attachment, collective efficacy, preparedness, economic stability, social cohesion

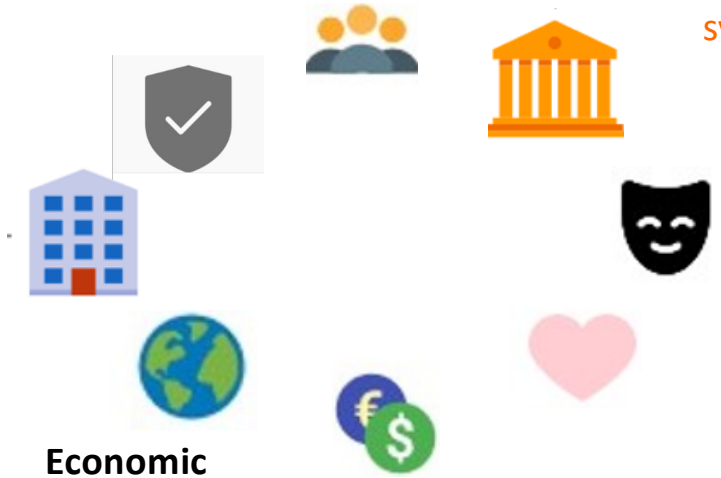
Baseline for community resilience

Access to specific resources facilitating protection, e.g. car, smartphone, iodine tablets, communication,..

Physical
Critical infrastructures
Logistic transport routes
Housing, habitat
Communication systems
Technical (early warning systems)

Environmental
Environmental protection
Ecological resources
Agricultural land and practices
Land use

Social
Networks & connections
Social processes
Embededness
Trust
Civic engagement
Civic and social organisations



Economic
Household income, income inequalities
Diversity of economic activity
Poverty level
Unemployment rate (total and women)
Material insurance

Political
Community engagement
Leadership, political power
Governance, Social inequalities
Institutional resources (first response bodies, (local) EPR&R plans, participation in disaster reduction plans, response systems)

Cultural
Norms
Perceptions and beliefs
Language
Religious affiliation

Human
Knowledge & skills
Health and wellbeing
Education
Age
Disabilities, long term care
Marital status, single parenting
Healthcare capacities
Health insurance
Access to critical services

Cutter et al, 2008; FEMA 2022; a.o.

Ways to enhance community resilience (selected)

- Collective action for problem-solving
- Voluntary associations, religious organizations, nonprofit organizations, access to advocacy groups
- Collaborative and contextually sensitive approaches
- Communication of knowledge relating to resilience practices
- Sharing of responsibilities
- Incorporating multi-actor perspectives and empower local actors, while providing centralized processes for detecting misalignments
- Mobilising resources, e.g. integrate refugees into local services
- Stimulating learning for local actors; capture and share local experiences
- Enhancing community support systems and connectedness (formal and informal)
- Economic diversification
- Adaptive management practices

4 key elements to consider when promoting resilience frameworks

(after Davoudi et al 2012)

RESPONSIBILITIES

The capacity of communities to adapt and re-organise is not a substitute for responsive and accountable governance

PURPOSE

The purpose of resilience policies and the desired alternative outcome should be the result of critical and inclusive reflection

BOUNDARIES

The scope of resilience is not value-free as it determines what is included and what is excluded from the analysis

POWER DYNAMICS

Any process of resilience building needs to consider power dynamics, justice and fairness

Resilience policies: cross cutting aspects

Protection, learning and adaptation

- Minimise mental, physical, social and economic negative impacts of a radiation emergency on people and communities
- Support a trajectory of positive adaptation and sustainable development, facilitating learning opportunities

Informed decision making and community empowerment

- Empower communities to adapt and self-reorganize
- Use and strengthen community capacities/assets and social processes for resilience building

Justice, fairness and inclusion

- Ensure equitable access to protection resources and critical services
- Align resilience policies with community values
- Do not shift responsibilities towards affected people or communities

Responsible governance

- Build capacities, reduce vulnerabilities and address social processes that may amplify the consequences of a radiation emergency
- Stimulate resilience thinking and learning across all EPR&R structure and actors

Holistic assessment of impacts of resilience policies

- Core RP ethical values
- Short term vs long term
- Individual vs Local resilience vs National resilience

RRADEW

Thank you for your attention



References

- UNDP(2014) UNDP 2014. Disaster Resilience Measurements - Stocktaking of Ongoing Efforts In Developing Systems For Measuring Resilience
- Cutter, S. L., Barnes, L., Berry, M., Burton, C., Evans, E., Tate, E., & Webb, J. (2008). A place-based model for understanding community resilience to natural disasters. Global environmental change, 18(4), 598-606.
- United Nations Office for Disaster Risk Reduction (2015). Sendai framework for disaster risk reduction 2015–2030. United Nations Office for Disaster Risk Reduction: Geneva: Switzerland.
- FEMA (2022). Community Resilience Indicator Analysis: Commonly Used Indicators from Peer-Reviewed Research: Updated for Research Published 2003-2021. UD Dept. Homeland Security
- Vlachopoulou, E. I., & Mizuta, D. D. (2018). Shellfish aquaculture and resilience: Leadership experiences from Kesennuma Bay, Japan. Marine Policy, 92, 111-119.
- Raisio, H. et al. (2023). Could virtual volunteerism enhance information resilience in a nuclear emergency? The potential role of disaster knowledge workers and virtual emergent groups. Radioprotection, 58(1), 11-18. Retrieved from https://doi.org/10.1051/radiopro/2023003
- Antczak, M., & Gruszka, Z. (2023). Library model of community resilience during the war. Activities of selected Polish academic libraries addressed to Ukrainians. The Journal of Academic Librarianship, 49(5), 102752.
- Westerdahl, K. (2013). Societal consequences of radioactive releases in March 2011 in Japan and implications for the resilience concept. Journal of Risk Research, 17, 1147-1160. doi:10.1080/13669877.2013.841732

References

- Kimhi, S., Hantman, S., Goroshit, M., Eshel, Y., & Zysberg, L. (2012). Elderly people coping with the aftermath of war: Resilience versus vulnerability. The American Journal of Geriatric Psychiatry, 20(5), 391-401.
- Sousa, C. A., Haj-Yahia, M. M., Feldman, G., & Lee, J. (2013). Individual and collective dimensions of resilience within political violence. Trauma, Violence, & Abuse, 14(3), 235-254. doi:10.1177/1524838013493520
- Kelmendi, K., & Hamby, S. (2023). Resilience After Trauma in Kosovo and Southeastern Europe: A Scoping Review. Trauma, violence & abuse, 24(4), 2333–2345. https://doi.org/10.1177/15248380221093693
- Veronese et al, 2021 , G., Cavazzoni, F., Russo, S., & Sousa, C. (2021). Risk and Protective Factors Among Palestinian Women Living in a Context of Prolonged Armed Conflict and Political Oppression. Journal of Interpersonal Violence, 36(19-20), 9299-9327. https://doi.org/10.1177/0886260519865960
- Eshel, Y., Kimhi, S., Lahad, M., & Leykin, D. (2017). Individual attributes as predictors of protective and risk components of resilience under continuing terror attacks: A longitudinal study. Personality and Individual Differences, 114, 160–166.
- Community capitals representation: F. Panzarella