

# CABARET SUSTAINABILITY PLAN

Version 3.0 (24.04.2020)

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## CABARET Sustainability Plan Version 3.0 (24<sup>th</sup> April 2020)

### *Executive Summary - Sustainability Plan Actions*

To ensure that key impacts of the CABARET project are sustained beyond the initial 36-month, funded workplan, the following actions have been agreed:

- The project website will continue to be online and maintained – responsible: HUD; activity: host the website for a minimum of two years after the project finishes.
- Contact persons within the formed network will continue to be available in each partner institution.
- The Training Platform embedded in the capacity building schemes will be maintained. This will include: functional and technical specification for the regional capacity building, manuals and user instructions to ensure that the platform will be easy to maintain and use beyond the project end, the material developed as multi-disciplinary training courses Major Online Open Courses (MOOCs).
- Strategies and dedicated units for advocacy and communication will be created and extending the use of the MOOCs to more staff.
- Supporting University-University, University-industry and PPP partnerships for further developed.
- Development of further project proposals will be developed – on the basis of sandpits and identified gaps.
- Use and implementation of the secondment plan methodological approach as an instrument as potential tool for new expertise creation.
- Research collaboration will continue including follow-up surveys.
- Guest lectures and national conferences will bring together partners.
- Further proposals for secondments between partners will be made.
- The policy implications of research findings will be further publicised.

### *Introduction*

The project CABARET is addressed to strengthen research and innovation capacity for the development of societal resilience to disasters. The project wants to provide a support to build capacity for international and regional cooperation between Higher Education Institutes (HEIs) in Asia (region 6) and Europe, and among Asian HEIs themselves, to improve multi-hazard early warning (MHEW) and increase disaster resilience among coastal communities.

In specific the project wants to build capacity, foster regional integration and cooperation through joint initiatives, sharing of good practices and cooperation among HEIs in Asia and Europe. CABARET aims at strengthen relations between HEIs and the wider economic and social environment through its focus on coastal communities, many of which are under severe pressure resulting from planned and unplanned development, population growth and human induced vulnerability, coastal hazards with increasing frequency and magnitude, and the impacts of global climate change. In doing so, CABARET focuses on a subject area and a world region not sufficiently addressed by projects already being funded under previous schemes.

CABARET wants achieve its objectives by:

- identifying intra- and inter- regional cooperation capacity needs across partner country HEIs for the development of more effective Multi Hazards Early Warning (MHEW) systems;
- creating an innovation hub for resilient coastal communities, promoting scientific cooperation and knowledge transfer in Higher Education within Asia, and between Asia and Europe on MHEW;
- developing a capacity building roadmap to address regional gaps and priorities;
- exploring, promoting and initiating opportunities for fruitful university partnerships with socio-economic actors in coastal communities;
- developing innovative multi-disciplinary training courses tailored for rapid skill (knowledge, qualifications,) acquisition for professional teams involved in multi-hazard early warning at the national and regional level;
- publicising the capacity building progress, successes and outcomes as far as possible, and raising awareness across the field of HE about capacity building for MHEW and increased disaster resilience in coastal communities.

CABARET wanted to enhance regional and transboundary cooperation for MHEW, and empower individuals and organisations with the skills, competencies and credentials needed to promote and sustain regional cooperation within Asia and Europe, and within Asia itself, aimed at reducing the likelihood and impact of disasters in coastal communities. In specific the capacities of the partner HEIs in Asia to meet (match) the challenges and specific needs of the wider economic and social environment were enhanced. The project also wanted to strengthened the internationalisation of HEIs and their capacity to network effectively in research, scientific and technological innovation, facilitate the exchange of experience and practice despite of diversity, and increase the ability of partner HEIs in Asia to build relationships with relevant socio-economic actors. It will also provide a set of multi-disciplinary training courses tailored for rapid skill (knowledge, qualifications,) acquisition for professional teams involved in multi-hazard early warning.

The CABARET project includes ***provision for a project sustainability plan*** (Work Package 8, deliverable 8.3) to set out the sustainability needs and means by which activities and results can be extended beyond the funding period. This is made through the role play by the WP8 in terms of interface among all the WPs devoted to the Capacity analysis and development (see figure 1).

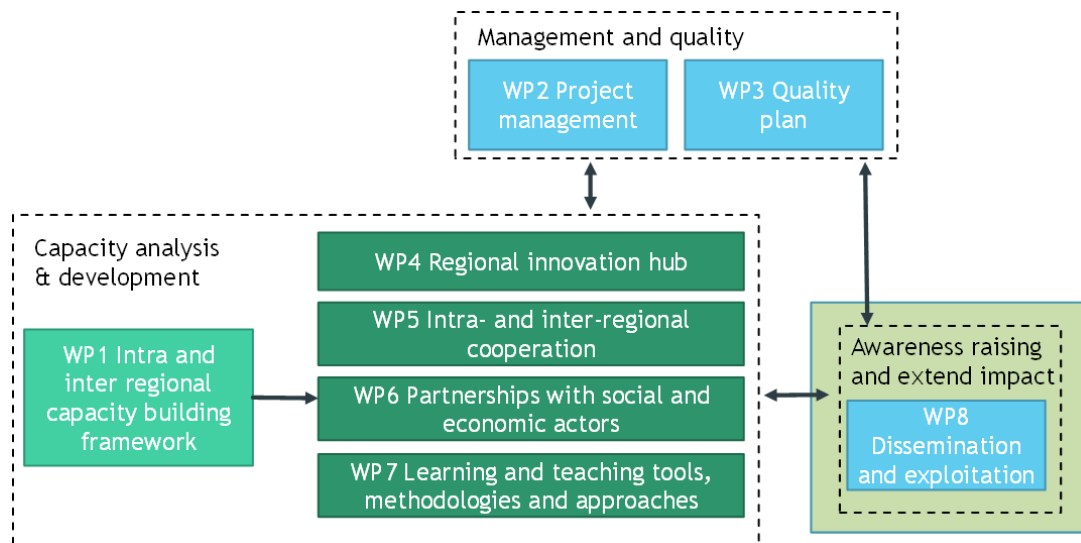


Figure 1. Dissemination and exploitation plan: links among WPs.

