Report

Second Expert Forum for Producers and Users of Disaster-related Statistics

(Hybrid) 6-7-8 Sept 2022 from 12:00 to 4:00 PM Beirut Time
ESCWA-UN House, Beirut, Lebanon

Summary

The UNESCWA hosted the second Expert Forum in Beirut in collaboration with UNDRR, UNESCAP, UNECE, and UNSD. The forum aimed to strengthen and expand the global community of practice of producers and users of disaster-related statistics. The forum offered a platform for exchanging knowledge and learning lessons on how statistics and data were used for better informing and managing disasters. The participation included experts from NSOs, disaster-risk management authorities, international organizations, academia, NGOs, and the private sector, focusing on technology tools contributing to data and information on disaster risk reduction. ESCWA coordinates with regional and sub-regional partners and donors such as the Islamic Development Bank.

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I. Introduction

1. The second Expert Forum was hosted by UNESCWA in Beirut in 2022 in collaboration with UNDRR, UNESCAP, UNECE, and UNSD. This event is in line with ESCWA's commitment to support its member countries in responding to various disasters and their social and economic impacts, as well as to strengthen cooperation with the League of Arab States (LAS) and provide support to the Arab Coordination Mechanism on DRR, as reported in its fourth meeting and the First Arab Ministerial Meeting for DRR, both held in May 2022. ESCWA also coordinates with regional and sub-regional partners such as the UNDRR regional office in Cairo, GCC-Stat, the Arab Institute for Training and Research in Statistics (AITRS), the Organization of Islamic Countries (OIC), and donors such as the Islamic Development Bank (ISDB). The main objective of this Forum was to continue to strengthen and expand the global community of practice of producers and users of disaster-related statistics. The first Expert Forum, which was convened in 2021, was an important milestone in connecting different expert communities, including policy makers, analysts, disaster-risk managers, researchers, and statisticians using or producing disaster-related information. Specifically, the Forum contributed to the following: a) Offering a convening platform for users and producers to exchange knowledge and learn lessons from the last two years on pandemics, climate change, or conflict on how statistics and data were used for better informing and managing disasters; b) Informing about the current and future normative work of international expert groups; c) Following up on important areas of work identified in the first forum and identifying and recommending new areas for the IAEG research agenda. The participation included experts from NSOs, disaster-risk management authorities, and other related governmental agencies, international organizations, academia, NGOs, and the private sector, with a focus on technology tools contributing to data and information on disaster risk reduction.

II. Key Messages

A. Welcome and Opening Remarks, Keynote Speech

2. The UN plays a crucial role in bringing together stakeholders at global, regional, and national levels, while the Global Statistical Community is responsible for managing and monitoring timely, high-quality, and fit-for-purpose data from traditional and new sources, including the private sector and academia. The statistical community serves as a key player in ensuring data rigor and quality, and in sharing information among regions and countries to provide concrete evidence for effective disaster risk reduction policies. The Forum offers a unique opportunity for collaboration in providing timely and meaningful data to prevent or reduce disasters' impact on people, economies, and the planet. It is essential to pursue fundamentals and frontiers by integrating multiple data sources and new technologies, from private intent data to community insights, to create value in a multi-hazard approach. Reducing disaster risks and improving disaster response requires data governance and a grounded social contract for data based on values, equity, and trust. Finally, it is crucial to invest in our collective data readiness to inform decisions before disasters strike and engage local, national, and international stakeholders based on empirical data rather than assumptions.

B. Session 1

3. Despite the challenges in creating statistical and related data to support disaster risk management, organizations within the statistical data ecosystem are working towards the development of a unified global framework for disaster-related statistics, including hazard classification. This effort highlights the importance of sharing, partnerships, and collaboration. There is a pressing need to standardize statistical definitions related to disaster statistics and increase awareness and understanding of geospatial information

management standards, which facilitate the application of findable, accessible, interoperable, and reusable data principles. Disaster risk reduction (DRR) is at the core of sustainable development, and to address the many challenges while leaving no one behind, there is a need for more data from various sources to fill data gaps, understand loss and damages, and mitigate risk. This requires an all-of-society approach and greater collaboration at all levels, along with open data access and sharing arrangements. Sharing good practices, relevant examples, and repositories of data and applications is crucial for facilitating the creation, use, and dissemination of disaster-related statistics for decision-makers. Strengthening regional and sub-regional cooperation on capacity building through intergovernmental committees and networks of communities of practice is essential. Harnessing remote-sensed and Earth observation open data sources and integrating them with GIS and statistical data through international collaboration is required for better disaster management. The work of the Group on Earth Observations (GEO), regional commissions, DESA, and UNDRR is key in promoting, connecting, and supporting knowledge-sharing policies and practices.

C. Session 2

4. To effectively address health crises, it is crucial to develop Civil Registration and Vital Statistics (CRVS), including mortality registration, and utilize both official and unofficial data to assess mortality. It's important to move beyond indicators and examine comprehensive datasets, including qualitative information, and consider wider statistics beyond health statistics. Engaging across all institutional units can help better understand the impact of pandemics on various sub-sections of the population. Multi-sectorial coordination, including public-private partnerships and promoting channels of risk communication, is critical in pandemic response. Health should be treated as an all-government policy issue, aiming to establish a single set of trusted official statistics.

D. Session 3

5. The interconnectedness of climate change and disasters highlights the need for coherent statistical frameworks, concepts, and methodologies to inform climate and disaster risk reduction (DRR) actions. Despite challenges such as data availability, quality, capacity, and resources, countries have made progress on climate change and disaster-related statistics by utilizing existing global statistical frameworks and indicators. Addressing the transnational and sub-national nature of climate and disaster impacts is crucial, as is increasing the use of technology for official statistics production and communication. Multi-stakeholder and interdepartmental collaboration are key, and considering the spatial and temporal variations in climate is essential. Detecting anomalies, not just trends and averages, and understanding different geographic conditions at subnational levels highlights the importance of geospatial data that isn't limited to administrative boundaries, ensuring data is collected and presented at relevant scales such as coastlines, watersheds, or transboundary areas.

E. Session 4

6. Engaging local, particularly indigenous communities, is crucial for the downscaling of disaster risk reduction (DRR) related data. The use of disaggregated data and innovative data-centric technology is essential for stronger DRR and climate action. Enhancing the resilience of cities requires concerted efforts and investments in data analytics across multiple sectors at the local level. Recent approaches can overcome drawbacks in current interdependent critical infrastructure systems (CISs) cascading failure modelling and provide a foundation for resilience assessment of CISs. Access to free global datasets enables data downscaling to draw baselines for climate and disaster resilience in urban planning.

F. Session 5

7. A lack of rigorous evidence in conflict settings is often due to security, ethical, or practical challenges. Three ways to overcome these research complexities include traditional surveys, remote sensing data, and machine learning, which can help generate evidence and policy recommendations in such settings. Big data can play a role in transforming data into knowledge and supporting science-based policymaking, complementing official and traditional statistics without replacing them. It has the potential to assist policymakers in making effective decisions in conflict or crisis situations. There is a proposal to present the platform created for the "Big Data for Good" project by ESCWA with Jordan and Lebanon at the Arab Coordination Mechanism in May 2023 in Morocco, in coordination with LAS. This would explore the possibility of extending the project to requesting countries to inform sentiment data for policymaking in other Arab countries.

G. Session 6

8. Various multidimensional data platforms were showcased, including the Humanitarian Data Exchange/Humanitarian Risk Index, Score Data Cards, Humanitarian Data Exchange, ESCAP Risk and Resilience Portal, Innovative Satellite-based Data Services for Disaster Resilience & Digital Earth Partnership, RiX - Risk Information Exchange, DIEM: The role of data in informing food security and risk reduction interventions, and Risk Atlas. The multitude of platforms presented during the session highlights the diverse approaches to data analysis and the urgent need for partners to collaborate, avoiding confusion and duplication to accelerate momentum for the benefit of users and Member States. The UNDRR Risk Information Platform serves as a global online information exchange where public data is shared, facilitating collaboration with partners to support all data platforms. Cooperation with Statistics divisions and Commissions is crucial for obtaining comprehensive social, economic, and disaster statistics.

III. Summary of discussions

A. Session 1: Advancing Official Statistics for Informing Disaster Risk Reduction

9. In the first presentation, Robert Smith, a consultant to the IAEG, emphasized the need for a global framework for disaster-related statistics. This necessity arises from inconsistencies in existing international frameworks, a lack of acceptance for major measurement frameworks, and the increasing frequency, severity, and impacts of disasters. A global framework for disaster-related statistics offers numerous benefits, such as consistent concepts, definitions, and methods, as well as aligned measurements across institutions, countries, and regions. This would result in improved quality of disaster-related statistics. The proposed global framework aims to: 1) advocate for better statistics, 2) define key concepts, 3) identify the main producers and users of disaster-related statistics, 4) delineate and describe various types of disaster-related statistics, and 5) offer guidance on implementation.

10. The second presentation was delivered by Rikke Munk Hansen, Chief of Section for Economics & Environment Statistics at ESCAP, and Animesh Kumar, Head of the UNDRR Office in Bonn. The presentation summarized the progress and status of global efforts to advance disaster-related statistics. It was emphasized that the need for disaster-related statistics stems from challenges such as harmonizing measurements over time and across countries and regions, improving comparisons in both space and time, and creating interoperability between data platforms. A common understanding of disaster-related statistics is essential for informed planning and programming, ownership by national statistical systems, and the ability to assess disaster risk and progress in disaster risk reduction. A common statistical framework also

defines parameters for internationally comparable data and is crucial for comprehensive monitoring of the Sendai Framework and related SDGs. Furthermore, a common global framework for disaster-related statistics benefits various stakeholders by providing an evidence base for risk-informed development through national DRR policies and plans, fostering increased collaboration between National Disaster Management Offices and National Statistical Offices, enhancing monitoring of the Sendai Framework implementation, improving reporting on DRR-related indicators of Sustainable Development Goals, and assisting in disaster loss accounting and the development and maintenance of national disaster loss databases. The presenters shared the progress in disaster-related statistics, the timeline for the global platform for disaster risk reduction, and the outlook for 2022. They also outlined the steps required to establish a common global framework for disaster-related statistics, such as finalizing the research agenda, forming technical drafting teams, recruiting a chief technical adviser, developing issue papers, conducting a global consultation on the draft framework, linking hazard classification and other sectoral areas statistics with disaster-related statistics, continuing to strengthen the partnership between NSOs and NDMOs at the national level, and encouraging international organizations to provide platforms for the exchange of knowledge and experience at the national level.

