

SUMMARY REPORT

Regional Learning Platform: Mainstreaming Disaster Risk Reduction and Resilience into Sustainable Development with a Focus on Poverty Eradication

29-31 March 2017

United Nations Conference Center (UNCC), Bangkok, Thailand

A. Organization of the Regional Learning Platform

1. The Mainstreaming Disaster Risk Reduction and Resilience into Sustainable Development with a Focus on Poverty Eradication Regional Learning Platform was organized by the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) from 29-31 March 2017 in Bangkok, Thailand, and was held in the context of the fourth session of the Asia-Pacific Forum on Sustainable Development (APFSD).
2. The aim of the workshop, convened under the 9th Tranche of the Development Account (DA)-supported project *“Enhancing knowledge and capacity to manage disaster risk for a resilient future in Asia and the Pacific,”* was to enhance the knowledge and capacity of policymakers and government officials to utilize new and innovative methods and tools for integrating disaster risk reduction into national development planning and into poverty reduction strategies, with a specific focus on understanding disaster risk using operational tools and applications, communicating disaster risk, and ensuring coherence between the 2030 Agenda for Sustainable Development, the Sendai Framework for Disaster Risk Reduction, and the Paris Agreement on Climate Change (see Agenda in Appendix 1).
3. The key outcomes of the workshop will inform the development of the 2017 Asia Pacific Disaster Report, to be launched in October 2017, as well as future ESCAP activities.

B. Participation

1. The regional workshop was attended by high level officials from Bhutan, Cambodia, India, Kazakhstan, Lao People’s Democratic Republic, Maldives, Mongolia, Myanmar, Nepal, Pakistan, Philippines, Sri Lanka, Sweden, Timor-Leste, Thailand, The Islamic Republic of Iran and Vietnam.
2. Representatives and experts from the following United Nations entities attended the workshop: UNESCAP, UNDP and UNISDR. Representatives and experts from the following organizations also participated: RIMES, IWMI, ADPC, and the APEC Climate Center. The list of participants is attached as Appendix 2.

C. Meeting Synopsis

6. The key target groups and constituencies of IDD’s programme of work participated in the Regional Learning Platform on the theme Mainstreaming Disaster Risk Reduction and Resilience into Sustainable Development with a Focus on Poverty Eradication, namely national early warning agencies (meteorology and hydrology) and national disaster

management agencies. Of the 30 participants, 19 were nominated by ESCAP member states, two were from UN agencies, and nine were from technical institutes, intergovernmental organizations, and other agencies.

7. Session 1 on “Building the Resilience of the Poor to Achieve the SDGs” featured two-government nominated experts who played major roles in managing major disasters in the region (2013 Typhoon Haiyan in the Philippines and 2015 Nepal earthquake) and led to an instructive exchange of lessons learned around how reconstruction and recovery could incorporate resilience perspectives and contribute to poverty eradication; making resilient land use planning successful; and making hazard early warning understandable and actionable.
8. Session 2 on “Understanding disaster risks” began by showcasing IDD’s ongoing analytical work in the context of the Asia-Pacific Disaster Report 2017, including the application of Average Annual Loss (AAL) as a probabilistic approach to estimating future disaster risk, which, when paired with more deterministic approaches, provides a more complete picture of future disaster risk. At the micro-level, a well-being loss multiplier can provide a more nuanced assessment of how disasters affect different income classes, especially the poorest 20 percent. Initial findings show that the poorest populations lose more in well-being losses than non-poor for same \$1 in asset losses. This helps build the case for targeting poor populations in DRR interventions. The latter part of Session 2 focused on tools to better assess and manage disaster risk, particularly for poor populations, and included presentations and discussions on Post-Disaster Needs Assessment (PDNA) methodologies; disaster loss databases at national and sub-national levels to capture losses from extensive, as well as intensive disasters; the application of space-based technology in monitoring and forecasting disaster risk; and the innovative Index-based Flood Insurance program which pays out when fixed parameters are met, e.g. rainfall, flooding persistence, without requiring on-site damage assessments. Participants requested assistance from ESCAP in a variety of areas, including guidelines for collecting disaggregated data to better understand disaster risk and target DRR interventions, and support for countries without space technologies to access, understand and use available data.
9. Session 3 on “Communicating risks” highlighted the status and impacts of the established Monsoon Forums in many countries. Cambodia, Myanmar, and Sri Lanka acknowledged the role of ESCAP’s support in operationalizing the Monsoon Forum in their countries. They reported that the increased understanding of climate risks due to the Monsoon Forums resulted in concrete measures to reduce climate risks in various sectors, including agriculture, health, energy, and irrigation. Consequently, they have seen a significant demand for more tailored climate information products and services to manage climate risks. ESCAP’s follow-up support to build national capacities for impact-based forecasting was reported as an important step towards meeting this demand.
10. Session 4 on “mainstreaming disaster risk reduction and resilience into sustainable development for poverty eradication” featured a presentation and discussion on the linkages between poverty and disasters in the region. Highlights included the fact that a key to fighting poverty is building resilience and reducing exposure to disasters. It was also highlighted that economic growth is key to eradicating poverty but no guarantee it will continue, especially as long as disaster risk is not integrated into national planning and development interventions. Absolute poverty is sharply declining in Asia-Pacific. However, addressing multi-dimensional poverty would be much more challenging. Participants expressed support for the focus on poverty and disasters in the upcoming APDR 2017, and

requested assistance in how to contextualize global/regional information to countries in Asia-Pacific region, as well as how to close the gap between advancements in science and operationalizing those advancements for forecasting.

11. The key recommendations from participants at the meeting that could be taken up by ESCAP ICT and Disaster Risk Reduction Division (IDD) in the context of its current mandates are: (i) to continue its work in bridging climate science and policy, particularly in the context of operationalizing the national climate outlook forums/climate forums in the region; (ii) provide guidelines for collecting disaggregated post-disaster data, including gender-disaggregated data; (iii) provide templates, guidelines, and capacity building support for harnessing advances in data science, geo-spatial modeling, and earth observation for disaster risk reduction; and (iv) deepen regional cooperation for cross-border disasters.