The purpose of the sustainability plan is to ensure that key impacts of the project are sustained beyond the initial 36-month, funded workplan. ***The overall strategy for CABARET sustainability is to focus on sustaining key project outcomes rather than attempt to continue project activities.***

The process for sustainability planning adopted was including both the financial and expansion strategies beyond the initial funding period according to the following steps:

1. The CABARET project activities and results were reviewed in order to identify:
  - a. sustainability obligations (which are simply expected to be sustained);
  - b. priority project areas for sustainability;
  - c. an initial list of potential activities and results which could be sustained.
2. Work Package leaders for the key priority project areas for sustainability identified as (copies of are included in Annex 1):
  - a. Intra- and inter- regional cooperation capacity needs identification across partner country HEIs for the development of more effective MHEW in WP1 with the aim to provide a monitoring and assessment framework to be used to inform the national and regional level about gap analyses base on the detailed baseline survey.
  - b. Developing regional innovation infrastructure to promote scientific cooperation and knowledge transfer though regional innovation hub in WP4;
  - c. Strengthening the internationalisation of HEIs and the capacity to network effectively within Asia, and between Asia and Europe on MHEW and coastal resilience, with the aim develop a capacity building roadmap to address regional gaps and priorities as a part of WP5;
  - d. Promoting fruitful university partnerships with socio-economic actors in through training school, and staff mobility and secondments focus of WP6;
  - e. The regional capacity development platform in WP7 towards the development of an innovative multi-disciplinary training courses Major Online Open Courses

(MOOCs) tailored for rapid skill (knowledge, qualifications,) acquisition for professional teams involved in multi-hazard early warning;

3. Special Interest Group (SIG) were defined towards the organization of specific sandpits (considered also as part of the CABARET training programme) in order to develop new proposals related to the capacity building and network achieved in the CABARET project. The reports of SIG actions and main goals are included in this report (see Annex 2);
4. The outcomes of all the above have been compiled into a single report which is summarised and presented in the form of a Sustainability Actions summary table (Table 1) with commentary **as the CABARET Sustainability Plan**.

### *1. Sustainability Action Plan*

The sustainability actions following the key priority project areas analysis from WP1, WP4, WP5, WP6 and WP7 are summarised in Table 1. These include:

- obligatory sustainability actions;
- sustainability actions suggested by the work package leaders for the identified priority areas of:
  - a. the regional monitoring and assessment framework for capacity needs in WP1;
  - b. the main outcomes of the innovation hub in WP4;
  - c. the material from the capacity building roadmap as a part of WP5;
  - d. the strategy for partnerships creation with social and economic actors identified in WP6;
  - e. The regional capacity development platform in WP7;
- sustainability actions agreed in the Sustainability Planning Workshop.

Table 1: Sustainability Actions

| Results / Activity to sustain                                  | Actions to be Taken  | Ownership    | Time Frame                                  | Resources   |
|--|--|--------------|---|---|
| <b>Basic obligations</b>                                       |  |              |   |   |
|  | <ul style="list-style-type: none"> <li>Project website maintained</li> </ul>   | PP1 (All)    | beyond 2020                                 | Partner institutions  |
|  | <ul style="list-style-type: none"> <li>Contact person available in each partner institution</li> </ul>   | All          | beyond 2020                                 | Partner institutions  |
| <b>Priority areas identified from WP analysis</b>              |  |              |   |   |
| Intra- and inter-regional capacity building framework          | <ul style="list-style-type: none"> <li>Dissemination of the regional monitoring and assessment framework to present the results of the and inter region capacity needs analysis across partner country HEIs to improve MHEW</li> </ul> | P1/P9 (All)  | beyond 2020                                 | From future projects  |
| Innovation hub (WP4)   | <ul style="list-style-type: none"> <li>Maintaining regional innovation network on MHEW that will assist in strengthening MHEW Systems at all levels in Asia</li> </ul>   | All (P1/P8)  | beyond 2020                                 | From future projects  |
| Training programme and materials (WP4)                         | <ul style="list-style-type: none"> <li>Materials developed for the programme will be archived as MOOCs maintained and available beyond the project end</li> </ul>  | All (P1/P8)  | beyond 2020                                 | Partner institutions  |
| Capacity building roadmap (WP5)                                | <ul style="list-style-type: none"> <li>Assessment of the impact of the defined capacity building roadmap for policy brief and policy dialog beyond the project's end</li> </ul>  | All (P5/P10) | Long Term                                   | Partner institutions  |
| International cooperation (WP5)                                | <ul style="list-style-type: none"> <li>Strategies and dedicated units for mainstreaming support and communication</li> <li>Continue with advocacy and communication training</li> </ul>  | All (P5/P10) | Long Term                                   | Partner institutions and from future projects                         |
| University – social and economic partnerships (WP6)            | <ul style="list-style-type: none"> <li>Continuing on development/strengthening secondment opportunities</li> </ul>   | P3/P12 (All) | Long Term                                   | Partner institutions  |
| Regional capacity development platform (WP7)                   | <ul style="list-style-type: none"> <li>Platform will be maintained including all developed MOOC</li> </ul>   | All (P4/P11) | Long Term                                   | From future projects  |
| <b>Priority areas identified with a crosscutting relevance</b> |  |              |   |   |
| International collaborative network                            | <ul style="list-style-type: none"> <li>Sandpits – continuation of particular themes identified</li> <li>Further project proposals</li> <li>Research collaboration</li> </ul>   | All          | During last part of CABARET and beyond 2020 | Last part of CABARET project and Partner institutions/future projects |
| National collaborative networks                                | <ul style="list-style-type: none"> <li>Associations</li> <li>Guest lectures, national conferences</li> </ul>   | All          | Beyond 2020                                 | Partner institutions  |



|   |  |               |   |   |
|---|--|---------------|---|---|
| Research and innovative capacities development framework - related research | <ul style="list-style-type: none"> <li>• Follow-up surveys</li> </ul>  | All (PP1/PP2) | Beyond 2020                                 | Partner institutions/future projects                  |
| Secondments   | <ul style="list-style-type: none"> <li>• Potential proposals for secondments with an emphasis of the Asian Countries</li> <li>• Extension of the secondments from Asian Countries to European Countries and vice versa</li> </ul>  | P3/P12 (All)  | Long Term                                   | Partner institutions/future projects                  |
| Policy briefs on research capacity development                              | <ul style="list-style-type: none"> <li>• Publicising policy implications of research findings (in connection to funding support)</li> <li>• Briefing papers are expected to be generated from Partner countries in Asia</li> </ul> | HEIs          | During last part of CABARET and beyond 2020 | Last part of CABARET project and Partner institutions |

## *2. Risks to Sustainability*

None of the sustainability actions identified requires significant additional direct funding; however, they do rely heavily on the continued interest, dedication and time investment of individuals within the partner institutions for taking forward the accomplishments of the CABARET project. Thus, unavailability of sufficient time and loss of interest represents the greatest risks to sustainability.

