

**Inputs provided by:** *The United Nations University - Institute for Sustainability and Peace (UNU-ISP)*

**1. General description of mandates and objective(s) of your organization / associated network with institutional structure**

*The United Nations University - Institute for Sustainability and Peace (UNU-ISP), a think-tank for United Nations system at Tokyo, Japan, provides a bridge between the UN and the international academic and policy-making communities. Our mandate is to carry out research, postgraduate teaching and training, capacity development and dissemination of knowledge towards sustainable environment, development and peace that are of concerns to the United Nations and its member states. Among three sections of UNU-ISP, Global Change and Sustainability (GCS) section seeks to clarify our understanding of sustainable development and the interaction among its constituent components – environment, society and economy. Specific objectives are to (i) Strengthen the capacity to develop strategies to adapt and mitigate adverse impacts of environmental change through understanding, detecting and predicting global change that affect them and (ii) to develop common and integrated approaches to implement sustainable development preserving ecosystems. We have been carrying out several policy relevant research activities with focus on climate and ecosystem change adaptation in water and food sectors. Cross-cutting themes are integrated by means of (i) analyzing risk due to disasters, urbanization, land degradation and deforestation; (ii) developing capacity by customizing global knowledge, sustainable knowledge transfer etc.; and (iii) addressing scarcity on energy, food and water*

**2. Relevant operational framework(s)**

*Based at UNU Headquarters in Tokyo, UNU-ISP has strong links within the UN system, and with universities and research institutions, non-governmental organizations and the private sector, both in Japan and worldwide. The institute also works in close collaboration with the government of the host Country and other governmental organizations around the world. The Global Environment Outreach Centre (GEOC), a joint initiative of UNU-ISP and the Ministry of the Environment of Japan, promotes engagement in environmental issues among civil society and the general public in Japan and overseas.*

*Through its postgraduate and capacity development activities, UNU-ISP fosters international experts with the interdisciplinary understanding and technical skills needed to advance creative solutions to problems of sustainability and peace. Teaching programmes include full Master's and PhD degrees, as well as short courses and training modules.*

*The institute's work on risk management for loss and management associated with climate and ecosystem change is centered around the University Network for Climate and Ecosystems Change Adaptation Research (UN-CECAR), a platform of 25 leading universities in the Asia-Pacific region.*

**3. Focus areas of risk management for loss and damage associated with climate change impacts**

*UNU-ISP has been making important contributions through postgraduate courses, research, trainings and policy dialogues in loss and damage estimation areas.*

*In the field of pre-disaster flood loss estimation the following activities have been carried out.*

- 1. Developing a damage estimation model based on stage-damage (fragility or loss) functions from Japanese standardized data and application and verification of the model (Chiba district Japan)*
- 2. Development and application of a flood damage model to evaluate effectiveness of flood control*

*measures through the application of above damage model to inundation modeling with and without mitigation measures*

- 3. Expansion of damage estimation method to include flood and wind loss estimation*
- 4. Conducting field surveys to develop loss functions in Viet Nam, Thailand and Sri Lanka.*
- 5. Under Climate and Ecosystem Change Adaptation Programme, enhancing resilience for sustainability is the guiding principle in designing adaptation strategies within the context of development planning. Specific activities in Asia and Africa are to promote higher education and research in: (i) adaptation to climate and ecosystems change in water and agriculture sectors; (ii) ecological security through the efficient management of trans-boundary basins; (iii) the management of urban risks; and (iv) capacity development for integrated environmental modelling. Land, water and cultural connections will be explored, in particulate in Southeast Asian communities, to identify and enhance local knowledge and to strengthen resilience against climate and ecosystems change.*
- 6. A recently completed 3 year project on Comparative Studies on Adaptation to Climate Change, analyzed climate change impacts and optimal adaptation strategies in on floods and rice production in Sri Lanka, Thailand, Viet Nam and Philippines.*

#### **4. Geographic coverage**

*UNU-ISP works with various partners around the world to reduce disaster risk and build resilient communities. UNU-ISP is also the secretariat of University Network for Climate and Ecosystems Change Adaptation Research (UN-CECAR). The UN-CECAR is a network of universities and organizations in the Asia-Pacific and Africa who develop research and education programmes on climate change and ecosystems change, and sustainability science. The network aims to bring together the best resources and expertise in joint research for the design of appropriate policy and development strategies, and development of postgraduate education courses and training across disciplinary lines.*