D. Meeting Proceedings

Opening Session

13. Ms. Tiziana Bonapace, Director, Information and Communications Technology and Disaster Division (IDD), ESCAP, opened the Regional Learning Platform by welcoming all participants, and highlighted the importance of building resilience to disasters as indispensable in leaving no one behind in the Asia-Pacific context. Ms. Bonapace noted that this event is being held within the context of the Asia Pacific Forum on Sustainable Development, and that building resilience of the poorest populations to disasters is critical to achieving the 2030 SDGs. The IDD Director called attention to slow-onset disasters, such as drought, that do not make it into the headlines. Ms. Bonapace noted that the insights from participants in this meeting will assist ESCAP IDD in developing the upcoming edition of the Asia-Pacific Disaster Report which will be released on 13 October of this year. She noted that the report will provide an analytical and evidence base to deepen our understanding of the linkages between poverty and disasters in our region. Ms. Bonapace concluded by describing the expected outcomes of the platform, namely to exchange experiences and share perspectives on how to effectively mainstream disaster risk reduction into sustainable development, with a focus on supporting country efforts to eradicate poverty, as called for by SDG 1, and to identify elements to further strengthen regional cooperation on disaster risk reduction to support national efforts to achieve the SDGs. Ms. Bonapace noted that the structure of the Regional Learning Platform follows the story line of understanding the linkages between disasters and poverty, communicating risks to the right people at the right time, and policy interventions to meet 2030 SDGs.

Session 1: Building the resilience of poor people to achieve the Sustainable Development Goals: Framing the challenge

15. The first Session was moderated by Mr. Erdenebat Eldev-Ochir, Senior Officer in charge of International Cooperation, National Agency for Meteorology and Environment Monitoring, Mongolia.
16. Mr. Sanjay Kumar Srivastava, Chief, Disaster Risk Reduction Section, ESCAP, presented an overview of the linkages between poverty and disasters in Asia-Pacific, focused on the challenges and opportunities for building the resilience of the poor. Mr. Srivastava began by pointing out that the 2010 Asia-Pacific Disaster Report (APDR) brought into focus that a person living in Asia-Pacific is four times more at risk than those in Africa, and 25 times

than those in Europe and North America. He then highlighted the fact that a poor person with critical vulnerability and exposure is 3 to 4 times more at risk than non-poor persons in the region, as well as the fact that poor populations bear the brunt when disasters strike, particularly those in the agricultural and urban poor sectors. Based on recent research, he pointed out that the disaster losses to the poor have been under-estimated by 2-3 times, especially when well-being losses are taken into account. Using a case study of drought-affected farmers in Karnataka, India, Mr. Srivastava said that the most severe impacts, including food security, were on farmers with the smallest holdings (below 0.8ha). In Pakistan, an example of well-being losses is the lower primary school enrollment rates due to a series of disasters from 2005-2010. Regional multi-hazard risk hotspots can be identified by overlaying risk data for cyclones, earthquakes, floods and landslides, and these hotspots often coincide with high poverty incidence, and disasters often have transboundary origins. Mr. Srivastava concluded by highlighting the overarching themes of the Regional Learning Platform: understanding the disaster risk of poor populations; communicating the risk to key stakeholders; and risk-sensitive poverty eradication policy responses.

17. Mr. Hans Joakim Guttman, Executive Director, Asian Disaster Preparedness Center, welcomed the fact that ESCAP emphasizes evidence-based planning, and pointed out that various methodologies for estimating disaster losses need agreement across sectors. He noted that Goal 1 of SDGs is unlikely to be reached if disaster risk reduction is not improved. Mr. Guttman highlighted the fact that we need to pay attention to authorities' relationship to poor populations, since, when disasters strike, authority can shift to new agencies who may or may not have built trust with those vulnerable communities. He noted that we can't lose sight of slow-onset disasters, like drought, as it's difficult to say when it's a disaster, thereby triggering resource mobilization efforts. Often, authorities are too late, and are forced to move straight to recovery. He emphasized that securing financial resources to prepare for disasters is much harder than for disaster response. As a result, we need more support for tools to estimate benefits of disaster risk reduction (DRR)/preparedness. He shared his thoughts on the way forward: a. focus on pro-poor preparedness, recognize specific vulnerabilities of poor groups. e.g. poor in coastal areas; b. ensure poor have access to early warning system (EWS), where to evacuate, where to get help, and need clarity in authorities' decision-making; c. Mainstreaming DRR – we need to work better with other Ministries and the private sector, as well as need to gain credibility with others in development; d. Urban areas need more attention - improve resilience of companies so workers can get back to work. The reality is that companies don't invest in preparedness because of uncertainty; e. insurance is the elusive Holy Grail for the poor. We need to find ways to extend insurance to the poor. Mr. Guttman concluded by stating that ESCAP's role is important in fostering regional cooperation, which provides experience sharing, a platform for support and builds solidarity. He noted that successful regional cooperation needs sustained financial support to build trust amongst players, and that meetings are important to increase familiarity and build trust amongst a diverse set of actors.
18. Mr. Edgar Lino Posadas, Regional Director, Office of Civil Defence, Philippines, focused on the Typhoon Haiyan hit areas of Eastern Visayas, in November 2013. He noted that the national DRR and Management Act of 2010 was the first of its kind in Asia, which mainstreamed DRR by law. The Philippines want to be more proactive and move to EWS prevention/preparedness stages (as opposed to recovery). He noted that 16m affected, 6300 dead, 30k injuries, 1k missing. 1.1m houses damaged by Haiyan. The government has provided financial assistance to 4375 beneficiaries of dead, 5819 injured as of March 2017. He noted that vulnerability is also a product of poverty and inequality, not just exposure. He

highlighted the remaining challenges: dealing with storm surge, incapacity at local level, lack of registry of vulnerable groups, coordination with responders, and concretely addressing poverty alleviation by govt. He noted that the lessons learned thus far include the following: building resilience requires changing visions, not just locations; Build Back Better means imagining development differently, more strategically; vulnerability is a function of poverty, inequality, and insufficient participation; risk assessment is of paramount importance; disasters are too huge and too complex and we need “all of society” approach; success depends on government leadership, mustering collective strength of stakeholders. He concluded by noting that the Philippines was prepared, but not prepared for the scale and intensity of Haiyan.