11. The subsequent presentation was given by Kanza Ahmed, a Consultant in Global Public Health at UKHSA. The presentation focused on the Task Force on Measuring Hazardous Events and Disasters. Mrs. Ahmed began by providing background information on the UNDRR/ISC Hazard Definition and Classification and emphasized the importance of reviewing the new hazard classification by experts from National Statistical Systems. Additionally, she discussed the primary objective of the pilot, which was to gather feedback from a statistical perspective on the applicability of the reviewed hazard classification and its HIPs. Mrs. Ahmed outlined the methodology and steps involved in the task force's statistical review. She also shared the current status of the statistical review, the findings thus far, and the next steps to be taken.

12. The subsequent presentation featured a panel discussion on regional work concerning disaster-related statistics, involving representatives from ECE, ESCAP, ECLAC, ECA, and ESCWA. The main questions addressed during the discussion were: 1) the priorities of each regional commission working on disaster statistics; 2) the level of commitment from countries in each region to develop disaster-related statistics; 3) the coordination and networking between users and producers, as well as with UN entities and other regional organizations in the area; and 4) the main challenges faced in developing disaster statistics within each region. The slides presented during the discussion summarized the work completed, challenges encountered, commitments made, and mandates held by the United Nations Economic Commission for Europe (UNECE) Statistical Division, the Economic and Social Commission for Asia and the Pacific (ESCAP), the Economic Commission for Latin America and the Caribbean (ECLAC), the Economic Commission for Africa (ECA), and the Economic and Social Commission for West Asia (ESCWA) in the area of disaster-related statistics.

13. A presentation from SESRIC provided an overview of regional programs on disaster-related statistics. The OIC-2025 Program of Action, adopted in 2016, aims to enhance the capacities for disaster risk reduction and climate change mitigation and adaptation in OIC countries. This is due to the increasing frequency of natural disasters and their devastating impacts on the socio-economic development of these countries. High-quality disaster statistics are crucial in supporting the policy-making process for effectively managing disaster risks. As a training centre, SESRIC has started focusing on developing the capacities of National Statistical Offices in producing disaster-related statistics. In this regard, SESRIC organized a webinar in 2022, in collaboration with UNDRR, UNSD, UNESCAP, and UNESCWA, covering topics such as the nexus between official statistics and disaster risk education, the geospatial dimension in producing disaster-

related statistics, and national experiences of producing disaster-related statistics. SESRIC also hosts and regularly updates the OIC Stat Database and the COVID-19 Pandemic Database as data sources for their statistical publications, including the OIC Statistical Yearbook, OIC SWOT Outlook, and OIC Statistical Outlook. SESRIC emphasizes the importance of coordination among international, regional, and national institutions in producing high-quality disaster-related statistics.

14. A presentation by GCC-STAT discussed the mandate and current work of the Statistical Centre for the Cooperation Council for the Arab States of the Gulf. Additionally, the strategic plan for joint statistical work from 2021 to 2025 was highlighted. The presenters described the evolution of work on disaster statistics and the Statistical Centre's focus and steps regarding disaster-related statistics. Furthermore, a summary of the tasks carried out by the Cooperation Council for the Arab States of the Gulf Centre for Emergency Management was shared.

15. The following presentation was delivered by Mrs. Shahira Hassan Wehbe from the League of Arab States (LAS) on "The Location of Data and Statistics for Disaster Risk Reduction within the League of Arab States." Mrs. Wehbe discussed the current state of Arab statistical agencies and the mandate of the Department of Statistics and Databases of the League of Arab States. Moreover, she touched on the availability and location of data for disaster risk reduction in the Arab region and provided a list of recommendations to support data producers and enhance disaster risk reduction statistics in the region.

16. Mrs. Cecille Blake presented on UN-GGIM and Geo-enabling Disaster Risk Management. In her presentation, she emphasized the significance of geospatial information in DRM. Geospatial information plays a critical role in addressing global challenges by providing a foundation for various industries and sectors. It is an essential component in Disaster Risk Management, as it assists in hazard assessment, elements-at-risk mapping, disaster loss evaluation, vulnerability assessment, and risk assessment. Geospatial information and technology bridge the digital data gap across communities and sectors, making it a valuable resource for addressing global challenges. Mrs. Blake discussed some of the challenges in disaster-related statistics and highlighted data gaps. The presentation provided an overview of global development frameworks and UN-GGIM, along with nine strategic pathways. Additionally, she mentioned the SDG's Geospatial Roadmap, the GSGF Implementation Guide, and the DRR Inventory.

17. Mrs. Rui Kotani presented on GEO promoting open Earth Observation solutions for Disaster Risk. In her presentation, she provided a brief summary of the mission and objectives of the Group on Earth Observations (GEO). Additionally, Mrs. Kotani discussed the GEO work program and its alignment with the Sendai Framework, offering an example of GWP activities highlighted in the EO Risk Toolkit. Furthermore, she shared a methodology for integrating EO/GIS with statistics.

18. Mr. Luca Dell'Oro, Chief of the Disaster Risk Management and Climate Resilience Section at the United Nations Satellite Centre (UNOSAT), presented on UNOSAT's Humanitarian Rapid Mapping Service, which provides evidence-based information to support humanitarian assistance using satellite imagery and geospatial technologies. He gave an overview of UNOSAT's mission and the services it offers worldwide. Mr. Dell'Oro explained the satellite imagery analysis workflow in UNOSAT's rapid mapping service, from activation to data and product sharing mechanisms. He supported his presentation with examples from the Asian monsoon season and flooding in Pakistan.

19. Mr. Pedro Duce presented the experience of Mozambique in collecting, managing, and integrating statistics and geospatial data for disaster risk reduction. He provided a general context of the geography of Mozambique and the hazardous events that the country faces. He then highlighted the role of the National

Institute of Statistics and, more specifically, the role of the National Institute for Disaster Management in disaster-related statistics. In addition, Mr. Duce shared some examples of how they collect statistical data.

20. Mrs. Wafa Aboul Hosn presented a case study conducted by ESCWA on the use of remote sensing for flood monitoring and disaster management in local communities in the Nile Basin and coastal areas of Egypt. In the presentation, she discussed the socioeconomic and environmental challenges in Arab countries, the links between statistical and DRR communities, and the data sources for DRR and SDGs. Mrs. Aboul Hosn also provided a general overview of the Earth Observations for Floods Monitoring-ESCWA Google Earth Engine (GEE) Project, including the adopted methodology, sources, and sample results.

B. Session 2: Lessons Learned on Using Data to Save Lives During Pandemics

21. The first presentation in session 2 was given by Mr. Steve MacFeely, Director of Data and Analytics at WHO. The topic of the presentation was "Lessons Learned on Using Data to Save Lives During Pandemics". Mr. MacFeely shared the experience of COVID-19 and highlighted that excess mortality is a comprehensive measure of the total impact of a crisis as it takes into account deaths that can be directly and indirectly attributed to the crisis. The lesson learned from this experience was the importance of Civil Registration and Vital Statistics (CRVS) and mortality surveillance. There is a need to add value to both national and global statistics, especially in terms of excess mortality, where the importance of models and unofficial data is highlighted. Investment in "data infrastructure" is necessary, and having indicators alone is not sufficient; analytical capacity is essential. Finally, it is emphasized that health is a policy issue that requires involvement from all levels of government.

22. Mr. José Eduardo de la Torre presented on the topic of "COVID-19: A wake-up call to build resilience through the integration of better data". He discussed the importance of having data infrastructure that enables the geo-referencing of statistical information from various sources through geostatistical coding. This process ensures the planning, geographic coverage, and monitoring of national censuses such as economic, population, housing, and agricultural surveys at the national level. The use of geostatistical mapping has become a crucial reference tool for the public, private, and social sectors. Mr. de la Torre also discussed the links between statistical data and the grouping in the platform.

23. Ms. Kanza Ahmed presented a PowerPoint on using official data to understand the impact of the COVID-19 pandemic on minority groups. The presentation emphasized that to better understand the impact of COVID-19 on sub-sections of the population, it is necessary to consider not only health statistics but also wider statistics such as housing, education, and occupation. A key challenge is how to synthesize this information, especially when data is held across different organizations or departments. Additionally, the role of qualitative information in relation to official statistics should be considered, especially in a pandemic where data may not be readily available.

C. Session 3: Integrating climate and disaster risk data to build resilience

24. Session 3 began with a presentation by Reena Shah, Senior Statistician at UNSD, on the Global Set of Climate Change Statistics and Indicators - Towards a Statistical Framework for Disaster-related Statistics. The presentation was divided into four parts. The first part provided an overview of the global set of indicators, which explained the process and approach, methodological foundation, main structure, statistical references, tiers, and metadata. The second part of the presentation discussed the relationship between disasters and climate change. It highlighted the connection between disasters and the FDES, the connection between Sendai Framework indicators and the global set of indicators and presented a list of disaster-related

indicators. The third part of the presentation focused on the implementation support for the global set of indicators, including the various steps for implementation and a draft self-assessment tool. The fourth part of the presentation discussed capacity development activities, including advancing the methodology, enhancing the role of NSOs at the country level, and developing training materials and strategies for capacity development and resource mobilization.

25. Mrs. Anjali De Abreu-Kisoensingh shared Suriname's experience in collecting disaster-related statistics. The presentation highlighted Suriname's exposure and vulnerability to risk, the frameworks used for data collection, Suriname's First Voluntary National Review (VNR), the link between environment statistics, the Global Set of Climate Change Statistics and Sustainable Development Goals (SDGs), and disaster statistics. The presentation covered the data collection process according to the Environment Statistics Compendium, data availability, selected disaster statistics, challenges/weaknesses of the data collection process, and opportunities/strengths learned from this experience.