These are mitigated both by the direct alignment of the CABARET sustainability actions with typical academic career objectives of international collaboration, joint research and publications, securing research project funding, etc... Moreover, either Impact studies or the second phase of the project applying to new proposal can be considered including as well high level of long-term dedication which is clearly evident in the CABARET team.

## *3. Sandpits Special Interest Groups (See annex 1.2)*

During the workshops organized within each of the CABARET the identification of Special Interest Groups was undertaken with an emphasis on the following topics:

- Enhancing Disaster Resilience Education in Asia (ADMU);
- Evacuation planning, delays and vulnerable groups (UOP and UoM);
- Local Government and Risk Mapping at local level (Andalas University and HUD);
- Uptake and implementation policies on Public Private Partnership (PPPs) to stimulate private sector engagement and investment for Multi-Hazard Early Warning (MHEW) Systems for Coastal Resilience in Asia (UCLan);
- Disaster and Climate Change Resilience in Small States, Islands & Archipelagic States & Remote Regions (UoM);
- Multi-hazard early warning interface related sandpit (HUD)

## *4. Identification of the CABARET results/activities and critical risks/mitigation actions for the sustainability plan*

During the latest meeting of CABARET in Bandung bilateral talks have been addressed to jointly develop a consensus view of the priorities in terms of what and how the CABARET project should be sustained beyond the funding period in a sustainable way. This action aimed to more clearly define the actions to be taken identifying the main 5 key action priorities based on the list reported in table 2. The bilateral served to refine the preliminary sustainable actions (already reported in Table 1) and their underlining risk (see Table 3).

The talks were organized sorting a list of the possible CABARET results/ activities, which should be sustained (shown in Table 2 below)

The main tasks to be finalized during the bilateral talks were the following ones:

- determining any other existing project results / activities which should be included to the list;
- identifying any new activities which could take the project goals forward;
- identifying the 5 priority results / activities in the view of the (whole) group;

- determining what could be done in order to sustain these 5 priority results / activities;
- identifying the underlining risk and the mitigation.

*Table 2: List of possible CABARET results / activities which could be sustained*

| <b>Result/Activity</b>  | <b>Grade of Importance from 1 (low) to 5 (high)</b> | <b>Identification of the top five key priorities</b> |
|---|---|--|
| Innovation hub  |   |  |
| Training programme and materials  |   |  |
| Capacity building roadmap   |   |  |
| International cooperation   |   |  |
| University – social and economic partnerships                               |   |  |
| Regional capacity development platform (MOOCs and other)                    |   |  |
| International collaborative network   |   |  |
| National collaborative networks   |   |  |
| Training material   |   |  |
| Training programme (workshops, events, online or in person)                 |   |  |
| Research and innovative capacities development framework - related research |   |  |
| Secondments   |   |  |
| Policy briefs on research capacity development                              |   |  |

The WP8 leaders collected in a unique document all the feedbacks received in order to:

- summarize in an Action Plan the results of all of the groups and to more in-depth summarize the Actions to Take, Owner(s) of the actions, the Time Frame and Resources addressed to the actions (see table 3);
- the critical risks for sustainability and proposed risk-mitigation actions for the 5 key priorities identified in table 4.

*Table 3: action Plan summary*

| <b>Result/Activity</b>           | <b>Action to take</b> | <b>Owner(s)</b> | <b>Time frame</b> | <b>Resources</b> |
|----------------------------------|-----------------------|-----------------|-------------------|------------------|
| Innovation hub                   |                       |                 |                   |                  |
| Training programme and materials |                       |                 |                   |                  |
| Capacity building roadmap        |                       |                 |                   |                  |
| International cooperation        |                       |                 |                   |                  |

|   |  |  |  |  |
|---|--|--|--|--|
| University – social and economic partnerships                               |  |  |  |  |
| Regional capacity development platform (MOOCs and other)                    |  |  |  |  |
| International collaborative network   |  |  |  |  |
| National collaborative networks   |  |  |  |  |
| Training material   |  |  |  |  |
| Training programme (workshops, events, online or in person)                 |  |  |  |  |
| Research and innovative capacities development framework - related research |  |  |  |  |
| Secondments   |  |  |  |  |
| Policy briefs on research capacity development                              |  |  |  |  |

*Table 4: critical risks for sustainability and proposed risk-mitigation actions*

| <b>Description of sustainability risk for the specific 5 key actions priorities</b> | <b>Possible risk-mitigation actions</b><br>(Considering a 5 years period beyond the project end) |
|---|--|
| 1. ...  |  |
| 2. ...  |  |
| 3. ...  |  |
| 4. ...  |  |
| 5. ...  |  |

*Annex 1: Sustainability Plans for Priority Project Areas for Sustainability*

- 1.1 Intra- and inter-regional capacity building framework (WP1 leaders)
- 1.2 Regional innovation hub on MHEW (WP4 leaders)
- 1.3 Regional cooperation for MHEW (WP5 leaders)
- 1.4 Partnerships with social and economic actors (WP6 leaders)
- 1.5 Learning and teaching tools, methodologies and approaches (WP7 leaders)

### *Annex 1.1: Intra- and inter-regional capacity building framework (WP1 leaders)*

#### **What actions will be taken to ensure the sustainability of these initiatives (beyond the project funding period)?**

IOC-UNESCO ICG/IOTWMS has commissioned Huddersfield and ITB to prepare a Intergovernmental Oceanographic Commission Technical Series Document on Governance of the upstream-downstream interface in tsunami early warning, which includes the results of the cross country analysis and a self-assessment tool that can be used by countries to continuously evaluate their capacities. This will be provided as official guidance to all 28 member states of the IOTWMS. The framework will also be presented at future planned events on MHEW, as detailed below.