19. The discussion for this session was based on several key issues related to the recovery process of disasters; in particular it was noted that post-Gorkha earthquake, there were particular challenges on building back better as well as struggles in the housing sector such as people not staying at relocation sites because of a lack of basic services. There was a consensus that a better focus is needed on meeting the basic needs to keep people in safe sites and on comprehensive land use planning and the criticality of providing livelihoods. The discussion also focused on gender disaggregated data and the challenges of implementing gender sensitization in planning and policy.

Session 2: Understanding disaster risks: operational tools, techniques and applications for managing disaster risks and their impacts

20. Session 2 was moderated by Mr. Ali Shareef, Deputy Director-General, Maldives Meteorological Service. Part 1 focused on understanding disaster risks and their impacts on the poor – both historical and expected - as a critical step towards poverty eradication.
21. Mr. Sung Eun Kim, Associate Economic Affairs Officer, ESCAP, presented on ex-ante annual average loss (AAL): Measuring and estimating future disaster impacts at macro-level. The presentation focused on several key points: (1) Asia-Pacific is affected 4 to 5 times more than the rest of the world and economic development in Asia-Pacific hasn't been accompanied by increase in resilience; retrospective disaster loss estimates fail to take into account infrequent but severe disasters (for example in World Risk Index in 2014, Nepal was at low risk but did not foresee the Gorkha Earthquake); (3) using prospective/probabilistic provides a way of estimating future disaster losses; and (4) CSN need to be paid attention to since they suffer disproportionate disaster risks both in terms of retrospective analysis and AAL. Mr. Kim highlighted the fact that we need to combine retrospective and prospective methodologies (since both have limitations) to get a clearer picture of risk. Furthermore, we need to add well-being losses to asset losses to better understand total impact/risk for people in Asia-Pacific.
22. Ms. Madhurima Sarkar-Swaigood, Economic Affairs Officer, ESCAP, presented on ex-ante annual average loss and dis-aggregated poverty mapping in multi-hazard risk hotspots: Measuring and estimating disaster impacts at micro-level. Ms. Sarkar-Swaigood highlighted three points: (1) there is a nexus of high poverty and disaster loss in Asia-Pacific; (2) poor people lose more in well-being losses than non-poor for same \$1 in asset losses and (3) well-being loss multiplier takes into account a country's socio-economic resilience. Ms. Sarkar-Swaigood noted that well-being loss multiplier can provide a more nuanced assessment of how disasters affect different income classes, especially the poorest 20 percent. This helps build case for targeting poor in DRR interventions. Ms. Sarkar-Swaigood concluded by highlighting that disasters hit poor people the hardest, and poverty is a driver of risk for disasters.

23. Ms. Suekyoung Jessie Lee, Researcher, APEC Climate Center, presented on climate risk assessment in agriculture sector, highlighting a Tonga AgroMet case study. A Climate Information Services platform has been developed to distribute specialized data depending on needs and user profile. The goal was to improve agricultural productivity through ensuring data availability and enhancing agro-climate services. The notable activities of the project include: (1) creating an agricultural database, eg. Tonga Agriculture Data Systems; (2) building capacity of end-users; and (3) assessing user needs, eg. crop disease control, water management, etc. The resultant system, ToCSA, is a web-based, mobile-compatible Decision Support System that has information on crop yield predictions, weather/climate info, AgroMet Indices, crop disease spray planner, crop management simulator, climate smart farming, information by text message, push alarms, easy bulletins, all through a mobile phone-based system. She noted that farmers enter yield data into diary, best parameters for agro-climate models, improved accuracy tailored DSS. The pilot project focuses on specific context and how the information is used; with support from the Green Climate Fund (GCF), the APEC Climate Center is extending the system (VaSCA) to five sectors: fisheries, tourism, infrastructure, water management, and agriculture.
24. Participants made insightful contributions to the discussion noting various issues such as the lack of robust data for both retrospective analysis and prospective analysis. In particular, it was noted that there is a lack of data on drought. Ways to capture poverty data was also discussed; the panel noted that especially for SDGs, many partners organizations are pooling together databases, including gender disaggregated database. The need for data to monitor SGDs was also discussed in this context.
25. Part 2 of Session 1 featured operational tools and applications to identify disaster risks and quantify their impacts particularly on poor populations. Mr. Suman Karna, Special Advisor to CEO, Nepal Reconstruction Authority, Government of Nepal, presented on post-disaster needs assessment with focus on measuring the losses incurred by the poor people: Nepal experience and highlighted that PDNA was used to assess impact (Damage & Loss), define recovery/reconstruction, ensure recovery internalizes the concept of build back better and supports fund raising (\$4.5 billion). He also noted that the Nepal earthquake went further and focused not only on productive sector losses but also on indicators for human development including health, education, inequity, social cohesion, gender, child welfare, and human rights. The preliminary findings from the PDNA demonstrated that many families were homeless, without livelihood and were thus greatly vulnerable to food insecurity.
26. Mr. Sanny Jegillos, Senior Advisor, UNDP Bangkok Regional Hub presented on the application of disaster loss databases for assessing the linkages between natural hazards and poverty in Asia by working with 15 countries in the region to develop their own databases while complying with certain level of standards, in line with Sendai indicators. The data, at high resolution is focused at the sub-district level and house information about disaster occurrences and impact over long period of time (20-30 years), as well as direct impacts of event, population affected and sector damage and losses. The presentation highlighted the difference between Intensive Risk (know where they are, what will happen, e.g. tsunami, cyclones) and Extensive Risk (more frequent, dynamic and widespread, largely invisible to official response systems, affecting livelihoods and poverty, e.g. frequent medium-sized storms) and noted the need to look at extensive risk to assess poverty since vulnerability is built up over time due in part to extensive risks.
27. Mr. V. Jayaraman's, Indian Space Research Organization, Government of India, presentation on Space applications, tools and techniques for monitoring disaster risks and poverty

eradication interventions focused on how space application can integrate DRR, climate change adaptation (CCA), and SDG by supporting a geospatial-based approach to understanding risk: where risk maps can identify villages with high poverty within a watershed to identify hotspots of poverty and environmental degradation. The Sujala Watershed project was highlighted as a good practice model.

