

UNLOCKING THE POTENTIAL OF SEEA FOR DISASTER- RELATED STATISTICS

Michael Nagy (UNECE)

Alessandra La Notte (Senior consultant on NCA, Ispra)

Carl Obst (IDEEA Group)

Teerapong Praphotjanaporn (ESCAP)

Xuan Che (UNDRR)

Lisa Hartmann, Sally Janzen & Yvonne Walz (UNU-EHS)

32nd London Group Meeting, Guatemala



OVERVIEW OF THE PAPER

- The G-DRSF
- Why SEEA matters for disaster statistics
- Integrating G-DRSF and the SEEA
- Applications
- Methodological gaps and priorities
- Opportunities in the SEEA CF update process
- Future directions and recommendations

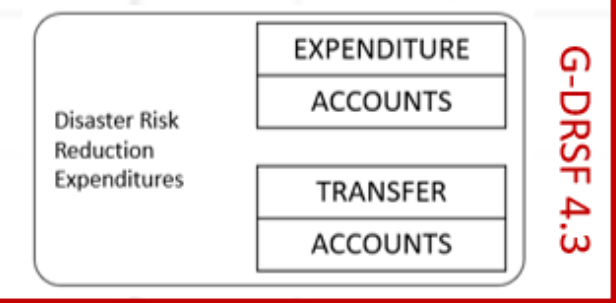
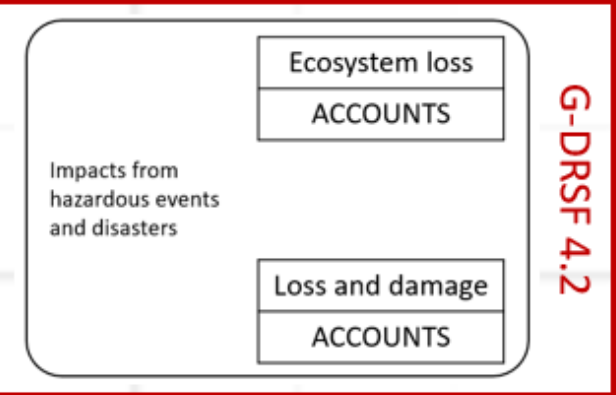
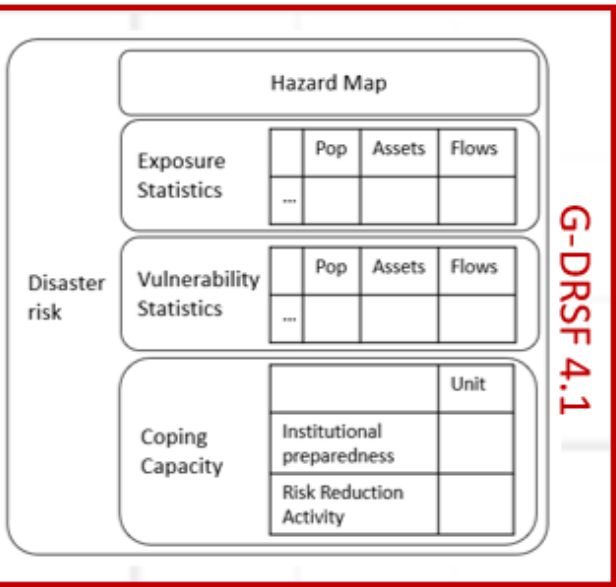
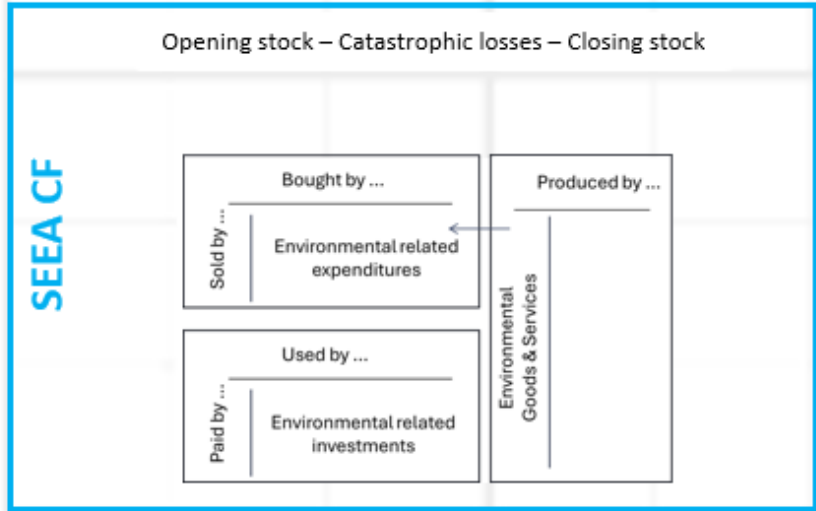
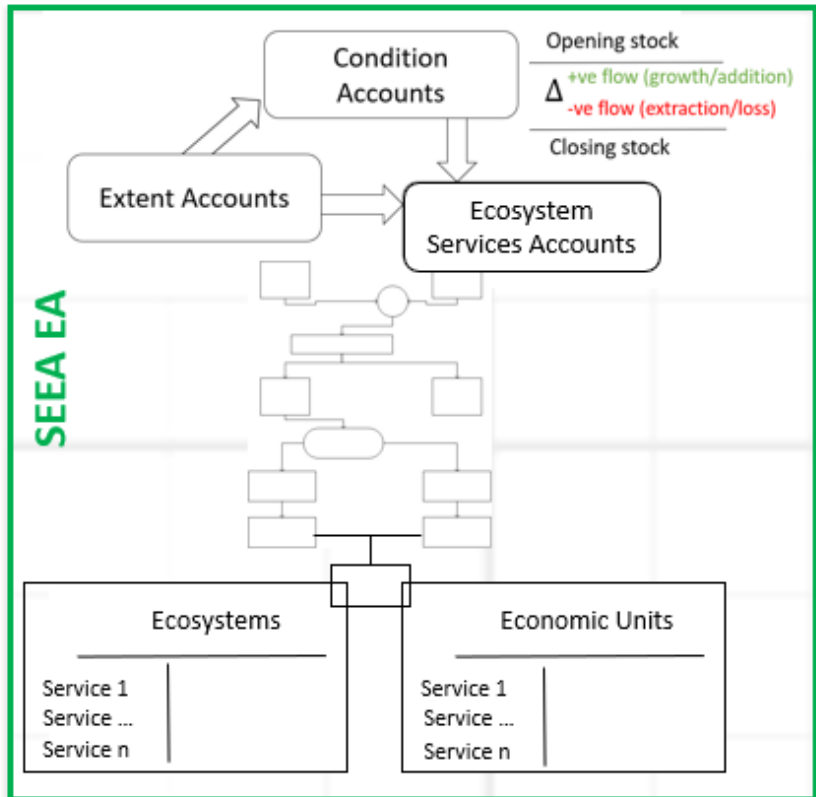
THE G-DRSF