#### **The extent to which these initiatives will be sustained beyond the project (in terms of time and space).**

This framework has been underpinning detailed empirical studies and comparison of four member states, including Indonesia, the Maldives, Myanmar and Sri Lanka. The studies are identifying the current status of the four countries against areas of capacity, as well as shortcomings in the end-to-end warning chain and standard operating procedures.

Using the analytical framework developed through their research, they designed the capacity survey tool that in November 2018 was issued, by the ICG/IOTWMS, to all 28 members states. The research has changed the policy of the Intergovernmental Oceanographic Commission of UNESCO (IOC-UNESCO) Intergovernmental Coordination Group for the Indian Ocean Tsunami Warning and Mitigation System (ICG/IOTWMS) on their approaches to assessing tsunami preparedness and priorities for capacity development of member states. Haigh, Amaratunga and Rahayu also led the survey analysis, which was formally published as an ICG/IOTWMS Status Report on Capacity Assessment of Tsunami Preparedness in the Indian Ocean 2019. The results will inform regional capacity building efforts in the Indian Ocean from 2020.

In Autumn 2020, CABARET partners will present the framework as part of the planned International Symposium on Multi-Hazard Early Warning and Disaster Risk Reduction, which will be held in Colombo, Sri Lanka in conjunction with the Disaster Management Center of Sri Lanka.

#### **What resources will be needed for this and where are these resources expected to come from?**

The resources, including staff time, travel and subsistence, and event costs have been secured through several further grants, including:

2020-2021 Newton Prize Indonesia - Harmonising tsunami early warning at the local level, £200,000, Newton Fund. HUD and ITB.

2019-2020 Governance of the upstream-downstream interface in end-to-end tsunami early warning systems, Funder: UK GCRF, £110,000, HUD, UoM, ITB, MNU, UoY.

**The risks to sustainability that are foreseen and any mitigating actions that should be taken.**

Coronavirus pandemic disrupting future events and data collection – we have developed plans to collect data remotely, as well as to provide remote/virtual access to the planned MHEW Symposium

### *Annex 1.2: Regional innovation hub on MHEW (WP4 leaders)*

#### **What actions will be taken to ensure the sustainability of these initiatives (beyond the project funding period)?**

Central to the regional innovation hub was the running of sandpit event at the first full workshop of the CABARET project, held in Kandy, Sri Lanka in March 2018. These sandpit groups evolved over the four CABARET workshops and the decision was taken by the Steering Committee to rename these as Special Interest Groups (SIGs), reflecting their changing status and potential for operation after the project implementation period.

The SIG leaders, with the support of their working groups, were each asked to propose a workplan that began in the implementation period but extended to consider post-project actions. A range of post-project actions were identified, including the development of joint research proposals, special issues of journals, future workshops held alongside conferences, representation on national, regional and international platforms, and publications. A summary of the SIG actions is provided below.

#### **The extent to which these initiatives will be sustained beyond the project (in terms of time and space).**

For each SIG, the following initiatives will be sustained beyond the project (we will add to these based on each Sandpit workplan):

##### **Multi-hazard early warning (HUD):**

This SIG has jointly organised a high-level, international symposium on Multi-Hazard Early Warning and Disaster Risk Reduction, in collaboration with the Disaster Management Centre, Sri Lanka; Global Disaster Resilience Centre, University of Huddersfield, UK; IOCUNESCO IOTWMS, WG 1 on Tsunami Risk, Community Awareness and Preparedness, and other partners. It is being held to recognise achievements, and to highlight work that still needs to be done. It will promote collaboration among academia, research institutions and disaster management offices, and encourage multidisciplinary and multi sectoral interaction, thereby taking forward the goals of the SIG. The event will be held after the project implementation period, on 18th – 20th March 2020, at Cinnamon Grand, Colombo, Sri Lanka. The SIG has also secured a book contract with Springer Nature, that will publish a collection of related research articles on MHEW after the Symposium.

HUD and ITB submitted a research grant application on flood early warning and transboundary river governance, entitled [Indonesia] Mitigating hydro meteorological hazard impacts through transboundary river management in the Ciliwong River basin, NERC/ESRC/RISKTEKDIKTI, £ 466,655.66, Partners include Institute of Technology Bandung, Indonesia, School of BMKG / Sekolah Tinggi Meteorologi, Klimatologi dan; National Disaster Management Authority of the Republic of, Indonesia (BNPB); Indonesian Agency for Meteorological, Climatological and Geophysics (BMKG); National Planning and Development Agency (Bappenas); Research and Development Agency, Ministry of Public Works and



Housing; Ciliwung Cisadane River Basin Organisation; Local Disaster Management Organization at West Java Province; The Indonesian Association of Disaster Experts (IABI); Jakarta Provincial Government. Additional funding for NE/S003282/1 was secured to focus on flood early warning, NERC/ESRC/Ristekditi, UK value: £93,072 (FEC) / £74,457 (grant).

The SIG has representation on Working Group 1 of the IOC UNESCO Indian Ocean Tsunami Early Warning and Mitigation System (IOTWMS) Intergovernmental Coordination Group (ICG) through Dr Harkunti Rahayu (ITB), Professor Richard Haigh and Professor Dilanthi Amaratunga (HUD). This will be used to promote the goals of CABARET on regional cooperation for MHEW, as well as promoting the role of Higher Education in MHEW and promoting closer working between HEIs and socio-economic actors across the region.