28. Dr. Giriraj Amarnath, Theme Leader, Water-related Disaster Risk Management, International Water Management Institute (IWMI)/CGIAR, presented on index-based parametric insurance for floods and droughts. He noted several key points including the usage of satellite data which has made it easier to monitor climate impacts that is a necessary ingredient in parametric based insurance. The presentation stressed that investing in pre-crisis financial risk management eases post-disaster recovery needs. The goal of IWMI pilot projects on Index-based Flood Insurance (IBFI) is to promote risk awareness raising, risk pricing, enabling conditions (regulations), and direct financing of risk reduction measures, so that risk reduction is a pre-condition for insurance for rural farmers in South Asia.
29. The discussion from the session noted several points including the need for a broader data inputs than only rainfall including looking at soil moisture-based insurance, as well as the Drought Index as basis for insurance. The key challenges for index based parametric insurance seem to be to maintain government interest, build capacity, and understand institutional arrangements. It was noted that there could be bilateral and multi-lateral, agreements on data sharing. Philippines requested support from ESCAP on how to use data gathered from space technology, perhaps in the form of templates and guidelines so people on ground can understand it.

Session 3: Communicating risks – The role of multi-stakeholder climate forums

30. Session 3, moderated by Mr. Karma Dupchu, Chief, Hydrology and Water Resources Services Division, National Centre for Hydrology and Meteorology, Bhutan, highlighted the establishment of the seasonal climate forums – normally centered on the onset of monsoons - as a platform for bringing together climate information producers and users. The session focused on lessons learned and scope for supporting poverty reduction by ensuring that risk information reaches poor populations in an easily understandable format and is actionable.
31. Ms. Ruby Rose Policarpio, Institutions Specialist, Regional Integrated Multi-Hazard Early Warning System for Africa and Asia (RIMES), highlighted some successes of national Monsoon Forum and provided an example of Sri Lanka where a significant number of farmers were reached and the department of Irrigation reported savings of \$41m by issuing instructions to Irrigation officials to keep reservoirs 1m below full capacity during recent monsoon period. These savings were connected to potential damages avoided. It was also noted that capacity building is continuous process, that sustained end-to-end interventions are required, and not just one component (needed at both national and community level). The presentation further highlighted the importance of institutional engagement and participation in multiple forums to fully understand and utilize the data and tools available. The presentation highlighted RIMES expertise in customized forecast products; capacity building programs, tools for risk analysis and impact forecasting, all depending on end-user engagement. These include SESAME – a pilot initiative in India and Myanmar, which combines historical data, satellite data, and thresholds; SMART, a multi-hazard potential impact assessment tool; and CRISH, focusing on climate information and public health, e.g. malaria and dengue, and DSS for floods.

32. Mr. Vinson Kurian, Deputy Editor, Business Line, India then presented on how information revolution can help mitigate disasters and reduce poverty noting that effective, result-oriented communication by meteorologists is needed to improve communication of uncertainty, impacts and risks. He called for interpreters to translate meteorological warnings to the common man on the ground.
33. Four panelists then presented their perspectives on Monsoon/Climate Forums from their respective countries. Ms. Khin Cho Cho Shein, Director, Department of Meteorology and Hydrology, Myanmar, noted the concrete impacts of the Forum to date has been improved climate and weather monitoring, and enhanced understanding of, and therefore trust in, the data; however the challenges include lack of financial resources and technical capacity, as well as the ability to communicate information to users in rural areas of Myanmar. Ms. Shein concluded by noting that improvements in early warning systems for floods and landslides are needed, as is being able to deliver seasonal and sub-seasonal impact forecasts for end users, not to mention now-casts information.
34. Mr. Athula Karunanayake, Deputy Director, Department of Meteorology (DoM), Sri Lanka highlighted the priority for the DoM to generate forecasts with finer spatial resolution, based on agro-ecological zones particularly to provide seasonal or monthly outlook forecasts for hydro-catchment areas for the hydropower sector. He noted the need for capacity building and especially for agriculture extension workers and farmers to be better able to understand and use forecasts at various timescales. He also noted that there is a consensus among countries that the Monsoon Forum should be strengthened and additional stakeholders added to the process in the future.
35. Ms. Rosalina G. De Guzman, Assistant Weather Services Chief & Chief, Climate and Agromet Data Section, Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA), Philippines, highlighted the following impacts to date: The Climate Outlook Forum have resulted in several user-specific pilot project to assess and communicate examples of successful use of seasonal climate prediction products, and the values of climate services to specific user sector, for example, the FAO-TCP Building Capacities for A Climate Resilient Tilapia Farming in the Philippines; the generation of user-friendly seasonal climate outlooks; the National Water Resources Board (NWRB), after receipt of forecasts from PAGASA, can determine the potential impacts to water allocation especially during El Niño events; and the Rice Watch Action Network (RWAN), an NGO, built a partnership with PAGASA-Department of Science and Technology (DOST) to conduct Climate Outlook Forum before and after cropping season -over the years of collaboration, local communities and local government partners have greatly appreciated and benefitted from the shared climate information and the mere presence and community interaction of PAGASA staff at the ground level during the conduct of the forum. Successes include: increased overall awareness, education and improved dissemination of climate information and prediction products for early warning and disaster management; and products to assist other sectors to plan for ENSO events, such as Action Plans on Water Supply for Metro Manila from Angat Dam during El Nino 2015-2016. She further noted some challenges including localized climate products that understandable to the end-users; difficulty in the understanding and use of available climate products, particularly on the probabilistic nature of climate advisories; reliability and skill of climate outlook products; spatial and temporal resolution/downscaling; strengthening linkages to users of climate forecasts; and the need for more demonstrations projects to make users aware of current potential for use of climate forecasts in decision-making. She highlighted the following specific needs for products and tools: Sub-seasonal to seasonal climate products (S2S); Developing an

understanding of how seasonal and sub-seasonal forecasts (forecasts within a 10-day to several months) can improve decision making; Long range forecast for Tropical Cyclone; Seasonal Climate Outlook translated into risk scenarios for sectors related to food security, including agriculture, fisheries, water resources, health, and emergency response; Producing tools kits for how seasonal climate forecast can be used in national and local decision-making processes; and the need for more demonstration projects for integrating seasonal climate forecast into the decision making process.