26. Mr. Sönke Kreft and Mr. Nedal Katbeh-Bader presented on "Data for Climate-Related Loss and Damage." In their presentation, they provided a summary of the Warsaw International Mechanism for Loss and Damage, which was established at COP19 in 2013 to address the impacts of climate change on vulnerable developing countries. The mechanism is guided by its Executive Committee, and the Technical Expert Group on Comprehensive Risk Management (TEG-CRM) supports the ExCom's five-year workplan on improving resilience to loss and damage from extreme and slow onset events. The TEG-CRM is working to increase knowledge and understanding of CRM approaches, including finance, data, technology, regulation, and capacity building. The presentation highlighted the challenges for climate risk data, the importance of integrating climate and disaster risk data to build resilience, and lessons learned from data collection, management, and use.

27. Mrs. Angela Ferruzza presented on sustainability, climate change, and hazardous events: statistical experiences and challenges. The presentation covered several topics, including statistical measures for climate change and hazardous events, challenges and perspectives, statistical indicators for SDG monitoring, interlinkages between climate change and hazardous event indicators, and the challenges faced by NSOs. She also shared the experience of ISTAT statistics on climate change in the main Italian cities from 1971-2020. Mrs. Ferruzza concluded by outlining a list of challenges and perspectives for statistical measures related to climate change and hazardous events.

28. Mr. Mikaël Maes presented on the monitoring of exposure to climate and its key results and challenges. The presentation covered the interlinkages between the IPCC concept of risk and the assessment of climate-related hazards, as well as an overview of the objectives of assessing such hazards. Mr. Maes provided a global overview of extreme temperature, extreme precipitation, drought, and wildfire, along with their current situations.

29. Mr. Hasan Al Dashti presented on the role of climate data in disaster risk reduction, using Kuwait as a national case study. The first slide highlights the importance of data in developing evidence-based disaster risk reduction strategies, emphasizing the need to prevent risks from turning into disasters and the significance of considering both development and climate change aspects. The slide suggests that having good climate data makes DRR easier and improves resilience, which can be achieved through the use of big, updated, and quality-controlled data. The second slide lists the sources of climate data, including DWR station, satellite images, 27 meteorological stations, and NWP. The following slide emphasizes the importance of collaboration with other entities in disaster risk reduction, such as the Meteorological Department, colleges and universities, the General Department of Civil Defence, and the Kuwait Fire Force.

Collaboration with these entities can aid in the collection and analysis of data and the development of effective strategies for disaster risk reduction. The presentation also included an example of floods that occurred in 2018, along with all tracking and analysis steps. The last slide outlines the objectives of the Climate Team, which include collecting climate data from 1962 to 2016, analysing historical data on temperature, rainfall, and dust, identifying statistical trends and anomalies in the present and future, creating future projections based on scenarios and models, and introducing a chapter on the description of the climate in Kuwait. The Climate Team's work involves a range of data collection and analysis activities that aim to improve understanding of climate trends and support effective disaster risk reduction strategies.

30. Mr. Tarek Sadek and Mrs. Marlene Tomaszkiewicz presentation discussed the analysis of sand and dust storms (SDS) and climate change modelling in Western Asia. It highlights the impacts of SDS on climate, health, environment, and socio-economic sectors. The Arab Centre for Climate Change Policies is implementing a project to combat SDS through interregional dialogues and building capacities of Arab Meteorological Agencies. The presentation outlines the methodology for reviewing historical SDS and assessing contributing environmental factors to determine the correlation between SDS and climate parameters. The next steps include reviewing historical SDS, assessing environmental factors, and reviewing climate modelling outputs to evaluate future SDS potential.

31. Mr. Gordon McBean paper titled “Building Climate Resilient Communities: Living Within the Earth’s Carrying Capacity” discusses the need for Canadian communities to increase their resilience to climate change, reduce adverse impacts and risk, and enhance disaster recovery. The authors highlight the lack of detailed implementation strategies and established funding frameworks for climate resilience and note that most actions are unplanned and take place after extreme loss events. The paper emphasizes the importance of combining western and Indigenous ways of knowing for effective knowledge translation, promoting nature-based solutions and conservation for global GHG sequestration and resilience, and investing in climate-resilient and energy-efficient buildings. Lastly, the authors stress the need for collaboration and coordination across governance levels and sectors of society, recognizing Traditional Knowledge and promoting equity, diversity, and inclusion in climate change adaptation planning.

D. Session 4: Downscaling data at local level for Disaster Risk Reduction and Resilience Strategies

32. Session 4 started with the presentation of Mrs. Fruzsina Straus on the Participatory Planning and Qualitative Data Collection for Resilience Building at the Local Level, case study from Africa. The PowerPoint presentation is about using participatory planning and qualitative data collection for resilience building at the local level in Africa, with the City Resilience Action Planning (CityRAP) tool. CityRAP is a participatory planning tool used to build urban resilience with city authorities and local communities in more than 40 African cities. CityRAP involves four phases that address challenges common to many secondary cities in developing countries, such as the lack of data and information. The tool enables communities to plan actions aimed at reducing risk and building resilience, through the development of a city Resilience Framework for Action (RFA), with five interrelated pillars, including urban governance, urban planning and environment, resilient infrastructure and basic services, urban economy and society, and urban disaster risk management. CityRAP data is collected at the municipal and community levels through participatory planning, focus group discussions, joint workshops, and community consultations.

33. Mr. Luke Feeney presentation was on understanding Cascading Failure to increase Resilience: Case study with the Critical Asset Management System at Local Level. The PowerPoint presentation discusses the problem of identifying and understanding critical assets that could affect disaster resilience, including

potential failure chains between interconnected assets. The solution presented is the creation of a software tool called CAMS, which inventories critical assets, identifies hazards, maps relationships between assets, and helps prioritize mitigation and investment programs. CAMS is available as open-source software on GitHub, as a service with subscription from TerminusDB, and is open to partnerships. Access to CAMS is secure, with role-based access control and protection through a trusted cloud infrastructure. The presentation highlights the benefits of CAMS, including increased data for decision-making, enhanced protection of critical assets, success in public-private partnerships, and alignment with the Sendai Framework's priorities.

34. Mr. Ross Marc Eisenberg presentation topic was “Using Global Data to Integrate Climate and Disaster Resilience in Urban Planning”. The presentation outlines the City Resilience Program, a multi-donor initiative that promotes urban resilience through three main areas of support: planning, finance, and partnerships. The presentation focuses on the City Scan, which is a rapid assessment of a city's critical resilience challenges. It is a package of maps, geospatial analyses, data visualizations, and narrative interpretation that examines the interaction between the urban built and natural environments. The City Scan supports teams to build dialogue around a city's key resilience issues, enables spatial thinking across sectors, and facilitates deeper insights into climate and disaster risks in resilience planning workshops. The presentation highlights the City Scan's added value in emphasizing exposure to hazards, spotlighting localized climate-related stressors, and providing continually upgraded and augmented data. It also identifies the City Scan's limitations in terms of socio-economic characteristics and network-based accessibility analyses.

E. Session 5: Arab Region and Data Gaps in Disaster-Conflict Nexus

35. Session 5 started with the presentation of Mr. Tilman Brück on Data, Evidence and Socio-Economic Development during the Syrian Crisis. The presentation discusses the challenges of collecting data and understanding the impacts of socio-economic development programs in conflict-affected settings, such as the Syrian crisis. It highlights the lack of research and evidence due to security, ethical, and practical concerns, leading to a gap in knowledge for policymakers and practitioners. The presentation proposes three possible ways forward to generate evidence in these settings: traditional surveys, remote sensing data, and machine learning. It demonstrates the application of these methods in a case study of an agricultural program in Syria and showcases the use of advanced analytical methods, such as machine learning, for impact estimation and targeting. The study emphasizes the importance of embedding context in the analysis and fostering strong partnerships to overcome research complexity in conflict settings.

36. Mr. Mohammed Salim presented the data challenges during earthquake response in Afghanistan. The presentation addresses data challenges during an earthquake event in Afghanistan, emphasizing the lack of comprehensive disaster risk assessment and information management systems in the country. Despite some attempts at hazard mapping and urban risk assessment by NGOs and a UNDP-supported disaster information management system (DIMS) project, these efforts have not been well-utilized or sustained. The recent political changes have further exacerbated the situation, resulting in destroyed systems. The presentation highlights challenges in referencing data, common assessment tools, understanding data ecosystems, competitive data management, and the need to prioritize new generation disaster data management. It suggests that if the current authority is recognized, UNDP Afghanistan could work with relevant agencies and stakeholders to redesign systems suited to the Afghan context and needs, while ensuring that disaster risk management information reaches communities to build resilience.

37. Mrs. Ahlam Alrousan presented the pilot project on policy effectiveness in Jordan. This presentation explores the use of big data and non-traditional data sources for public policy and decision-making, particularly during the Covid-19 pandemic. Traditional data is difficult to obtain during challenging times, so the presentation highlights the importance of leveraging big data and data science to support decision-makers. Non-traditional data sources such as social media, satellite images, and Google trends are analysed to provide real-time information, quick results, and cost-effective data collection. A prototype platform is developed to help policymakers develop, implement, and monitor policies using new data types and analytical approaches. The platform is designed for use by national statistics offices, ministries, disaster management units, and development practitioners. The presentation acknowledges challenges such as data bias, exclusion, and privacy measures while emphasizing the benefits of utilizing non-traditional data sources for more accurate and timely decision-making.