The SIG has secured agreement to publish an annual themed issue on tsunami early warning in the International Journal of Disaster Resilience in the Built Environment. The first themed issue is entitled Early Warning Systems to Reduce Tsunami Impacts, and will have 9 papers. It will be published in the 2<sup>nd</sup> quarter of 2020, as Volume 11, Issue 2 (<https://www.emerald.com/insight/publication/issn/1759-5908>). The second issue, to be Guest Edited by UoM and ITB CABARET partners, will focus on socio-technical innovations for early warning, and will be published in the 2<sup>nd</sup> quarter of 2021. The issues will be published in conjunction with IOC-UNESCO IOTWMS.

Enhancing Disaster Resilience Education in Asia (ADMU)

Evacuation planning, delays and vulnerable groups (UOP and UoM)

Local Government and Risk Mapping at local level (Andalas University and HUD)

Uptake and implementation policies on Public Private Partnership (PPPs) to stimulate private sector engagement and investment for Multi-Hazard Early Warning (MHEW) Systems for Coastal Resilience in Asia (UCLan)

Disaster and Climate Change Resilience in Small States, Islands & Archipelagic States & Remote Regions (UoM)

### **What resources will be needed for this and where are these resources expected to come from?**

The MHEW Symposium secured £15,000 funding from the Global Challenges Research Fund (GCRF), a £1.5 billion fund announced by the UK Government in late 2015 to support cutting-edge research that addresses the challenges faced by developing countries. GCRF forms part of the UK's Official Development Assistance (ODA) commitment, which is monitored by the Organisation for Economic Cooperation and Development (OECD). The Symposium is co-funded by the Disaster Management Center of Sri Lanka.

The journal special issues do not require external funding, but are resourced through the participation of Guest Editors from CABARET team and elsewhere.

Participation in the IOC-UNESCO ICG IOTWMS Working Group 1 is self funded.

Separate grants have been obtained or applied for to resources other activities, some of which have already been secured, as detailed above.

**The risks to sustainability that are foreseen and any mitigating actions that should be taken.**

**Lack of funding to carry forward work** – a number of research grants have already been submitted by the partners, aimed at taking forward and extending the work. Several of these have already been successful. A workshop on bidding was held at the final meeting of the CABARET project, aimed at identifying suitable funding sources and sharing knowledge on applying for external grants.

**Lack of commitment from CABARET partners** – all sandpits/SIGs were required to put forward workplans that set out realistic ways of carrying forward the work. The workplans were required to set out tangible activities and outputs, rather than mere aspirations.

**Lack of commitment from external partners, including socio-economic actors** – in many cases, the post project events and activities have been planned in conjunction with external partners, such as the March 2020 Symposium (in collaboration with the Disaster Management Center of Sri Lanka), and engagement with Working Group 1 of IOC-UNESCO IOTWMS.

### *Annex 1.3: Regional cooperation for MHEW (WP5 leaders)*

#### **What actions will be taken to ensure the sustainability of these initiatives (beyond the project funding period)?**

The results collected on the definition of the sustainability and resilience indicators for an integrated analysis through a Multi Criteria Analysis (MCA) will be included in at least one scientific publication including all the partners involved under the supervision of the Europeans partners involved in the WP5.

#### **The extent to which these initiatives will be sustained beyond the project (in terms of time and space).**

- Space: Expanded to European Countries and Asian Countries
- Time: beyond 2020 but after understanding the potential synergies among partners

#### **What resources will be needed for this and where are these resources expected to come from?**

Efficiencies have been obtained by cooperating with other projects, reducing the resources required.

#### **The risks to sustainability that are foreseen and any mitigating actions that should be taken.**

The scientific papers will be not realized – partners will be encouraged to still the milestone to finalize at least one publication based on the WP5 outputs thereby providing ongoing resources to support its operation.

*Annex 1.4: Partnerships with social and economic actors (WP6 leaders)*

**What actions will be taken to ensure the sustainability of these initiatives (beyond the project funding period)?**

1. Continuing on development/strengthening secondment opportunities
2. Potential proposals for secondments with an emphasis of the Asian Countries
3. Extension of the secondments from Asian Countries to European Countries and vice versa
4. Use of implementation of the secondment plan methodological approach as an instrument as potential tool for new expertise creation
5. Continuation of the communication with socio economic actors based on the identified list of key DRM actors
6. Supporting University-University, University-socio economic actors and PPP partnerships for further developed secondment plan.

**The extent to which these initiatives will be sustained beyond the project (in terms of time and space).**

- Space: Expanded to other European Countries still keeping the emphasis on Asian Countries
- Time: beyond 2020 but after understanding the potential synergies among partners

**What resources will be needed for this and where are these resources expected to come from?**

- What resources: staff costs, travel/accommodation/daily allowances
- Where: from internal partners budget or new developed project and from socio-economic actor (for example DRM agency)

**The risks to sustainability that are foreseen and any mitigating actions that should be taken.**

| <b>Risk</b>   | <b>Action</b> | <b>Mitigating action</b>                                |
|---|---------------|---|
| Lack of interest for socio-economic Institution     | 1, 2, 4, 5, 6 | Raise awareness<br>Rise contact<br>Invitation to events |
| Lack of funding                                     | all           | Apply to international donors                           |
| Lack of time for socio-economic Institution and PPP | all           | Define specific staff/task for the secondment plan      |
| Lack on clearness for the secondment plan           | 4             | Support from the project partnership                    |

*Annex 1.5: Learning and teaching tools, methodologies and approaches (WP7 leaders)*

**What actions will be taken to ensure the sustainability of these initiatives (beyond the project funding period)?**

The learning resources developed through the project have been hosted on an existing knowledge ehub: <http://www.disaster-resilience.net/knowledgehub/course/index.php>. This resource is shared with other EU projects, thus helping to provide critical mass, synergies and efficiencies.

The learning resources are being adopted by Maldives National University to support implementation of their new Masters programme on....

**The extent to which these initiatives will be sustained beyond the project (in terms of time and space).**

The University of Huddersfield has agreed to host the knowledge hub for a minimum of 3 years after the project.

**What resources will be needed for this and where are these resources expected to come from?**

Efficiencies have been obtained by cooperating with other projects, reducing the resources required.

**The risks to sustainability that are foreseen and any mitigating actions that should be taken.**

The knowledge hub is not maintained – partners will be encouraged to use the knowledge hub for future projects, thereby providing ongoing resources to support its operation.