36. Mr. Ryna Oum, Director, Department of Meteorology, Ministry of Water Resources and Meteorology, Cambodia, highlighted that since 2011, they have held six Forum meetings and have developed a good sense of the users' needs. Challenges include lack of financial resources and a communication dissemination system to reach rural farmers. Priority innovations required include: Short, Medium and Long range weather forecast; Extreme weather warning; Communication/dissemination system; Near Real-Time Data Receiving and Transferring; Modelling/Tools for enhanced forecasts; and technology capacity building.
37. Participants commented on the fact that users need sub-seasonal data, and agreed that demand for more information is increasing. RIMES noted the need to move to impact-forecasting, as long-range forecasts can be dangerous for policy makers to use. A participant noted that WMO is moving to supporting impact-forecasting but we need to build capacity, perhaps some demonstration projects.

Session 4: Regional policy and institutional response for mainstreaming disaster risk reduction and resilience into sustainable development for poverty eradication

38. Mr. Srivastava introduced Mr. PG Dhar Chakrabarti, ESCAP Consultant, who presented on the linkages between poverty and disasters in the region. He noted that disasters have long-term impact on the poor and a key to fighting poverty is building resilience and reducing exposure to disasters. He pointed out that the SDG 1 target and relevant indicators are not completely in sync with each other. Dr. Chakrabarti highlighted five strategies for reducing exposure of the poor: assess vulnerabilities and exposures of poor people to various types of natural and manmade hazards; resettle poor from extreme disaster prone areas; improve housing and other living conditions of urban slums; mitigate level of exposures of poor through measures like flood embankments, watershed management, mangrove regeneration etc.; and mainstream reduction of vulnerability and exposure of poor people in development and regulatory framework. He noted that addressing multi-dimensional poverty would be much more challenging and the struggle may continue long beyond 2030 and building resilience of poor and vulnerable would still remain a work in progress.
39. Ms. Kareff Rafisura, Economic Affairs Officer, ESCAP, closed the session by providing an overview of how ESCAP would be taking the information and advice provided in this regional learning platform and apply to its work going forward. Ms. Rafisura noted the strategic opportunity offered by the 2030 Agenda to mainstream disaster risk reduction into development. She summarized the range of tools presented at the meeting (eg. ex ante risk assessment with specific focus on disaster risk to poor; Macro-level: Average Annual Loss (Probabilistic), Disaster Loss Database, climate risk modeling/scenarios – seasonal outlook; Micro-level: Asset /Consumption/Welfare losses (Probabilistic/deterministic); Dis-aggregated poverty mapping; Ex-post damage and loss assessment with specific focus on the poor; and use of innovative technologies for targeting vulnerability/interventions) that can be used to detect and address the differential disaster risks and impacts to poor people. There are common enablers – access to data/tools/techniques; capacity

development to adopt/customize; peer learning & knowledge sharing. She then noted the second priority area for the way forward, namely the need to transform early warning systems to improve resilience. Examples of priorities include: provide information on potential impacts, not just hazard; actionable risk information to right people at the right time; provide sufficient lead time – key to risk-sensitive decision-making and timely response; Increase engagement with users, e.g. through multi-stakeholders platform (Monsoon Forum/Climate Outlook), media; and improve linkages with response capability. Key enablers include: development of impact-based forecasting, risk-informed early warning systems; mandate & support for early warning agencies & partnerships; and strengthening/establishment Monsoon Forums/Climate Outlook/Media support. Early warning information alone will not be able to deliver equitable development outcomes to the poor; addressing vulnerability to disasters need to be addressed across sectors. The third key area for the way forward is strengthening key policy enablers for building resilience of poor people. Policy options for resilience include: resilient agriculture, housing, health, living conditions; supporting alternative options for livelihood and income; strengthening social protection and insurance (index based parametric insurance). In addition, it will be important to harness advances in technology, data & innovations for disaster risk reduction. Further, it will be critical to deepen regional cooperation for cross-border disasters; and ensuring coherence of SDGs & Sendai Framework at both strategic and operational levels.

APFSD Side Event: Mainstreaming Disaster Risk Reduction for Poverty Reduction in Asia Pacific

40. At the APFSD side event, organized by the UN Asia Pacific Regional Coordination Mechanism Thematic Working Group on Disaster Risk Reduction and Resilience, Opening Remarks were given by Ms. Tiziana Bonapace, Director, ICT and DRR Division, ESCAP. Ms. Bonapace highlighted remarkable achievements in past few years in international cooperation, namely the development of six global agreements. She noted that common to the six agendas is resilience to disasters. Ms. Bonapace added that building resilience is a requirement for sustainable development, which is why it was chosen as the theme for the 2017 APDR. Ms. Bonapace highlighted how the Asia-Pacific UN Regional Coordination Mechanism (RCM), led by ESCAP, leverages each UN organization's strengths in order to deliver results that are bigger than the sum of its parts, and the DR3 is an important part of this. Ms. Bonapace noted that the RCM provides support to sub-regional organizations as well, and that resilience to disasters is spread across all of the RCM architecture.
41. Hon. Dr. Min Bahadur Shrestha, Vice Chairman, National Planning Commission, Nepal, provided the keynote address, highlighting how Nepal is organizing itself to work towards meeting the SDGs by 2030, with a focus on how DRR is being incorporated into sectoral thematic working groups. Dr. Shrestha expressed his appreciation to UN agencies, including ESCAP, for their support in capacity building and building back better dialogue since the Gorkha Earthquake. Dr. Shrestha highlighted the fact that Nepal has a national strategy for integrating DRR into all sectors and requested that UN agencies design support for Nepal in an integrated manner.
42. Dr. P G Dhar Chakrabarti, former Secretary National Disaster Management Authority of India, presently Distinguished Fellow, The Energy and Resources Institute, New Delhi, then introduced a draft guidance document of the TWG-DR3 on the Coherence of the 2030 Agenda for Sustainable Development: Challenges, opportunities and strategies for the Asia-