F. Session 6: Innovations in Data Tools for Risk Information and Communication

38. Session 6 started with Mr. Mohamed Abd Salam El Vilaly presenting Implementing the 2030 Agenda for water efficiency/productivity and Water Sustainability in the MENA Countries. The presentation discussed that the Increasing Watershed Resilience to Climate Change presentation focuses on a case study of the vulnerability assessment of the agriculture sector to climate change in the Algerois Watershed in Algeria. The project aims to enhance climate change adaptation and resilience at the watershed level by conducting an integrated vulnerability assessment using RICCAR's methodology, which is based on a system's climate change exposure, sensitivity, and adaptive capacity. The results demonstrate the high vulnerability of the watershed's agricultural sector to climate change, with hilly and densely urbanized areas showing more vulnerability. The study also recommends interventions that align with the United Nations' 2030 Sustainable Development Goals, addressing issues such as water management, sustainable land management, and conservation agriculture.

39. Mr. Duncan Sullivan presented Displacement tracking matrix (DTM). The Displacement Tracking Matrix (DTM) presentation highlights IOM's commitment to support Member States in reducing risk and building resilience in line with the Sendai Framework for Disaster Risk Reduction 2015–2030. IOM assists national counterparts in integrating mobility perspectives into disaster risk reduction policies, conducting multi-hazard risk assessments, and implementing community-based disaster risk management. The DTM produces data on climate risk vulnerabilities and exposure of displaced communities during various climate events, contributing to national disaster risk reduction efforts. Through implementing DTM tools and methodologies, IOM assesses and identifies risk areas, maps potential evacuation sites and routes, and evaluates access to services and physical access constraints. Case studies from Mozambique, Burundi, and Uganda demonstrate the importance of context-specific approaches to monitoring disaster shocks and their impacts, emphasizing the growing priority of planning for needs and delivering services to populations affected by climate events that trigger displacement.

40. Mr. Henry Doctor presenting enhancing health information systems using the “s-c-o-r-e” technical package. The presentation discusses the challenges of limited data for decision-making in health information systems and introduces the S-C-O-R-E (Survey, Count, Optimize, Review, Enable) Technical Package. This package, developed by the World Health Organization, aims to support countries in effectively collecting, analyzing, reporting, and using health data for decision-making. Key findings from a global report reveal that no country has a fully mature Health Information System (HIS) and that inequalities persist between high and low-income countries. The WHO has initiated regional strategic efforts to improve health data systems, including electronic health records, improved CRVS systems, and better routine health information systems. Opportunities to enhance health information systems include increasing digitalization,

global strategies on digital health, and increased demand for data-driven decision-making. The presentation highlights the importance of addressing these challenges and leveraging opportunities to improve health information systems globally.

41. Mr. Wael Iskandar presented Humanitarian Data Exchange (HDX). The Humanitarian Data Exchange (HDX), managed by the United Nations Office for the Coordination of Humanitarian Affairs (OCHA), is an open platform aimed at making humanitarian data easy to find and use for analysis. With a mission to increase the use and impact of data in humanitarian response, the Centre for Humanitarian Data focuses on data services, data responsibility, data literacy, and predictive analytics. Since its launch in 2014, HDX has attracted 1.4 million unique users, facilitated 1.8 million downloads in 2021, and hosts over 19,000 datasets from 300+ active organizations. The platform offers data on the context of crises, affected people and their needs, and humanitarian responses. To improve data discovery, HDX introduced the 'Data Grid' feature, organizing important crisis data into six groups with subsets of categories. Annual flagship reports, such as The State of Open Humanitarian Data, track progress in closing data gaps across humanitarian operations. By advocating for open data sharing and supporting open data platforms, everyone can contribute to the data-driven humanitarian response.

42. Mrs. Madhurima Sarkar-Swaisgood's presentation introduces the tools, data, and methodology for climate forecasting risk analytics, with a focus on ESCAP's Risk and Resilience Portal. The Portal aims to deepen understanding of climate impacts on vulnerable populations and critical infrastructure, helping practitioners identify risk hotspots and support early warning systems. The presentation covers four parts: an overview of the Portal, data for risk assessment, analytical methodology for vulnerability and exposure, and the analytical framework for economic losses and resilience-building pathways. The Portal also offers technical support for countries' National Adaptation Plans, Voluntary National Reviews, Nationally Determined Contributions, and disaster risk reduction strategies.

43. Mr. Chadi Abdallah presented the geospatial tools in risk information and early warning dissemination. The presentation focused on geospatial tools in risk information and early warning dissemination, featuring the Sustainable Natural Resources Management Platform and Early Warning System (SuNaR). The presentation emphasized the main elements of effective early warning systems, including understanding risk, communication, and response capacity. SuNaR's app allows for automatic and offline data collection and transmission, including fire details, photos, GPS locations, and more. The system also enables fire risk notifications to be sent to municipality presidents, displaying risk levels and recommended procedures for the current day and 24 to 48 hours in the future.

44. Mr. Pierre Chrzanowski and Mr. Alex Chunet presented digital earth partnership towards accelerating digital earth observation services for resilient development. The Digital Earth Partnership aims to enhance the resilience of vulnerable countries and communities to climate change and natural hazard disasters by providing greater access to and adoption of frontier earth observation tools and services. Traditional approaches to risk data collection are complex, costly, and expert-centric. To address these limitations, the partnership utilizes a blended approach, leveraging earth observation, artificial intelligence, and local participation for maximum impact. With a focus on sustainability and scalability, the partnership adopts bottom-up data collection techniques employing digital, open, local, and simple solutions. Examples include Open Cities Africa, which engaged citizens in mapping various urban features, and the Resilience Academy, which trains young people in skills for resilient urban development. Collaborating with the European Space Agency (ESA) under the Global Development Assistance (GDA), the partnership promotes knowledge development across eight thematic clusters.

45. Mr. Andrew Spezowka presented the Risk Information Exchange. The Risk Information Exchange (RiX) presentation highlights the need for improved understanding of risk in various dimensions in response to the Sendai Framework for Disaster Risk Reduction 2015-2030. RiX aims to fix the proliferation of data and platforms, siloed approaches, and limited opportunities for collective gains in risk data usage. It serves as an aggregator of data sources on hazards, exposure, vulnerability, loss and damage, and other impacts, and as a living repository of open-source global and national risk data and information. RiX facilitates access to globally available risk information and supports the national implementation of the Sendai Framework, SDGs, and Paris Agreement. It is designed to be scalable and low maintenance, without replacing or duplicating other tools or platforms. RiX features include curated map viewing, metadata, various admin levels, and an upload function, searchable by region, country, hazard definitions, exposure, climate change projections, and thematic sections.

46. Mr. Majdi Fanous presentation was on machine learning in flood risk control and mitigation strategies. This presentation discussed the impact of greenhouse gas concentrations on temperature increases, affecting ocean circulation, and sea level rise. By 2100, coastal flooding and land loss may displace hundreds of millions of people. Mangroves play a crucial role in stabilizing coastal soil and attenuating waves, thanks to their complex root systems. However, modelling hydrodynamics and morpho dynamics using Navier-Stokes equations can be computationally and time expensive. Emulation through machine learning offers a faster solution, replacing complex models while maintaining accuracy. The future adaptation of mangroves under climate change remains uncertain, necessitating further research and strategies.

47. Mr. Josselin Gauny presented the role of data in informing food security and risk reduction interventions. In this presentation at the Second Expert Forum for Producers and Users of Disaster-related Statistics, Josselin Gauny from the Food and Agriculture Organization of the United Nations (FAO) discussed the role of data in informing food security and risk reduction interventions. The presentation highlighted the DIEM Monitoring system, which tracks shocks, agricultural production and marketing difficulties, income changes, coping strategies, and food security outcomes over time. This data-driven approach helps to better inform risk reduction strategies and enhance food security interventions.

48. Mr. Bapon Fakhruddin presented the WorldFAIR: Open Data and Artificial Intelligence to assess systemic disaster risks assessment. The presentation discussed the challenges of disaster risk assessment, such as complex data management, limited capacity, underutilized data, lack of standardization, and clear data sharing mechanisms. The WorldFAIR project aims to advance the implementation of FAIR (Findable, Accessible, Interoperable, and Reusable) principles in various disciplines through global cooperation, involving 19 partners from multiple countries. The project features diverse case studies in areas like chemistry, nanomaterials, geochemistry, social surveys data, population health, urban health, biodiversity, agricultural biodiversity, ocean science, disaster risk reduction, and cultural heritage. These efforts will help address the lack of standardized definitions and guidance for understanding hazards and facilitate better risk management through integrated systems.

49. WFP presented Understanding vulnerability by using different data analysis techniques. In this presentation, the World Food Programme (WFP) Regional Bureau for MENA and Eastern Africa discusses the importance of data analysis in understanding vulnerability and informing disaster risk reduction (DRR) activities. WFP employs various tools, such as GIS for vulnerability analysis, PRISM for real-time climate risk monitoring, CLEAR for analysing resilience, and AIMS for evaluating Food Assistance for Assets (FFA) programs. Data-driven approaches help enhance emergency preparedness, food security, and climate risk insurance mechanisms. Investment and coordination across agencies, organizations, governments, and

communities are crucial for data preparedness and timely decision-making, as humanitarian needs become more complex.

50. Mr. Aahlaad Musunuru's presentation focused on allocating population data to flood inundation maps. In this presentation, he discussed a DIY (Do It Yourself) step-by-step GIS approach for mapping population exposure to flood hazards. The methodology involves extracting, transferring, and loading data to create a map illustrating the population exposed to flood hazards. This approach aims to facilitate a better understanding and management of flood risks and their potential impact on communities. Additionally, the presentation directed the audience to a detailed document on the process, available on the UNESCAP website.

IV. Organization

A. Date and venue

51. The forum was held in a hybrid format, participants were able to attend in person and via zoom platform from 6 to 8 September 2022.

52. The forum was organized in seven main sessions in addition to the opening and keynote remarks. The detailed agenda is included in Annex I.