The knowledge hub is not used / accessed – the hub will be promoted at a regional level through IOC-UNESCO ICG IOTWMS Working Group 1.

## Annex 2: Special Interest Groups Reports

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| <b>Name of the SIG (or title of the key action)</b>        | ENHANCING DISASTER RESILIENCE EDUCATION in ASIA  |
| <b>Research area</b>                                       | Research area Potential participants will be informed of a theme(s) beforehand to organize mentoring sessions and showcase   |
| <b>Group members</b>                                       | Philippines: Kendra Gotangco, Cris Lopez, Abby Favis (Ateneo), Mario de Leon (DLSU) Maldives: Fathmath Shadiya, Maryam Humra (Maldives National University) Sri Lanka: Chamal Perera (University of Moratuwa) Indonesia: Mais Dewo (University Andalas)  |
| <b>Scope of the challenges relevant to the SIG/sandpit</b> | Sandpit event explored scope by defining the potential forms of “education” (e.g. formal: degree program, certificate course etc; or informal: community workshops); and the potential content of “disaster resilience education”. It was agreed that the selection of form and content will depend on the target stakeholders.<br><br>For this particular sandpit proposal, the targets are DRR faculty, students, practitioners and potential industry partners. It is envisioned that this event will be implemented in conjunction with each of the succeeding CABARET meetings to have more involvement of and impact in host country.  |
| <b>Problems and challenges identified by group members</b> | Expertise needed: For Showcase - engineers, architects, materials design For Mentoring - CABARET experts + local experts<br>Challenges: logistical, coordination, financial to support additional participants, getting industries to get involved (can host university provide the venue as counterpart support?) → scale will depend on how much funding support is available  |
| <b>Proposed activities with time frames</b>                | What activities are you proposing to address this problem or challenge? 1. Ask next host (Myanmar/Philippines/Indonesia) if they are willing to build the event into the program (see if CABARET can support) 2. The host will organize (secure industry partners, etc.)<br>Timescale: • One event for each CABARET meeting (Myanmar, Philippines, Indonesia) • Secure decision from Myanmar by May (for implementation in October 2018)<br>The European Commission support for the production of this publication does not constitute an endorsement of the contents which reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein<br>• Secure decision from Philippines in October ( for implementation in March 2019)<br>• Secure decision from Indonesia in March 2019 ( for implementation in October 2019)<br>What support do you need from CABARET? • Financial support • Willingness of experts to mentor • Organizational aspect |
| <b>Expected contribution from the proposal</b>             | Extension event implementation o Networking activity – which may lead to identifying other joint collaborations o Knowledge exchange o Technology transfer   |

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| <b>Title</b>         | <b>Gaps in Evacuation Planning for Coastal communities – Case Studies in Myanmar, Sri Lanka &amp; Philippines</b>   |
| <b>Research area</b> | Several Coastal hazards affect the coastal communities of the respective countries. Most of the coastal communities are vulnerable due to the lack of education, lack of access, informal settlements and living in vulnerable areas. These characteristics are common for partner countries Myanmar, Philippines & Sri Lanka. This study focuses on investigating the gaps in evacuation planning for coastal communities. |

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| <b>Group members</b>                                       | Prof. Ranjith Dissanyake<br>Dr. Chaminda Bandara<br>Dr. Chandana Siriwardana<br>Raymond S Rodolfo<br>Dr. Seinn Lei Aye<br>Dr. Lei Lei Aung<br>Naw Klay Paw<br>Saw Htet Thura Lin<br>Gimhan Jayasiri<br>Sameera Hippola<br>Darshana Jayasooriya   |
| <b>Scope of the challenges relevant to the sandpit</b>     | Original sandpit proposal was to investigate the problems in evacuation planning, delays and vulnerable groups. Original proposal was modified to limit the scope of the study into more specific boundaries and the new proposal is to identify the gaps in the said evacuation planning for coastal communities. Three case studies are proposed from Myanmar, Sri Lanka & Philippines. For these three case studies, boundaries of the scope were identified. The scope is limited to several selected coastal communities that affect the most from different coastal hazards. The tool proposed to be used in the study is questioner surveys. Separate questioners are carried out for different stakeholders such as authorities and communities etc.   |
| <b>Problems and challenges identified by group members</b> | Several problems and challenges were identified; <ul style="list-style-type: none"> <li>• Identification of coastal communities and their participation to the study</li> <li>• Obtaining permission from government agencies</li> <li>• Challenges related to parallel execution of the study in all three countries.</li> </ul> Some other important points to be noted are given below; <ul style="list-style-type: none"> <li>• Terminology related to “evacuation”, “resettlement” was identified and defined</li> <li>• English language will be used for all the communications between three countries and local languages within each country will be used for Questionnaire surveys.</li> <li>• Three questioners were developed previously were discussed and updates will be carried out by UOP &amp; UoM. New questioner was drafted for community level at this sandpit.</li> <li>• Statistical evaluations and data analysis will be facilitated and updated by UOP &amp; UoM.</li> </ul> |
| <b>Proposed activities with time frames</b>                | <ul style="list-style-type: none"> <li>• Updating and finalizing the Questionnaires - April 2018</li> <li>• Submitting Abstracts for ICBR 2018 – 15 April 2018</li> <li>• Collect data &amp; Analysis – April 2018 – May 2018</li> <li>• Submit 3 full papers, one from each country to ICBR – 08 June 2018</li> <li>• Short term scientific missions to the 3 partner countries to experience the status of the coastal communities (Myanmar – Early Oct 2018, Philippines– End of Dec 2018, Sri Lanka – Begin of Jan 2019)</li> <li>• Presentation at ICBR – Nov 2018</li> <li>• Second phase of data collection – October 2018 – Feb 2019</li> <li>• Submitting a journal paper (combining data from all three countries) – March 2019</li> </ul> The team is expecting financial support & technical expertise from CABRET for the said activities.  |
| <b>Expected outputs or outcomes from the activity</b>      | <ul style="list-style-type: none"> <li>• Three conference papers from 3 partner countries</li> <li>• One journal paper combining three papers + data gathered in the second phase</li> <li>• Dissemination of work to the stakeholders</li> </ul>  |