Pacific region. Dr. Chakrabarti noted the need to develop a shared understanding of what resilience means. He provided ten keys to unpacking resilience in the context of the global agreements, namely: 1. Sustainable development is the core of all the frameworks; 2. Resilience is at the heart of sustainable development; 3. Resilience is a cross-cutting issue; 4. Building resilience not for government alone; 5. Building resilience require strong coordination; 6. Resilience can't be achieved without investment; 7. Resilience requires all round capacity development; 8. Resilience is strengthened by research and innovation; Resilience is facilitated through international cooperation; and 10. Progress achieved in building resilience must be monitored. Dr. Chakrabarti concluded by highlighting five strategies for building coherence of DRR and Resilience: 1. Every country should develop national strategic action plan and road map for implementation of 2030 global development agendas; 2. National strategic action plan should not remain limited to SDGs; these should cover the entire gamut of 2030 global development agendas; 3. National strategic action plan should address the issues of building resilience to disasters across all sectors as highlighted in all the global frameworks of 2030 development agenda; 4. National strategic action plan should lay down generic guidelines for building resilience across all relevant sectors of development; and 5. National strategic action plan should provide a blueprint on the means of implementation of the plan.

43. A panel discussion followed, moderated by ESCAP where Mr. Mohammad Hadi Daryaei, Deputy for International Affairs, Management and Planning Organisation, Office of the President, Islamic Republic of Iran, highlighted the importance of establishing the Asia Pacific Centre for the Development of Disaster Information Management (APDIM), based in Tehran noting that transboundary and multidimensional hazards are a serious challenge and highlighted the need to bridge information gaps, the need for more integration, and south-south cooperation.
44. H.E. Mr. Theng Pagnathun, Director General of Planning, Ministry of Planning, Cambodia, discussed how Cambodia is mainstreaming DRR in development including integrating disaster and climate change adaptation into the National Strategic Plan 2014-18. He noted that the efforts are producing results, as they have seen a 47% to 10% poverty decrease from 2007 to 2014, coupled with 7% GDP growth annually. He noted that Cambodia is in the process of localizing SDGs to national context and is also committed to achieving the Sendai Framework and Paris Agreement targets as well.
45. Mr. Nilesh Prakash, Chief Economic and Planning Officer, Ministry for Economy, Fiji, presented the key lessons learned from TC Winston. He noted that if Fiji needs to mainstream DRR across all sectors and concluded by noting that the UN can help by developing a more robust business case for adaptation and DRR, as well as developing methodologies and tools for risk assessment.
46. Mr. Sanjay Srivastava, Chief, Disaster Risk Reduction Section, ESCAP, commented that the RCM brings out best of UN organizations in Asia-Pacific, citing the ENSO in 2015-16 as an example of how to deal with complex transboundary risk. He noted that UNDP, UNISDR, UNOCHA, ESCAP, etc. joined together to develop risk assessment tool for ENSO, facilitated a regional capacity building program, and published a risk assessment tool. He stressed that the strength of RCM is bringing all expertise together in an integrated manner.
47. Mr. Sanny Jegillos, Senior Advisor, Disaster Risk Reduction, UNDP Bangkok Regional Hub, pointed out that the role of the UN is strategic support to policy, budgeting, M&E, data, etc. and highlighted that UN is focused on preparedness, early warning, early action, and is ready to help with recovery.

48. Mr. Sujit Mohanty, Coordinator for the Asia Regional Platform, UNISDR Regional Officer for Asia-Pacific, provided his perspectives on how countries in Asia Pacific can best organize themselves to meet the 2030 development framework targets noting that UNISDR has been working closely with agencies regionally and globally pointing towards the need to assist countries in region to align themselves to targets and goals.

Agenda

Wednesday, 29 March 2017	
9:00-15.30 Asia-Pacific Forum on Sustainable Development (APFSD)	
<i>Conference Room 2</i>	
Participants will attend the sessions of the APFSD. Please check the APFSD website for details on the programme: http://www.unescap.org/events/apfsd4	
15.30-15.40 Opening session of the Regional Learning Platform	
<i>Meeting Room G</i>	
<i>This opening session will welcome all participants, establish the purpose and topics that will be discussed during the event, and provide information to the participants on how they can contribute.</i>	
<ul style="list-style-type: none"> ○ Opening address and purpose of the meeting <ul style="list-style-type: none"> ○ <i>Ms. Tiziana Bonapace, Director, Information and Communications Technology and Disaster Division (IDD), ESCAP</i> ○ Introduction of participants 	
15.40-17.00 Session 1: Building the resilience of poor people to achieve the Sustainable Development Goals: Framing the challenge	
<i>Panelists will discuss country-level approaches, policies and plans to build the resilience of poor people to disasters.</i>	
Session moderator: <i>Mr. Erdenebat Eldev-Ochir, Senior Officer in charge of International Cooperation, National Agency for Meteorology and Environment Monitoring, Mongolia</i>	
15.40-16.00 Framing presentation	
<ul style="list-style-type: none"> ○ Linkages between poverty and disasters in Asia-Pacific: Challenges and opportunities for building the resilience of the poor, <i>Mr. Sanjay Kumar Srivastava, Chief, Disaster Risk Reduction Section, ESCAP</i> 	
16.00-16.10 Commentary	
<ul style="list-style-type: none"> ○ <i>Mr. Hans Joakim Guttman, Executive Director, Asian Disaster Preparedness Center</i> 	
16.10-16.30 Country Perspective	
Philippines (focus on Typhoon Haiyan hit areas - Eastern Visayas): <i>Mr. Edgar Lino Posadas,</i>	

Regional Director, Office of Civil Defence

16.30-17.00 Discussion

17.00 Participants will go back to the plenary session of the Asia-Pacific Forum on Sustainable Development (APFSD)

Conference Room 2

Thursday, 30 March 2017

9:00-12:00 Session 2: Understanding disaster risks: Operational tools, techniques and applications for managing disaster risks and their impacts

Understanding disaster risks and their impacts on the poor – both historical and expected - is a critical step towards poverty eradication. This session will feature operational tools and applications to identify disaster risks and quantify their impacts, particularly on poor populations.