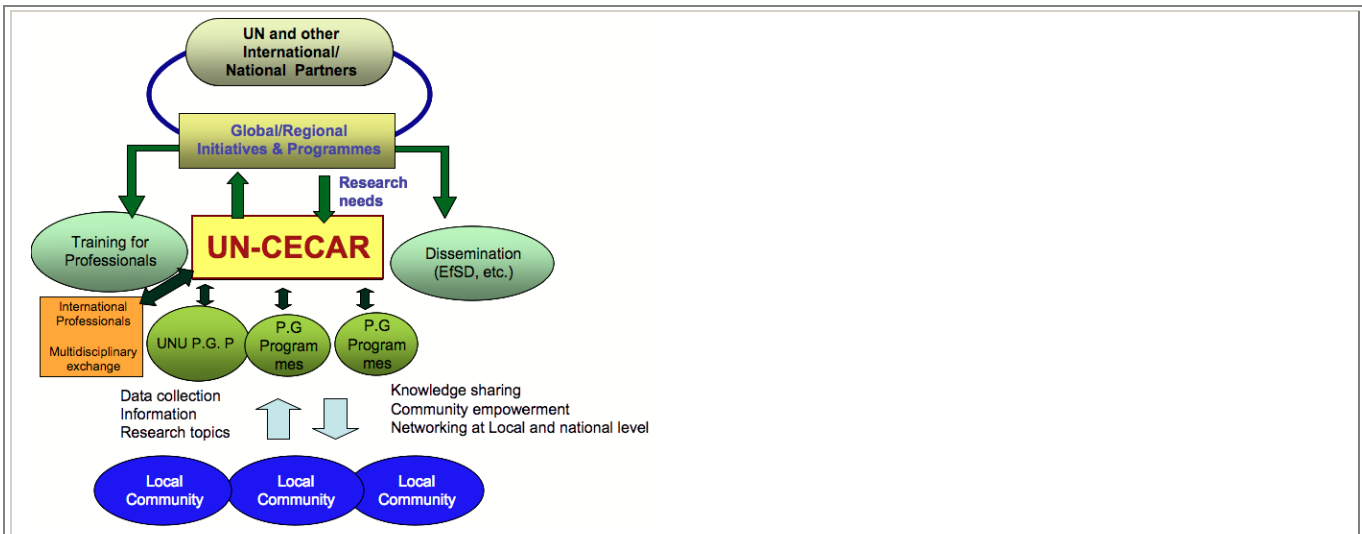
#### **5. Key stakeholders**

*National Government Institutions (e.g., Ministry of Education, Culture, Sports, Science and Technology, Japan; Kanazawa City ; Ministry of Foreign Affairs of Japan ; Ministry of the Environment, Government of Japan ; Ministry of Irrigation and Water Resources Management, Sri Lanka), Development Partners & INGOs (e.g., JICA, UNISDR; CBD; FAO; GEF; IPCC; UNDP; UNEP, ICHARM); Academic and Research Institutions (Asian Institute of Technology; Australian National University; BUET; Chinese Academy of Forestry; Ibaraki University - ICAS; Indian Institute of Technology; IIR3S Tokyo; Keio University; Kyoto University; National University of Malaysia); Local NGOs*

#### **6. Implementation modality / delivery mechanisms**

*The research and capacity development activities are mainly implemented through a network of leading Universities in Asia Pacific, who develop educational and research programs jointly. This network termed UN-CECAR, the university network for climate and ecosystems change adaptation is uniquely poised to customize the outcomes of the research to each local context through their postgraduate programs.*

*We combine meteorological, hydrological, engineering and sociological research in order to provide methodologies and a framework useful for strategic planning to address loss and damage associated with climate change impacts. As climate change impacts are very much local and depend on the local characteristics, it is also important that the local capacity is developed to make it possible to carry out similar studies in the local context. The UN-CECAR framework is shown in the Figure 1. Course materials, tutorials and educational videos on the methodologies to be used in higher education institutions are developed and shared.*



Please provide information related to the technical, financial and institutional support mechanism.  
 The funding for the activities come from UNU, APN, the University of Tokyo Integrated Research Systems for Sustainability Science, foundations, etc.

Please provide information related to reporting, if any

The activities are disseminated through <http://cecar.unu.edu> site and UN-CECAR publication series

## 7. Key activities / outputs to date

*In relation to hydro-meteorological disaster risk, loss and damage estimation, we have been carrying out several researches; field visits, workshops; conferences, symposiums, post-graduate training; publications (Books, peer reviewed papers, working papers, proceedings, annual/quarterly reports). Following are some of key activities which have direct linkages with loss and damage estimation.*

- *Comparative Studies on Development Strategies Incorporating Adaptation to Climate Change (CSDS-IACC): A 3-year research project to develop optimal adaptation strategies in on flood risk reduction in Kelani basin, Sri Lanka and Yom basin, Thailand in response to climate change.*
- *Postgraduate downscaling training program developed and delivered in partnership with more than 8 partner institutions including the National Center for Atmospheric Research (NCAR) of USA, Meteorological Research Institute (MRI) of Japan, the Tokyo University, Indian Institute of Technology, etc.*
- *Intensive postgraduate climate change courses (Building Resilience to Climate Change I and II). These are two credit (standard Japanese) postgraduate level courses delivered over a 4 weeks time period. It covers science, impacts, economics and adaptation to climate change.*
- *Collaborative research on disasters from extreme events (fast change) and long-term impacts (slow change) due to climate and ecosystems change;*
- *Module-based postgraduate courses and training in geographic and climate modeling software, completed with teaching support materials.*

## 8. Any additional information and contact details

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