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| <b>Title</b>   | <b>Local Government and Risk Mapping at the Local Level</b>   |
| <b>Research area</b>                                       | Multi-hazard Disaster Risk Assessment Method  |
| <b>Group members</b>                                       | <ol style="list-style-type: none"> <li>1. Taufika Ophiyandri (Andalas University)</li> <li>2. Ezri Hayat (University of Huddersfield)</li> <li>3. Abdul Hakam (Andalas University)</li> <li>4. Febrin Ismail (Andalas University)</li> <li>5. Francesco (Riga Technical University)</li> <li>6. Marlon (De La Salle University)</li> <li>7. Prof Day Aung (University of Yangon)</li> <li>8. Mariyam (Maldives National University)</li> </ol>  |
| <b>Scope of the challenges relevant to the sandpit</b>     | <p>This particular event is focusing on how HEIs can contribute to enhancing the capacity of local government in conducting risk assessment at the local level.</p> <ul style="list-style-type: none"> <li>• Local governments play important role in DRR</li> <li>• Local government capacity in DRR has been unequally low and resources has not been effectively and efficiently used.</li> <li>• HEIs as the powerhouse of knowledge creation has not been actively contributing to the LG risk assessment process</li> </ul>   |
| <b>Problems and challenges identified by group members</b> | <ul style="list-style-type: none"> <li>• Local government has low capacity in Disaster Risk Assessment,</li> <li>• Collaboration between HEIs and Local Government has been very limited.</li> <li>• HEIs knowledge and capacity in Disaster knowledge, especially in conducting Disaster Risk Assessment, vary</li> <li>• Methodology used for Risk Assessment also vary.</li> </ul> <p>Detail discussion can be found in separate sheet.</p>  |
| <b>Proposed activities with time frames</b>                | <p>There are three main activities proposed:</p> <ol style="list-style-type: none"> <li>1. Review of risk assessment guidelines.<br/>The aim of this exercise to identify disaster risk assessment measures and guidelines available and adopted by LGs in each partner countries. The consortium will therefore: <ul style="list-style-type: none"> <li>- Provide a basis for cross-country comparison by developing a template for the risk assessment method. The template will be developed by Andalas University team as the sandpit leader, and draft is expected to be ready for comments by end of March 18.</li> <li>- Using the developed template, each country partner team will review existing risk assessment measures and guidelines in their country (April – August 2018)</li> <li>- The initial findings will be presented for comments from HEIs and LGs in the workshop in Myanmar (Activity 2 - October 18). The workshop will run side to side with CABARET meeting in Yangon, Myanmar, October 2018.</li> <li>- Revised findings and country report will be consolidated in September 2018.</li> <li>- The report synthesis will be submitted for publication in ICBR 2019 in Indonesia.</li> </ul> </li> <li>2. Risk Assessment workshop (Yangon, Myanmar, October 2018)<br/>The aim of the workshop is to enhance the capacity of HEIs and LG in conducting Risk Assessment through effective collaboration.</li> </ol> |



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|   | <ul style="list-style-type: none"> <li>- The workshop will invite Myanmar’s HEIs and LGs representatives as participants</li> <li>- The workshop will have two-fold objectives <ul style="list-style-type: none"> <li>o Collecting inputs and comments for the initial findings of the guideline review.</li> <li>o To serve a knowledge exchange opportunity and discussion platform for HEIs and LGs to enhance collaboration in disaster risk assessment.</li> </ul> </li> </ul> <p>3. Research project proposal (detail in separate sheet)</p> <p>The project is aimed at improving resilient through enhanced collaboration between HEI and LG in Disaster Risk Assessment. The project will run for 36 months duration with 5 work packages proposed:</p> <ul style="list-style-type: none"> <li>- Work Package 1 – Development of assessment tools for LGs and HEIs capacity in Disaster Risk Assessment</li> <li>- Work package 2 – Project Management</li> <li>- Work package 3 – Assessment of HEIs capacity</li> <li>- Work Package 4 – Assessment of LGs capacity</li> <li>- Work Package 5 – HEIs and LGs</li> <li>- Work Package 6 – Quality monitoring</li> <li>- Work Package 7 – Dissemination and publication</li> </ul> |
| <b>Expected outputs or outcomes from the activity</b> | <p>Outcomes:</p> <ul style="list-style-type: none"> <li>- Increased DRR capacity of the HEIs and LGs.</li> <li>- Improved and effective collaboration between HEIs and LGs in disaster risk assessment through knowledge sharing and joint activities.</li> <li>- Stronger regional and international cooperation between HEIs</li> </ul> <p>Outputs:</p> <ul style="list-style-type: none"> <li>• Conference paper</li> <li>• Research proposal</li> </ul>  |

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| <b>Title</b>         | <b>PITCH - PPP Initiatives To improve Coastal resilience in Harbour projects</b>  |
| <b>Research area</b> | <p><b><u>A brief summary of the broad research theme or issue being addressed – this should be presented by the proposer or nominee</u></b></p> <p>The study is based on the issues related to harbour projects operated as Private-Public Partnerships (PPP) in the countries of Maldives, Indonesia and Sri Lanka. Specifically, to see whether the design accommodates and resilient to coastal hazards such as subduction, tsunamis, strong current and other types of multi-hazards in the region. Accordingly, the study framed its objectives as follows:</p> <ol style="list-style-type: none"> <li>1. Study the current context relating to PPP initiatives in DRR and CCA in Port/Harbour projects.</li> <li>2. In-depth examination of issues relating to PPP initiatives in DRR and CCA in Port/Harbour projects. – Maldives, Sri Lanka and Indonesia</li> <li>3. To investigate the common issues of PPP initiatives in DRR and CCA in Port/Harbour projects in the three countries – Maldives, Sri Lanka and Indonesia</li> </ol> |
| <b>Group members</b> | <p><b><u>Who is taking part, including any roles assigned (leader, rapporteur etc.?)</u></b></p> <ol style="list-style-type: none"> <li>1. Dr Champika Liyanage</li> <li>2. Dr Harkunti Rahayu</li> <li>3. Ms In In Wahdiny</li> <li>4. Prof Benedict Kombatan</li> <li>5. Ms Giani Ananda</li> <li>6. Dr Shazla Mohamed</li> <li>7. Mr Chameera Randil</li> <li>8. Dr Firdhous</li> </ol>  |