Session moderator: *Mr. Ali Shareef, Deputy Director-General, Maldives Meteorological Service*

Presentations

9.00-9.30 Part 1

- **Ex-ante annual average loss: Measuring and estimating future disaster impacts at macro-level:** *Mr. Sung Eun Kim, Associate Economic Affairs Officer, ESCAP*
- **Measuring and estimating poverty disaggregated disaster impacts at micro-level:** *Ms. Madhurima Sarkar-Swaigood, Economic Affairs Officer, ESCAP*
- **Climate risk assessment in agriculture sector:** *Ms. Suekyoung Jessie Lee, Researcher, APEC Climate Center*

9.30-10.00 Discussion

10.00-10.15 Break

10.15-11.30 Part 2

- **Post-disaster needs assessment with focus on measuring the losses incurred by poor people: Nepal experience:** *Mr. Suman Karna, Special Advisor to CEO, Nepal Reconstruction Authority, Government of Nepal*
- **Application of disaster loss databases for assessing the linkages between natural hazards and poverty in Asia:** *Mr. Sanny Jegillos, Senior Advisor, UNDP Bangkok Regional Hub*
- **Space applications, tools and techniques for monitoring disaster risks and poverty eradication interventions:** *Mr. V. Jayaraman, Indian Space Research Organization, Government of India*
- **Index-based parametric insurance for floods and droughts:** *Mr. Giriraj Amarnath, Theme Leader, Water-related Disaster Risk Management, International*

Water Management Institute (IWMI)/CGIAR

11.30-12.00 Discussion

12.00-13.00 APFSD side event: "Technology & Sustainability - Digital India Perspective"

Lunch will be provided. Please check the details from the APFSD side events webpage:
<http://www.unescap.org/events/apfsd4>

Meeting Room A

13.10-15.30 Session 3: Communicating risks – The role of multi-stakeholder climate forums

Many countries in the region have established seasonal climate forums – normally centered on the onset of monsoons - as a platform for bringing together climate information producers and users. This session will highlight these experiences and exchange perspectives on lessons learned and scope for supporting poverty eradication by ensuring that risk information reaches poor populations in an easily understandable format and is actionable.

Session Moderator: *Mr. Karma Dupchu, Chief, Hydrology and Water Resources Services Division, National Centre for Hydrology and Meteorology, Bhutan*

13.10-13.30 Presentations

- **The Monsoon Forums in Asia-Pacific: impacts, innovations, and emerging trends:** *Ms. Ruby Rose Policarpio, Institutions Specialist, Regional Integrated Multi-Hazard Early Warning System for Africa and Asia (RIMES)*
- **How information revolution can help mitigate disasters, reduce poverty: A look at acquired wisdom and practice:** *Mr. Vinson Kurian, Deputy Editor, Business Line*, India (*Economic and financial daily from the Hindu Group of Newspapers)*

13.30-14.30 Panel discussion

Questions: (1) What have been the concrete impacts of seasonal climate forums so far? (2) What have been the successes and challenges? (3) How can climate forums be designed to effectively support the poverty eradication agenda? (4) What products and innovations need to be introduced?

- **Myanmar Monsoon Forum:** *Ms. Khin Cho Cho Shein, Director, Department of Meteorology and Hydrology*
- **Sri Lanka Monsoon Forum:** *Mr. Athula Karunanayake, Director, Department of Meteorology*
- **Philippine Climate Outlook Forum:** *Ms. Rosalina G. De Guzman, Assistant Weather Services Chief & Chief, Climate and Agromet Data Section, Philippine Atmospheric, Geophysical and Astronomical Services Administration*
- **Cambodia Monsoon Forum:** *Mr. Ryna Oum, Director, Department of Meteorology, Ministry of Water Resources and Meteorology*

14.30-15.00 Discussion

15.00-15.15 Break

15.15-17.00 Session 4: Risk-sensitive poverty eradication policy responses

This session will invite participants to reflect on potential policy responses and strategies to effectively mainstream disaster risk reduction and resilience into sustainable development with focus on the goal of ending poverty.

- **Introduction :** Mr. Sanjay Srivastava
- **Building Resilience to Disasters for Ending Poverty in All Its Forms Everywhere:** Mr. PG Dhar Chakrabarti, ESCAP Consultant
- **Feedback from countries**
- **Wrap-up by the Secretariat,** Ms. Kareff Rafisura , Economic Affairs Officer, ESCAP
- **Evaluation of the meeting**

Friday, 31 March 2017

9.30-11.00 APFSD side event: Introduction of a guidance document providing a framework to understand coherence among the Sendai Framework for Disaster Risk Reduction, the 2030 Agenda for Sustainable Development, and the Paris Agreement on Climate Change. The event is being organized by the UN Asia-Pacific Regional Coordination Mechanism Thematic Working Group on Disaster Risk Reduction and Resilience (led by ESCAP with UNDP and ISDR). Please check the details from the APFSD side events webpage: <http://www.unescap.org/events/apfsd4>

Meeting Room G

11.00 Refreshments

13.00-15.00 Project Meeting of Development Account/Monsoon Forum-participating countries countries (By invitation only)