- Global – Disaster Related Statistics Framework (G-DRSF) adopted by UNSC in March 2026
- G-DRSF has three key components:
 - **Risk:** Covering hazard exposure; vulnerability of populations, assets and flows; and coping capacity at the institutional, household and individual levels.
 - **Impacts:** Covering occurrence of hazardous events and disasters and impacts on populations, assets and flows.
 - **Disaster risk related (DRR) activity and expenditure:** Covering expenditure and transfers associated with DRR activities by the public and private sectors

POTENTIAL CONNECTIONS BETWEEN G-DRSF AND SEEA

- SEEA can provide data on the exposure and vulnerability of environmental and ecosystem assets and the flows of ecosystem services, particularly when spatial data can be overlaid with hazard maps and other geospatial information
- SEEA can provide data to support measurement of the impacts of hazardous events and disasters on environmental and ecosystem assets and the flows of ecosystem services that are used in post-disaster needs assessments (PDNAs) and other event-based impact assessments
- The accounting concepts and principles used in compiling Environmental Protection Expenditure Accounts (EPEA) and other environment-related transaction accounts under the SEEA-CF are applied in the compilation of DRR expenditure accounts.
- SEEA based information on ecosystem extent and condition, and spatial distribution of protective and mitigation-related services (e.g. coastal protection and flood mitigation) can be used to assess environmental characteristics that influence disaster risk to populations, assets and economic activities.

INTEGRATING THE CONNECTIONS



APPLICATIONS: DISASTER RISK – MOUNTAIN FORESTS AS PROTECTION, ++

- Mountain forests in steep, avalanche- and rockfall-prone terrain illustrate the role that ecosystem services can play in disaster risk.
- A well-stocked protective forest intercepts falling rock, slows snow movement and stabilises soil on slopes, directly reducing the hazard reaching settlements, roads and infrastructure below.
- Forests may provide materials for rebuilding or support mental wellbeing following a disaster, enhancing the coping capacities of communities.
- Within SEEA-EA the condition and ecosystem service accounts could record:
 - The protective and capacity-enhancing role of forests
 - The supply of regulating service such as mass-movement or erosion control
 - The supply of other services including provisioning and cultural services like recreation-related services.

APPLICATIONS: DISASTER IMPACTS – MOUNTAIN FORESTS AS CASUALTY

- The same mountain forest could be affected by a wildfire. Its ecosystem condition deteriorates and the root systems that stabilise soil are lost, measurably reducing its capacity to intercept future rockfall for years afterwards
- Such wildfires also alter the timber provision and the forest's recreational use with immediate site closures
- Under SEEA-EA, this would show as a deterioration in the ecosystem condition account and a corresponding reduction in the projected physical supply of the protective service and the recreation-related service, distinct from, but directly connected to, any timber losses recorded elsewhere in the accounts.
- The two effects compound each other: a fire-damaged protective forest leaves the same population and infrastructure more exposed to subsequent hazardous events until the forest recovers.
- Recording both the condition of the forest and the flow of its services within the same ecosystem account rather than in separate, disconnected data sets, is precisely the kind of consistent linkage that is needed.