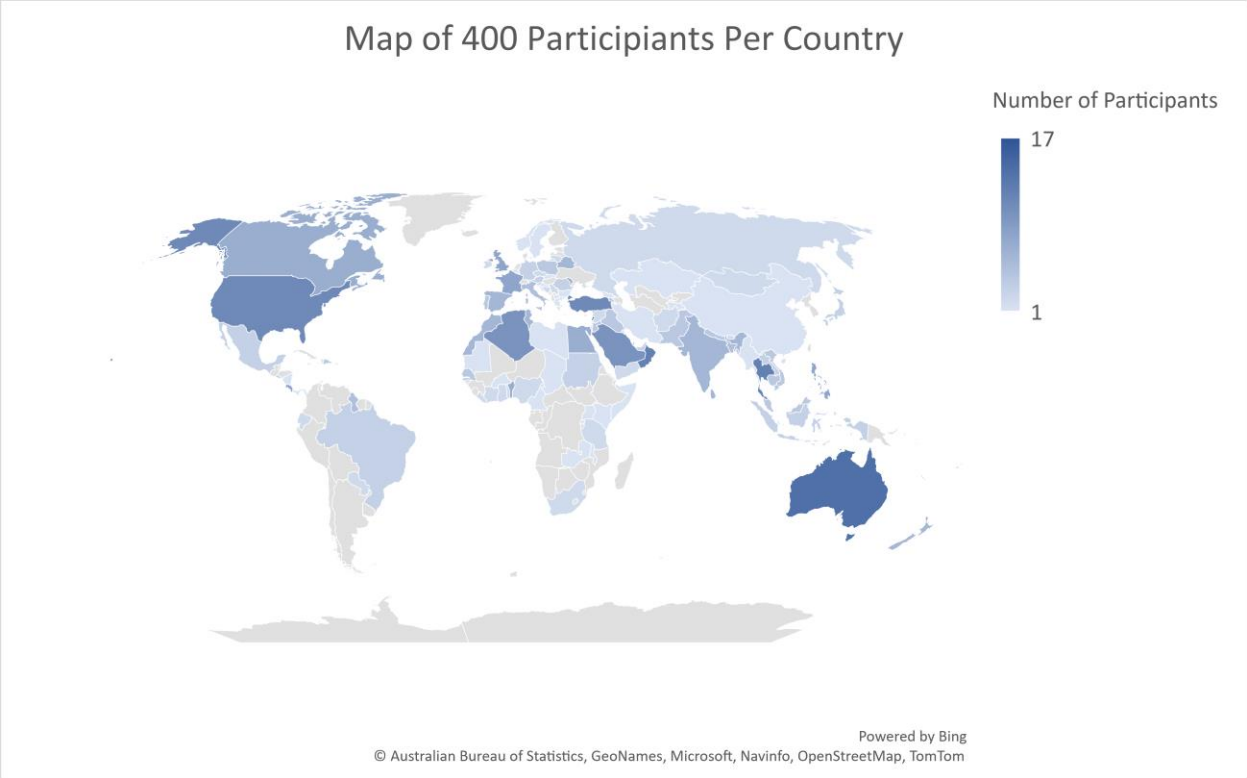
B. Participants

53. The full list of registered participants is provided in Annex II.

54. Presentations delivered during the meeting may be accessed through the following meeting webpage:

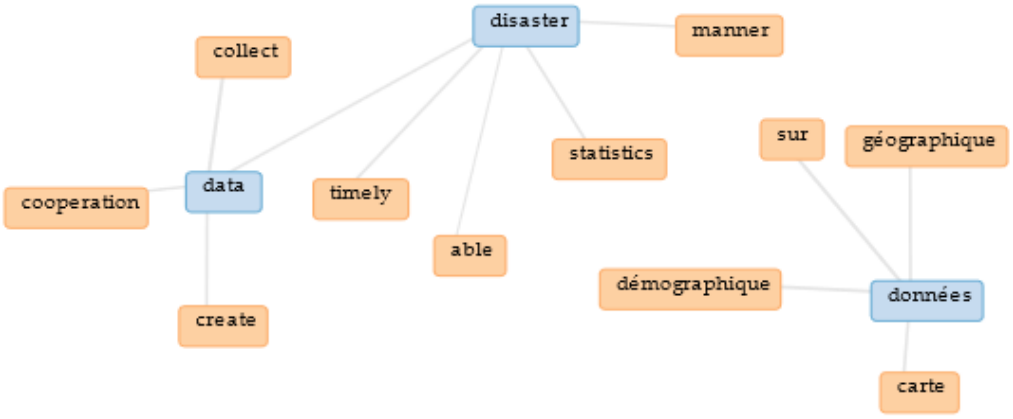
https://www.unescwa.org/events/producers-and-users-disaster-related-statistics

Annex I. Poll Results



Q1-What is your main expectation of the Forum?

Q2-What do you consider the main challenge for disaster risk data?



Annex II. Agenda

Day 1: 6 September 2022	
12:00-12:20	**Welcome and Opening Remarks** *Stefan Schweinfest, Director, UN Statistics Division* *Loretta Hieber Girardet, Chief of Branch, United Nations Office for Disaster Risk Reduction, UNDRR* *Mounir Tabet, Deputy Executive Secretary, United Nations Economic and Social Commission for Western Asia, UNESCWA*
	Keynote *Haishan Fu, Director, Development Data Group, Development Economics, World Bank Group*
Session I: Advancing Official Statistics for Disaster Risk Reduction Organizers: UNDRR, ESCAP, UNSD, UNESCWA, LAS Moderator: Wafa Aboul Hosn (ESCWA) and Michael Nagy (ECE)	
	Global and regional efforts to advance disaster-related statistics
12:20-12:25	• Summary of the First Forum *Michael Nagy, Economic Affairs Officer, Statistician, Economic Commission for Europe (ECE)*
12:25-12:40	• Progress and status of global efforts to advance disaster-related statistics *Co-chairs of the Inter-Agency and Expert Group on Disaster-related Statistics: Animesh Kumar, Head of Office in Bonn (UNDRR) and Rikke Munk Hansen, Chief, Economic and Environment Statistics, Statistics Division (ESCAP)*
12:40-12:55	• Statistical Framework for Disaster-related Statistics *Robert Smith, Technical Expert, Inter-Agency and Expert Group (IAEG) on Disaster-related Statistics*
12:55-13:10	• Review of Hazard Classifications and Definitions *Kanza Ahmed, Consultant in Global Public Health, UK Health Security Agency UKHSA*
13:10-13:25	• Panel discussion: Regional work on disaster-related statistics by the United Nations regional commissions *ECE: Michael Nagy; ESCAP: Rikke Munk Hansen; ECLAC: Georgina Alcantar; ECA: Andre Nonguierma; ESCWA: Wafa Aboul Hosn*
13:30-13:35	• Panel discussion: Work on disaster-related statistics by other organizations

	League of Arab States (LAS), Statistical, Economic and Social Research and Training Centre for Islamic Countries (SESRIC), Gulf Cooperation Council – Statistics (GCC-Stat) and Arab Institute for Training and Research in Statistics (AITRS)
13:35-13:45	• Discussion *Feedback from Participants on expectations and priorities*
13:45-14:00	**Break**
	Geospatial Information and Big Data
14:00-14:10	• UN-GGIM and Geo-enabling Disaster Risk Management *Cecille Blake, Statistician, UNSD*
14:10-14:15	• GEO promoting open Earth Observation solutions for Disaster Risk: an example of methodology for Sendai reporting in Ecuador *Rui Kotani, Disaster Risk Reduction (DRR) Coordinator, GEO Secretariat*
14:15-14:25	• UNOSAT Humanitarian Rapid Mapping Service: Evidence-based Information to support Humanitarian Assistance using Satellite Imagery and Geospatial Technologies *Luca dell'Oro, Chief of the Disaster Risk Management and Climate Resilience, United Nations Satellite Centre (UNOSAT)*
14:25-14:30	• Experience of Mozambique in collecting, managing and integrating statistics and geospatial data for disaster risk reduction *Pedro Duce, Director of Demographic, Vitals and Social Statistics, National Institute of Statistics, Mozambique*
14:30-14:35	• The Montserrat Experience: Supporting the collection and dissemination of statistical data through the utilization of drones and geospatial outputs *Lavern Rogers-Ryan, GIS Manager at the Ministry of Agriculture, Land, Housing and the Environment of Montserrat*
14:45-14:50	• ESCWA – Using Remote Sensing for Flood Detection in Egypt *Wafa Aboul Hosn, Chief Economic Statistics, ESCWA*
14:50-15:00	• Q&A and Survey • Discussion
Session II: Lessons Learned on Using Data to Save Lives During Pandemics Organizers: UNECE, Public Health England Moderator: Michael Nagy, UNECE	
15:00-15:10	• Global Work *Stephen Mac Feely, Director of Data and Analytics, World Health Organization (WHO)*
15:10-15:25	• Case Study from Mexico *Jose Eduardo de la Torre The National Institute of Statistics and Geography (INEGI) Mexico*

15:25-15:35	• Case Study from UK *Kanza Ahmed, Consultant in Global Public Health, UK Health Security Agency UKHSA*
15:35-15:45	• Case Study from Lebanon *Bilal Ghali, Field Officer, Strengthening Disaster Risk Management, UNDP*
15:45-16:00	• Discussion, main conclusions and closing of the session *Michael Nagy, Economic Affairs Officer, Statistician, Economic Commission for Europe (ECE)*

Day 2: 7 September 2022	
Session III: Integrating climate and disaster risk data to build resilience Organizers: UNDRR, ESCAP, ESCWA, WMO, UNSD Moderator: Carol Chouchani Cherfane, Director, Arab Centre for Climate Change Policies, Cluster Leader, Climate Change and Natural Resource Sustainability, ESCWA	
12:00-12:10	• Global Set of Climate Change Statistics and Indicators - towards a statistical framework for disaster-related statistics *Reena Shah, Chief, Environment Statistics Section, United Nations Statistics Division (UNSD)*
12:10-12:20	• Case Studies from Regions: Suriname *Anjali De Abreu-Kisoensingh, Statistician, General Bureau of Statistics, Suriname*
12:20-12:35	• Discussion
12:35-12:50	• Disaster Loss and Damages o *Nedal Katbeh-Bader, Member, Executive Committee of the Warsaw International Mechanism for Loss and Damage, UNFCCC* o *Sönke Kreft, Executive Director, Munich Climate Insurance Initiative (Member, WIM Technical Expert Group on Comprehensive Risk Management)*
12:50-13:00	• Sustainability, Climate Change and Hazardous Events: statistical experiences and challenges *Angela Ferruzza, Head of Division for Environment, Territory and Register of Geographic and Territorial Units, Italian National Institute of Statistics (ISTAT), and Chair of the UNECE Task Force on Measuring Hazardous Events and Disasters.*
13:00-13:15	• Discussion
13:15-13:25	• Advancing methodology for monitoring exposure to climate-related hazards