Bhutan, Cambodia, Fiji, Maldives, Mongolia, Myanmar, Papua New Guinea, Philippines, Samoa, Sri Lanka, Timor-Leste and Viet Nam

Meeting Room G

List of Participants

GOVERNMENTS

Bhutan

Mr. Karma Dupchu, Chief, Hydrology and Water Resources Services Division (HWRSD) National Centre for Hydrology and Meteorology (NHCM), Royal Government of Bhutan

Cambodia

Mr. Ryna Oum, Director, Department of Meteorology, Ministry of Water Resources and Meteorology

Mr. Monichoth So Im, Deputy Director, Department of Meteorology, Ministry of Water Resources and Meteorology

India

Mr. V. Jayaraman, Consultant, Indian Space Research Organization (ISRO), Bangalore, India

Kazakhstan

Ms. Samal Bekmaganbetova, Senior Specialist of Disaster Risk Reduction Department, Center for Emergency Situations and Disaster Risk Reduction in Almaty

Lao People's Democratic Republic

Ms. Outhone Phetluangsy, Deputy Director General, Department of Meteorology and Hydrology, Ministry of Natural Resources and Environment

Maldives

Mr. Ali Shareef, Deputy Director General Meteorology, Maldives Meteorological Service

Mongolia

Mr. Erdenebat Eldev-Ochir, Senior officer in charge of International cooperation, National Agency for Meteorology and Environment Monitoring (NAMEM) of Mongolia

Myanmar

Ms. Khin Cho Cho Shein, Director, Department of Meteorology and Hydrology (DMH)

Nepal

Mr. Suman Kumar Karna, Special Advisor to CEO, National Reconstruction Authority (NRA), Government of Nepal

Pakistan

Mr. Muhammad Arif Sargana, Director, Economic Affairs, Pakistan Telecommunication Authority

Philippines

Mr. Edgar Lino Posadas, Regional Director, Office of Civil Defense

Ms. Rosalina G. De Guzman, Assistant Weather Services Chief, Climate and Agromet Data Section (CADS), Climatology and Agrometeorology Division, (CAD), Philippine Atmospheric Geophysical and Astronomical Services Administration

Sri Lanka

Mr. Athula Kumara Karunanayake, Director, Department of Meteorology (DOM)

Sweden

Ms. Anne-Charlotte Malm, Counsellor, Head of Regional Development Cooperation in Asia - Regional Asia and Myanmar, Embassy of Sweden

Timor-Leste

Mr. Joao Carlos Sing, Data Base for Disaster Management, National Disaster Management Risk Director, Ministry of Social Solidarity

Thailand

Mr. Kamol Promasakha Na Sakolnakhon, Director of Meteorological Radar and Satellite Data Analysis Division, Weather Forecast Bureau, Thai Meteorological Department (TMD)

The Islamic Republic of Iran

Mr. Mohammad Hadi Daryaei, Deputy for International Affairs, Department of International Affairs, Plan and Budget Organization (PBO), Government of the Islamic Republic of Iran

Vietnam

Ms. Phuong Thu Trinh, Chief of Hydrological Forecasting Division for the Northern Vietnam, National center for Hydro-Meteorological Forecasting (NCHMF), Ministry of Natural Resources and Environment

TECHNICAL INSTITUTES AND OTHER STAKEHOLDERS

Mr. Giriraj Amarnath, Sub-Theme Leader: Water-Related Disaster Risk Management, International Water Management Institute (IWMI), Sri Lanka

Mr. Hans Joakim Guttman, Executive Director, Asian Disaster Preparedness Center (ADPC)

Mr. Senaka Basnayake, Department Head, Climate Change and Climate Risk Management, Asian Disaster Preparedness Center (ADPC)

Mr. Vinson Kurian, Deputy Editor, Business Line, New Delhi, India

UNDP Asia-Pacific Regional Center

Mr. Sanny Ramos Jegillos, Practice Coordinator/Regional Disaster Reduction Adviser, Asia-Pacific Regional Center, UNDP

UNDP Indonesia

Mr. Rinto Andriono, Senior Specialist, Disaster Risk Reduction Based Rehabilitation & Reconstruction (DR4) Environment Unit UNDP Indonesia

INTERGOVERNMENTAL ORGANIZATIONS

Ms. Suekyoung Lee, Researcher/Programme Officer Strategic Planning Team, APEC Climate Center, APCC

Mr. Arjunapermal Subbiah, Director, Regional Integrated Multi-Hazard Early Warning System (RIMES)

Ms. Ruby Rose Sazon Policarpio, Institutional Development Specialist, Regional Integrated Multi-Hazard Early Warning System (RIMES)

Mr. Anshul Agarwal, Hydrologist, Regional Integrated Multi-Hazard Early Warning System (RIMES)

Mr. Itesh Dash, Team Leader, Systems Research and Development, Regional Integrated Multi-Hazard Early Warning System (RIMES)

ESCAP SECRETARIAT

Information and Communications Technology and Disaster Risk Reduction Division

Ms. Tiziana Bonapace, Director

Mr. Sanjay Kumar Srivastava, Chief, Disaster Risk Reduction Section

Mr. Puji Pujiono, Regional Adviser, IDD

Ms. Kareff Rafisura, Economic Affairs Officer, Disaster Risk Reduction Section

Mr. Andrew Hurd, Economic Affairs Officer, Space Applications Section

Mr. Edward Turvill, Programme Officer, Disaster Risk Reduction Section

Ms. Kelly Anne Hayden, Economic Affairs Officer, Space Applications Section

Ms. Madhurima Sarkar-Swaigood, Economic Affairs Officer, Disaster Risk Reduction Section

Mr. Syed T. Ahmed, Associate Economic Affairs Officer, Space Applications Section

Mr. Sung Eun Kim, Associate Economic Affairs Officer, Disaster Risk Reduction Section

Ms. Ingrid Dispert, JPO/Associate Expert, Disaster Risk Reduction Section

Mr. P.G. Dhar Chakrabarti, Consultant, Disaster Risk Reduction Section