APPLICATIONS: DISASTER RESTORATION AND RECOVERY

- The SEEA-CF already provides a directly relevant accounting structure through EPEA and other activity accounts thus recording expenditure on activities such as ecosystem restoration, coastal protection and sustainable land and water management.
- Some activities — for example, mangrove restoration or coastal protection — serve both an environmental and a DRR purpose so joint compilation options exist
- SEEA EA's condition accounts record positive as well as negative change in ecosystem condition, so that a “build back better” recovery trajectory following a disaster could, in principle, be tracked using the same accounting structure used to record the initial loss
- However, different ecosystems recover at very different speeds, from months to more than fifty years so progressive accounting for environmental outcomes is needed.

MEASUREMENT GAPS

- Measuring losses and damages
 - How to determine and apply the concept of “catastrophic losses”
 - Valuation of ecosystem degradation arising from disasters, especially regulating services
- Measuring risk
 - Techniques for overlaying hazard areas on ecosystem accounts, e.g. aligned spatial data
 - Linking baseline information from accounts to projections required in risk analysis
- Measuring DRR expenditures
 - Applying primary and secondary purpose criteria
 - Linking to climate change mitigation and adaptation expenditure accounts
- Cross-cutting issues
 - Framing resilience and “building back better” in accounting systems
 - Temporal and spatial alignment between regular accounts and discrete events

OPPORTUNITIES IN THE SEEA CF UPDATE PROCESS

- Issue A1 concerning the links between the SEEA-CF and the SEEA-EA
- Issue A4 concerning how SEEA-CF accounts can be made spatially explicit
- Issue A6 concerning strengthening the link to policy and thematic accounting
- Issue B6 concerning the development of pressure accounts
- Issue C2 concerning an integrated set of accounts for environmental activities
- Issue C4 concerning primary and secondary purpose:
- Issue C5 concerning climate mitigation and climate adaptation expenditure

MEASUREMENT PRIORITIES

- Near-term priorities are those that already have a vehicle for resolution through the SEEA-CF update:
 - For example, making land and ecosystem extent accounts more spatially explicit (Issue A4); and improvements in environmental activity accounts (Issues C2, C4 and C5).
- Medium-term priorities are conceptually tractable within the existing structure of SEEA-EA and SEEA-CF but require new methodological guidance rather than a change of framework:
 - For example, valuing disaster-induced environmental damage and ecosystem service losses; developing a repeatable methodology for overlaying population and asset data onto SEEA land and ecosystem accounts; aligning SEEA-based environmental and ecosystem loss information with UNDRR's DELTA Resilience system.
- Longer-term priorities require engagement that extends beyond the SEEA community itself:
 - For example, reconciling SEEA's period-based accounts with event-based disaster reporting; and connecting environmental-economic accounting with probabilistic disaster risk models.

FUTURE DIRECTIONS AND RECOMMENDATIONS

- Contributing to the SEEA-CF update
- Embedding SEEA more explicitly in G-DRSF implementation guidance
- Engaging with UNDRR's new DELTA Resilience system
- Supporting national implementation, including through more granular data than the standard SEEA accounts
- Conducting case studies – some suggestions
 - Disaggregating the SEEA-CF catastrophic-losses line by hazard type for a specific past event;
 - Valuing the loss of a specific regulating ecosystem service, such as flood control, following a real flood event
 - Applying primary- and secondary-purpose criteria to DRR expenditure in a country that already compiles EPEA
- Strengthening institutional collaboration including linking London Group to IAEG-DRS

QUESTIONS FOR THE LONDON GROUP

1. Does the London Group agree with the conceptual framing set out in chapter 3 – integrating the G-DRSF and SEEA by identifying transmission channels into existing accounts, rather than developing a separate accounting system – as a useful basis for further work?
2. Does the London Group agree with the methodological gaps identified in chapter 5, and with their prioritisation into near-, medium- and longer-term groups? Are there gaps the London Group considers should be added, reprioritised, or removed?
3. Does the London Group support the recommendation in chapter 7 that the SEEA-CF update process (Issues A4, C2, C4 and C5 in particular) explicitly incorporate disaster-related use cases, and if so, how might the disaster statistics community best contribute to the relevant task teams?
4. Does the London Group support pursuing one or more of the pilot studies proposed in chapter 7? Are there London Group members, or their national statistical offices, in a position to volunteer for such a pilot?
5. What is the London Group's view on proactively engaging with UNDRR's DELTA Resilience system to explore incorporating SEEA-based environmental and ecosystem information into its data model?
6. Does the London Group support establishing a joint contact group with the IAEG-DRS and UNDRR to coordinate the SEEA-CF update and the development of the G-DRSF implementation guidance going forward, along the lines proposed in chapter 7?



THANK YOU