	Mikaël J.A. Maes, Ph.D., Environmental Data Scientist – Earth Observations at the Environmental Performance and Information Division of the OECD Environment Directorate.
13:25-13:35	• The Role of Climate Data in DRR in Kuwait *Hassan Dashti, Superintendent of Climatology, Department of Meteorology, Directorate General of Civil Aviation (DGCA) of Kuwait*
13:35-13:45	• Discussion
13:45-14:00	**Break**
14:00-14:20	• Case Study from regions APDIM o *Amin Shamseddini, Programme Officer, Asian and Pacific Centre for the Development of Disaster Information Management (APDIM) and Letizia Rossano, APDIM Director, ESCAP* o *Tarek Sadek, Economic Affairs Officer, ESCWA*
14:20-14:40	• Case Study from Canada - Building Climate Resilient Communities. *Professor Gordon McBean, FRSC, FISC, Institute for Catastrophic Loss Reduction and, Department of Geography and Environment, Western University, London, Ontario, Canada*
14:40-15:00	• Discussion
Session IV: Downscaling data at local level for Disaster Risk Reduction and Resilience Strategies Organizers: UNDRR, ESCWA, ECE, UNHABITAT Moderator: Chadi Abdallah, Natural Hazards, Remote Sensing & GIS, Lebanese National Council for Scientific Research, Remote Sensing Centre	
15:00-15:15	• Participatory Planning and Qualitative Data for Resilience Building at the Local Level: Case Studies from Africa *Fruzsina Straus, Programme Management Officer, Human Settlements, UNHABITAT*
15:15-15:30	• Understanding Cascading Failure to increase Resilience: Case study with the Critical Asset Management System at Local Level *Luke Feeney, Co-founder of terminusdb*
15:30-15:45	• Using Global Data to Integrate Climate and Disaster Resilience in Urban Planning *Ross Marc Eisenberg, Disaster Risk Management Specialist, Global Facility for Disaster Reduction and Recovery, World Bank*
15:45-16:00	• Discussion

Day 3: 8 September 2022

Session V: Arab Region and Data Gaps in Disaster-Conflict Nexus
Organizers: ESCWA, UNDRR, LAS

Moderator: Shahira Wahbi, Head of the Technical Secretariat of the Arab Coordination Mechanism for Disaster Risk Reduction, League of Arab States (LAS)	
12:00-12:20	• Data, evidence and socio-economic development during the Syrian crisis. *Tilman Brück, Professor, Humboldt-University of Berlin and Director, ISDC - International Security and Development Center, Berlin*
12:20-12:40	• Data challenges during earthquake response in Afghanistan. *Abdallah Al Dardari, Resident Representative, UNDP Afghanistan and former deputy Prime Minister, Minister of planning, Syria*
12:40-13:00	• Call Detail Records to illustrate the challenges facing Syrian refugees in Lebanon *Ziad Abdallah, Central Administration of Statistics (CAS), Lebanon*
13:00-13:20	• A pilot project on policy effectiveness Jordan *Ahlam Ahmad Alrousan, Department of Statistics (DOS), Jordan*
13:20-13:45	• Discussion
13:45-14:00	**Break**
Session VI: Innovations in Data Tools for Risk Information and Communication **Exhibition at the premises of the MZ Conference Hall in ESCWA** Organizers: ESCWA, ESCAP, UNDRR Bonn, UNDRR ROAS Moderator: Soheil Rastan, UNESCWA and Saira Ahmed, Programme Management Officer, UNDRR-ROAS	
14:00-15:30	• Increasing Watershed Resilience to Climate Change *Mohamed Abd Salam El Vilaly, Sustainable Development Officer, ESCWA*
	• Data Displacement Matrix DTM *Duncan Sullivan, Head of Programmes, IOM*
	• Score Data Cards *Henry Victor, Coordinator, Information Systems for Health, Division of Science, Information and Dissemination, WHO*
	• Humanitarian Data Exchange/ Humanitarian Risk Index *Wael Iskandar, Information Management Officer, UNOCHA*
	• ESCAP Risk and Resilience Portal *Madhurima Sarkar-Swaisgood, ESCAP*
	• Geospatial tools in risk information and EW dissemination *Chadi Abdallah - Natural Hazards, Remote Sensing & GIS, Lebanese National Council for Scientific Research, Remote Sensing Center, Lebanon*
	• Innovative satellite-based data services for Disaster Resilience & Digital Earth Partnership *Pierre Chrzanowski, Digital Earth Partnership, The World Bank - GFDRR*

	• RiX - Risk Information Exchange *Andrew Spezowka, UNDRR Geneva*
	• Disaster Risk Recovery *Majdi Fanous, postgraduate researcher*
	• DIEM: The role of data in informing food security and risk reduction interventions *Josselin Gauny,FAO*
	• World-FAIR for global cooperation on FAIR data policy and practice *Bapon Fakhruddin, Tonkin & Taylor*
	• UNESCO DRR Atlas - Arab States: Pathways and alliances for risks mapping and interpretation *Elsa Sattout, UNESCO*
	• Understanding vulnerability by using different data analysis techniques *Omar Farook & Moataz Elmasry, WFP*
	• Population exposed to flood hazard *Aahlaad Musunuru, Geographic Information Systems specialist, ESCWA*
Session VII: Way forward for Informing disaster-risk reduction policy with official statistics Moderator: Organizing Committee	
15:30-15:45	• Discussion *Key issues discussed*
15:45-16:00	• Conclusion

Annex III. List of Participants

	First Name	Last name	Country	Organization
1	Mohammad Salim	Salim	Afghanistan	Undp
2	Michael	Nagy	Austria	Unece
3	Abdallah	Aldardari	Türkiye	Undp Afghanistan
4	Atilla	Karaman	Türkiye	Sesric
5	Khurshedjon	Qosimov	Tajikistan	Agency On Statistics Under The President Of The Republic Of Tajikistan
6	Pamela	Michel Acosta	Dominican Republic	Escuela Nacional De Gestión De Riesgo/Defensa Civil Rep. Dom.
7	Gemeh	Roberts	Liberia	National Government
8	David Maxwell	Bessah	Ghana	Ghana Statistical Service
9	Viveca	Norén	Sweden	Msb, Swedish Civil Contingencies Agency
10	Hernane	Viegas Da Graça Santiago	São Tomé And Príncipe	Direcção Nacional De Planeamento, Ministério De Planeamento E Economia Azul
11	Adechian	Djabar Dine Colawole	Benin	Afristat
12	Andre	Nonguierma	Burkina Faso	Uneca
13	Abo Kwame Alain Serge	Boignini	Ivory Coast	Office Of The Prime Minister
14	Rafael	Luiz	Brazil	National Center For Monitoring And Early Warning Of Natural Disasters - Cemaden
15	Milutin	Radenkovic	Serbia	Statistical Office Of The Republic Of Serbia
16	Amina	Omari	Algeria	Ministry Of The Interior, Local Colectivities And Land Managment - National Delegation For Major Risks
17	Hamid	Afra	Algeria	Ministry Of The Interior Local Collectivities And Land- National Delegation For Major Risks
18	Sacha Gilbert	Baud	Austria	Statistics Austria
19	Marie	Adámková	Czech Republic	Ministry Of The Environment Of The Czech Republic
20	Geraldine Adrienne	Henningsen	Germany	Unhcr
21	Gemma	Van Halderen	Australia	Australian Bureau Of Statistics
22	Weerasekara	Bamunu Mudiyanselage Ranjith Weerasekara	Sri Lanka	Ministry Of Defense

23	Nunufar	Stepanyan	Armenia	Current Employer - Hydrometeorology And Monitoring Center Of Armenia Former Employer - Ministry Of Emergency Situations Of Armenia
24	Aysar	Tomi	Palestine	Palestinian Central Bureau Of Statistics
25	Irénée	Joassard	France	French Statistical Office (Ministry Of Environment)
26	Ševala	Korajčević	Bosnia & Herzegovina	Agency For Statistics Of Bih
27	Beata	Janowczyk	Poland	Government Centre For Security
28	Jacek	Kłodowski	Poland	Government Centre For Security
29	Ebrima Wally	Manneh	The Gambia	Gambia Bureau Of Statistics
30	Hernane	Viegas Da Graça Santiago	São Tomé And Príncipe	Direcção Nacional De Planeamento, Ministério De Planeamento Finanças E Economia Azul
31	Hedi	Saidi	Tunisia	Arab Institute For Training &Research In Statistics (Aitrs)
32	Ms.Budsara	Sangaroon	Thailand	Director Of General National Statistical Office
33	Vichayada	Chomsee	Thailand	Director Of General National Statistical Office
34	Atilla	Karaman	Türkiye	Sesric
35	Mohamed	Abdelsameaa	Egypt	Egyptian Cabinet, Information And Decision Support Center (Idsc)
36	Seyid Tahir	Mahmud	Türkiye	Sesric
37	Maryam	Alsabeeh	Kuwait	Central Statistical Bureau - State Of Kuwait
38	Phontip	Chitrawut	Thailand	Kanchanaburi Provincial Statistical Office
39	Pennapar	Muenta	Thailand	Kanchanaburi Provincial Statistical Office
40	Warachaya	Wisedsing	Thailand	Kanchanaburi Provincial Statistical Office
41	Chaipojn	Kunha	Thailand	Director
42	Hernane	Santiago	São Tomé And Príncipe	Direcção Nacional De Planeamento, Ministério De Planeamento Finanças E Economia Azul
43	Véronique	Antoni	France	French Ministry Of Ecological Transition And Territorial Cohesion
44	Anna	Hakobyan	Armenia	Statistical Committee

45	Armine	Andresyan	Armenia	Statistical Committee
46	Samira	Bahloul	Algeria	الديوان الوطني للاحصائيات
47	Animesh	Kumar	India	Undrr
48	Loretta	Hieber Girardet	United States	Undrr
49	Leandry	Moreno	France	Unwto
50	Barry	Alhassane	Guyana	Ministère De L'Environnement Et Du Développement Durable/Centre National De Gestion Des Catastrophes Et Des Urgences Environnementales
51	Oksana	Morozova	Russia	All-Russian Scientific Research Institute Of Civil Defense And Emergency Situations Emercom Of Russia
52	Herman	Kashililika	Tanzania	National Bureau Of Statistics
53	Latifah	Mohamed Shah	Malaysia	Department Of Statistics Malaysia
54	Nazira	Abdullah	Malaysia	Department Of Statistcis Malaysia
55	Andre	Phillips	Guyana	Bureau Of Statistics Guyana
56	Mahamoud	Elmi Aye	Djibouti	Institut National De Statistiques
57	Laurentiu Elefterie	Pasarica	Romania	General Inspectorate For Emergency Situation
58	Aïssatou Oury	Diallo	Guyana	Centre National De Gestion Des Catastrophes Et Des Urgences Environnementales
59	Ibrahim	Al Farai	Oman	Gcc - Stat
60	Abdullah	Alyabes	Saudi Arabia	General Authority For Statistics (Saudi Arabia)
61	Hernane	Santiago	São Tomé And Príncipe	Direcção De Planeamento
62	Nasser	Alaskar	Saudi Arabia	General Authority For Statistics
63	Mohammad	Algadeed	Saudi Arabia	General Authority For Statistics
64	Hamed	Alaghbari	Oman	Gccstat
65	Reena	Shah	Kenya	United Nations Statistics Division
66	Berna Burcak	Basbug Erkan	Türkiye	Middle East Technical University Department Of Statistics
67	Iria	Touzon Calle	Spain	Undrr
68	Kanza	Ahmed	United Kingdom	Uk Health Security Agency
69	Virginia	Murray	United Kingdom	Uk Health Security Agency
70	Khadija	El Houdi	Morocco	Planning Department

71	Fatai	Ogunlayi	United Kingdom	Uk Health Security Agency (Ukhsa)
72	Janet	Geoghagen-Martin	Jamaica	Self-Employed
73	Edwin Tito	Magoti	Tanzania	Eastern Africa Statistical Training Centre (Eastc)
74	Abdoulaye	Ndiaye	Senegal	Directorate Of Civil Protection, Ministry Of Interior
75	Meghan	Cook	Australia	Uk Health Security Agency
76	Cyrus	Agbegnigan	Benin	Unfpa
77	Salah	Al Muzahmi	Oman	Gccstat المركز الاحصائي لدول مجلس التعاون الخليجي
78	Ulisses António	Lima Da Cruz	Cabo Verde	National Institute Of Statistics Of Cabo Verde
79	Rukhe Zehra	Zaidi	Pakistan	Fao
80	Zaynab	Shuman	Lebanon	Lebanese Red Cross
81	Jaroslav	Mysiak	Slovakia	Euro-Mediterranean Centre On Climate Change
82	Rodéric	Agbanlinsou	Benin	Agence Nationale De Protection Civile
83	Amir	Shahmohammadian	Iran	Iiees
84	Dona	Sagbohan	Benin	Unfpa
85	Irasema	Alcántara-Ayala	Mexico	National Autonomous University Of Mexico
86	Pierre-Jean	Clausse	France	Génération Maastricht
87	Prisca Marie Pascale	Umugeni	Rwanda	Unfpa
88	Aleksandra	Bozheva	Canada	Statistics Canada
89	Mariana	Ibrahim	Lebanon	Unhcr
90	Myer	Glickman	United Kingdom	Office For National Statistics, Uk
91	Edward	Anderson	United Kingdom	World Bank
92	Nuria	Campos Sánchez	Costa Rica	Comisión Nacional De Prevención De Riesgos Y Atención De Emergencias (Cne). National Commission For Risk Prevention And Emergency Care (Cne).
93	Sergio	Sánchez Castillo	Costa Rica	Comisión Nacional De Prevención De Riesgos Y Atención De Emergencias (Cne)
94	Roberto	Schiano Lomoriello	Italy	Undrr
95	Xavier	Romão	Portugal	University Of Porto - Faculty Of Engineering
96	Alex	Chunet	France	World Bank / European Space Agency
97	Ella	Yolande Éméline	Cameroun	Department Of Civil Protection

98	Yokoi Koivogui	Yokoi Koivogui	Guyana	Expert Consultant En Réduction Des Risques De Catastrophe Au Ministère De De L'Environnement Et Du Développement Durable/Guinée
99	Ana Trinidad	Rivera	Philippines	Food And Drug Administration, Philippines
100	Bannel S.	Dennis	Liberia	Liberia Institute Of Statistics And Geo-Information Services
101	Syed Ibrahim	Mohd Jamaluddin	Malaysia	Department Of Statistics Malaysia
102	Yumi	Shiomi	Japan	Sasahara Akiso
103	Suad Mubarak Khalfan	Aal Abdulsalam	Oman	Gccstat
104	Mohammed	Aldkhayel	Saudi Arabia	General Authority For Statistics
105	Batoul	Obaid	Jordan	Gccstat
106	Shoko	Kabuto	Japan	Cabinet Office, Government Of Japan
107	Amal	Althani	Qatar	جهاز التخطيط والإحصاء
108	Ahmed Hamed Abdulla	Al Rawahi	Oman	Gcc-Stat
109	Pramod	Raj Regmi	Nepal	Central Bureau Of Statistics
110	Sacha Gilbert	Baud	Austria	Bundesanstalt Statistik Oesterreich (Statistics Austria)
111	Piyapat	Nakornchai	Thailand	Unescap
112	Maya	Zahabi	Lebanon	Fao
113	María	Postigo	Spain	Ministry For The Ecological Transition And The Demographical Challenge
114	Ana Lucía	Londoño	Spain	Oecd
115	Jana	Tafi	France	Research In Environmental Statistics And Accounting
116	Majed	Alobaidli	Qatar	Supreme Committee For Crisis Management
117	Shamsul (Bapon)	Fakhruddin	New Zealand	Tonkin & Taylor International
118	Zhoor	Almoalem	Saudi Arabia	General Authority For Statistics
119	Faisal	Alshowaier	Saudi Arabia	General Authority For Statistics
120	Veronica Maria	Casartelli	Italy	Euro-Mediterranean Centre On Climate Change / Italian Civil Protection Department
121	Faleh	Aldham	Saudi Arabia	General Authority For Statistics
122	Shamsalbroud Mohammed	Alhassan Ahmed	Sudan	الجهاز المركزي للإحصاء
123	Ahmed	Nagi	Egypt	Cabinet- Information And Decision Support System
124	Kada Sakina	Kada	Morocco	Haut Commissariat Au Plan

125	Apolonija	Oblak Flander	Slovenia	Statistical Office Of The Republic Of Slovenia
126	Paul	Mcelvaney	Ireland	Central Statistics Office Ireland
127	Abo Kwame Alain Serge	Boignini	Ivory Coast	Office Of The Prime Minister
128	Ebtesam	Mohammed	Sudan	الجهاز المركزي للإحصاء
129	Karina Miroslava	Cázarez Grageda	Mexico	Paris21
130	Wilson	Phiri	Zambian	Imf
131	Evrim	Bese Goksu	Türkiye	International Monetary Fund
132	Joaquim Jose	Martins Guilhoto	Portugal	Imf
133	Miguel	Cruz	United States	Centers For Disease Control And Prevention/Agency For Toxic Substances And Disease Registry, Office Of Emergency Management, Natural Hazards Team
134	Cinglun	Huai	Myanmar	Cso
135	Luka	Selu	Tuvalu	Government Of Tuvalu
136	Uyangaa	Burenduuren	Mongolia	National Statistics Office
137	Dematagodage Dona Gauri Anoja	Seneviratne	Sri Lanka	Director General, Department Of Census And Statistics, Sri Lanka
138	Jutta	May	Germany	Consulting
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143	Dicksha	Mewa Hurdowar	Mauritius	Statistics Mauritius
144	Mohanad	Almodhi	Saudi Arabia	General Authority For Statistics
145	Wejdan	Alhedyani	Saudi Arabia	General Authority For Statistics
146	Budsara	Sangaroon	Thailand	National.Statistics Offices
147	Dragos-Augustin	Dobre	Romania	General Inspectorate For Emergency Situations
148	Radmila	Cickovic	Serbia	Agency Of Statistics For Bosnia And Hercegovina
149	Alexander	Khrenov	Russia	Cis-Stat
150	Nelli	Baghdasaryan	Armenia	Statistical Committee
151	Marie-Ange	Baucher	France	Oecd
152	Ahmad	Mukhtar	Pakistan	Fao
153	Hamed	Alaghbari	Oman	Gccstat
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158	Kamani	Priyangika	Sri Lanka	Department Of Census & Statistics
159	Sony	Nhim	Cambodia	Civil Servant
160	Manal	Hasani	Bahrain	Iga
161	Hakan	Yazicioglu	Türkiye	Turkish Statistical Institute (Turkstat)
162	Fathi Isa Naser Isa	Bureshaid	Bahrain	Information And E-Government Authority (Iga)
163	Samphos	Pen	Cambodia	Statistic
164	Xuan	Che	China	Undrr
165	Ana	Ramos	Portugal	Statistics Portugal
166	Adnan	Ceric	Bosnia & Herzegovina	Agency For Statistics Of Bosnia And Herzegovina
167	Apostolos	Kasapis	Greece	Hellenic Statistical Authority (Elstat)
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169	Catalina	Artavia Pereira	Costa Rica	Comisión Nacional De Prevención De Riesgos Y Atención De Emergencias (Cne)
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171	Fatai	Ogunlayi	United Kingdom	Uk Health Security Agency
172	Saratrai	Watcharaporn	Thailand	National Statistical Office Of Thailand
173	Mohamed	Ben Said	Tunisia	Ministère De L'Environnement
174	Gamil	Mokbel	Yemen	Minstry Of Water And Environment
175	Ahmad	Almanaimni	Oman	المركز الوطني للإحصاء والمعلومات
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202	France	Labrecque	Canada	Statistics Canada
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204	Alcides	Nunes González	Paraguay	Instituto Nacional De Estadística
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210	Andrew	Simpson	United Kingdom	Government Of Bermuda, Department Of Statistics
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236	Osamah Ibrahim Mohammed	Al-Azzawi	Iraq	Ministry Of Environment
237	Veronika	Zhosan	Belarus	Belstat
238	Mahmut	Kutlukaya	Türkiye	International Monetary Fund
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251	Douglas	Guell Vargas	Costa Rica	Geographer
252	Francesco	Gaetani	Italy	Unep
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255	Daniel	Hill	New Zealand	National Emergency Management Agency - New Zealand
256	Jurgita	Damskiene	Lithuania	Statistics Lithuania
257	Alexei	Pascari	Moldova	General Inspectorate For Emergency Situations
258	Eileen	Capilit	Philippines	Asian Development Bank
259	Ausra	Jablonskiene	Lithuania	Statistics Lithuania
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263	Katsiaryna	Artsimenia	Belarus	Belhydromet
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265	Adherbal	De La Rosa	Panama	Ministerio De Gobierno /Sinaproc
266	Sandra Alicia	Mora Corro	Mexico	Inegi

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270	Nguyen	Thanh Tu	Vietnam	General Statistic Office
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273	Briony	Ankor	Australia	Australian Bureau Of Statistics
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277	Vishal	Ramsamy	Mauritius	National Disaster Risk Reduction And Management Centre
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279	Luke	Verghese	Australia	Australian Bureau Of Statistics
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283	Ludmila	Lungu	Moldova	National Bureau Of Statistics
284	Elena	Cojocaru	Moldova	National Bureau Of Statistics
285	Giovanna	Tagliacozzo	Italy	National Statistical Office
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295	Omar	Alfaro	El Salvador	Dirección General De Protección Civil, Prevención Y Mitigación De Desastres
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297	Tuan Anh	Nguyen	Vietnam	H.E. Mrs. Nguyen Thi Huong, General Director, General Statistics Office Of Viet Nam
298	Louis	Coetzee	Australia	Australian Bureau Of Statistics
299	Robert Matthew	Beaty	Australia	Australian Bureau Of Statistics
300	Manilath	Chanthabounxay	Laos	7
301	Raditya	Jati	Indonesia	National Disaster Management Authority Of Indonesia (Bnpb)
302	Rajesh	Sharma	India	Undp
303	Edita	Omerzo	Croatia	Croatian Bureau Of Statistics
304	Bazarragchaa	Duudgai	Mongolia	The National Emergency Management Agency
305	Fernanda	Araújo	Portugal	Statistics Portugal
306	Loro	Modise	South Africa	Statistics South Africa
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313	Leidy	Ventura	Dominican Republic	One
314	Maria Luisa	Pimenta	Brazil	Reseacher On Ibge
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317	Teerapong	Praphotjanaporn	Thailand	Unescap

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319	Soheil	Rastan	Canada	Escwa
320	Najet Abid Ep Torjmane	Abid	Tunisia	L'Institut Nationale De La Statistique Ins
321	Ahmed	Al Maymani	Oman	المركز الوطني للإحصاء والمعلومات
322	Rui	Kotani	Japan	Group On Earth Observations (Geo)
323	Hedi	Saidi	Tunisia	Aitrs
324	Shahira	Wahbi	Sudan	League Of Arab States
325	Ruba	Alkhalaf	Syria	Central Bureau Of Statistics
326	Anoja	Seneviratne	Sri Lanka	Director General
327	Mouza	Alzaabi	United Arab Emirates	Environment Agency - Abu Dhabi
328	Auriane	Denis-Loupot	French	Undrr
329	Ruba	Alkhalaf	Syria	Central Bureau Of Statistics
330	Yadukrishna	Maya	India	Sarkar
331	Osamah	Mohammed	Iraq	Ministry Of Environment
332	Mustafa	Aljuboori	Iraq	League Of Arab States
333	Ahmad	Muhaimeef	Iraq	Un Habitat
334	Suad	Al Izki	Oman	Gccstat
335	Hassan	Ahmed	Somalia	Ministry Of Humanitarian Affairs And Disaster Management
336	Gamil	Mokbel	Yemen	Ministry Of Water And Environment
337	Emil	Ivanov	Bulgaria	Unsd
338	Einar	Bjoergo	Norway	Unitar - Unosat
339	Abd Almonem	Sanad	Egypt	الاكاديمية العربية للعلوم والتكنولوجيا والنقل البحرى
340	Iveth	Cruz	Dominican Republic	Mepyd
341	Salah	Almuzahmi	Oman	Gccstat
342	Gbetongninougbo David	Boko	Benin	Uneca
343	Staffan	Åkerblom	Sweeden	Statistics Sweden
344	Atilla	Karaman	Türkiye	Sesric
345	Seyid Tahir	Mahmud	Türkiye	Sesric
346	Amar	Belhadj-Aissa	Algeria	المركز العربي للوقاية من أخطار الزلازل و الكوارث الطبيعية الأخرى The Arab Centre For Prevention From Earthquakes Dangers And Hazards Other Natural ((Acpend
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348	Deepak	Chapagain	Nepal	Volunteer Corps Nepal (Vcn)
349	Samir Kumar	Das	India	Self Legal Practitioner

350	Joe Louis	Gajutos	Philippines	Lgu Mapanas
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352	Ruel	Abello	Australia	Australian Bureau Of Statistics
353	Onkar	Puri	India	Delhi Civil Defence
354	Sanjay	Acquilla	Australia	Resilience Nsw
355	Abeer	Al Aysah	Jordan	Federal Competitiveness And Statistics Centre
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358	Joseph	Omony	Uganda	Ministry Of Health Uganda
359	Baping	Dieu-Donne	Chad	Undp-Tchad
360	Jenny	Argüello	Ecuador	Inec
361	Ukachukwu	Macpherson Ifeanyi	Nigeria	Global Environmental And Climate Conservation Initiative
362	Somaplage	Kamani Priyangika	Sri Lanka	Director General , Department Of Census &Stay
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365	Viveca	Norén	Sweeden	Swedish Civil Contingencies Agency, Msb
366	Houcein	Mejdoub	Mauritania	Ministry Of Finances
367	Sawsan	Bou Fakhreddine	Lebanon	Drm U{Nit - Undp
368	Sokol	Vako	United States	Unsiap
369	Amina	Omari	Algeria	Algeria
370	Mohammed	Alqahtani	Qatar	Civil Defense
371	Yosra	Ben Hamana	Tunisia	Planning And Statistics Authority
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373	Read	Hassan	Egypt	Information And Decision Support Center Cabinet Egypt
374	Yasmeen	Alawamleh	Jordan	Un Habitat - Regional Office Of Arab States
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376	Anoja	Seneviratne	Sri Lanka	Director General
377	Frank	Verschaeren	Belgium	Statistics Belgium
378	Charbel	Abou Chakra	Lebanon	Un-Habitat
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382	Ghayas	Al Mokhtar	Lebanon	The General Secretariat Of The Supreme Defense Council In Lebanon
383	Sara	Jbara	Morocco	Interior Ministry
384	Virginia	Bathan	Philippines	Philippine Statistics Authority
385	Fatima	Catchero	Philippines	Philippine Statistics Authority
386	Faith Lea	Cabrera	Philippines	Philippine Statistics Authority
387	Francisc	Senzaconi	Romania	General Inspectorate For Emergency Situations
388	Bahtat	Yassine	Morocco	Directorate General Of Civil Protection/ المديرية العامة للوقاية المدنية
389	Giovanna	Tagliacozzo	Italy	Istat
390	Salim	Ahned	Bangladesh	Ministry Of Disaster Management And Relief
391	Wafa	Aboul Hosn	Canada	Unescwa
392	Ross	Eisenberg	United States	World Bank
393	Zeina	Azar	Lebanon	World Bank
394	Said	Alsarmi	Oman	Civil Aviation Authority
395	Bouh	Omar Ali	Djibouti	University Of Djibouti
396	Abeer	Alaysah	Jordan	Federal Competitiveness And Statistics Centre
397	Gbetongninougbo David	Boko	Benin	Uneca
398	Nedal Abdelqader Abdallah	Katbehbader	Palestine	Environment Quality Authority
399	Hayatu	Abdulkadir	Nigeria	National Emergency Management Agency (Nema)
400	Salim	Ahmed	Bangladesh	People'S Republic Of Bangladesh
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403	Mohamad	Hossary	Lebanon	Escwa
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409	Salma	El Amrani	Morocco	Ministère D'Intérieur
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411	Robert	Smith	Canadian	Midsummer Analytics
412	Nedal Abdelqader Abdallah	Katbehbader	Palestine	Eqa
413	Amna	Mohammed	Sudan	المنظمة العربية للتنمية الزراعية
414	Ayodele	Marshall	Barbados	Escap
415	Limiaa Abdelgafar Khalfalla	Ahmed	Sudan	Arab Organization For Agriculture Development(Aoad)
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451	Liliane	Nassr	Lebanon	Unescwa
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453	Nada	Muhammad	Syria	Ministry Of Agriculture / Mitigation Fund For The Effects Of Drought And Natural Disasters On Agricultural Production
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455	Jairo	Estacio Almeida	Ecuador	Undrr
456	Moataz	Elmasry	Egypt	World Food Programme
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459	Patricia	Delgado Samada	Cuba	Eclac