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| <p><b>Scope of the challenges relevant to the sandpit</b></p> | <p><b><u>Explore initial scope of the sandpit, based on proposal. This may evolve during the discussion. Identify any boundaries.</u></b></p> <p>Coastal hazards are common across Asia as well as in the globe. It affects properties, infrastructure, environment as well as community. Harbours are significant large-scale infrastructure contributing the economic growth and wellbeing. Different types of harbours exist for example, cargo harbours, crew ship harbours, fisheries harbours, natural harbours etc. For example, there are fisheries harbours and cargo harbours in Sri Lanka. Despite its importance, harbours are affected in different ways due to increasing trend of coastal hazards. For example, tidal waves, tsunamis, sedimentation and erosion.</p> <p>Most of these harbours are established and operated under private-public partnerships because of the nature and size of investment. There are many forms of PPP for example, BOOT, BOT etc.</p> <p>As stated earlier, harbours are affected by coastal hazards. However, most of existing harbours are not ready to reduce disaster risks and enhance resilience for the harbour itself as well as its community. Therefore, to address this problem of effects of coastal hazards, effective DRR and climate change adaptation strategies are required.</p> <p>In addition, DRR strategies are related with the type of PPP operated. For example, the level of involvement of stakeholders depends on the type of the PPP. For example, if the PPP agreement is for 90 years, the investors as well as operators must concern the arrangement for facing multi hazards within the harbour to make sure their investment is secure is essential. Similarly, they might concern the resilience among the communities' lives in the surrounding area. This could be different when the PPP is for 30 years. The investor may only concern the return on their investment than community resilience when the PPP is a shorter agreement.</p> <p>Similarly, the type of the PPP determines the arrangements made against coastal hazards. For example, within BOOT, the private investor may focus on profits than community resilience. This may require, the Government to influence the private and other stakeholders towards more resilience mechanisms. The location of the harbour affects the nature of the PPP. For example, a harbour in Indonesia has a very narrow route for shipping and this may require additional investments to broaden the route. This may involve the involvement of PPP.</p> <p>For example, Colombo port expansion project in Sri Lanka, had considered the additional resilience and risk reduction measures such as construction of break water structuring mechanisms etc. Another major issue related to PPP for harbour development is the minimum level of stakeholder engagement and their feedback. Specifically, after implementation a project, there must be a stakeholder evaluation to identify their existing issues, their level of satisfaction etc. As stated earlier, the level of involvement of investor and the government should be at an agreed level regarding profitability and safety for the community. This is furthermore complicated by the type of the harbour. For example, when the harbour is used as a crew-ship, the level of safety among the crew as well as the community is highly important. For example, in Maldives most of the harbours are crew-ship harbours and they need additional investments for assuring resilience.</p> <ul style="list-style-type: none"> <li>•</li> </ul> |

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| <p><b>Problems and challenges identified by group members</b></p> | <p><b><u>Agree a common language and terminology amongst diverse backgrounds and disciplines – define any key terms.</u></b></p> <p><b>Indonesian perspective</b><br/>When determining the type of PPP for many harbor projects, do not consider many aspects: such as tariff systems, investors, ability of facing to coastal hazards, their preparedness for future disasters, perspectives of stakeholders in many Asian countries. It is also agreed that the PPP design should be DRR based design due to increasing trend of coastal hazards along with climate change.<br/>Because harbours face many challenges for example, sea erosion; salination problem; infrastructure problems (coastal protection, communication problems, Cool chain logistics) etc. Some of the harbours have considered measures to secure their harbour development for the resilience of the harbour itself, ignoring the resilience of the community around the harbour.</p> <p><b>Sri Lankan perspective</b><br/>Sri Lanka has one of the best natural harbours in the world. Most of the harbours in Sri Lanka are fishery type. In addition, Colombo port provides the cargo services to many countries. Even though it was expected to grow the level of operations in Colombo port, the level of growth was decreased due to outdated systems and equipment. Hence, Sri Lanka lost significant share of operations through port activities. To address this issue, the government of Sri Lanka initiated PPP to develop Colombo port in 1999. This was a BOT system (Built-Operate and Transfer) for a 30-year period. In addition, Hambanthota port development was initiated as a PPP with investors in China. However, because of this PPP agreement, there were restrictions imposed on the development of the small ports available within the radius of 200km. These are some major issues existing in ports/harbours in Sri Lanka. Similarly, the loan repayment for the project has become a major burden to the government of Sri Lanka and hence 80% of shares have been sold to Chinese investors for 99 years.</p> <p><b>Maldivian perspective</b><br/>Most of the Maldivian ports are crew-ship based along with rising sea level. Hence their resilience mechanisms for port itself and the community is much harder than other ports.</p> |
| <p><b>Proposed activities with time frames</b></p>                | <p>Feedback on the Case Study Template:<br/>Pilot Interview: (better to identify the participants; and contact the relevant interviewees now itself)<br/>Revisions to the current Case study template:<br/>Analysis to be completed: 31st of May<br/>Main data collection to be started:<br/>Main data collection to be completed:<br/>Analysis to be completed:</p>  |
| <p><b>Expected outputs or outcomes from the activity</b></p>      | <p>Literature Review – General and UK<br/>Detailed Case Studies<br/>Conference Papers (03 papers) – ICBR 2018, Portugal<br/>Secondment Plan<br/>Conference Presentations – ICBR 2018, Portugal<br/>Journal Paper (one or two)</p>   |

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| <p><b>Title</b></p> | <p><i>A short title for sandpit</i><br/><b>Disaster and Climate Change Resilience in Small States Islands &amp; Archipelagic States &amp; Remote Coastal Regions</b></p> |
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| <p><i>Research area</i></p>                                   | <p><i>A brief summary of the broad research theme or issue being addressed – this should be presented by the proposer or nominee</i></p> <p><b>Small island developing states</b> (SIDS) have been identified as particularly vulnerable to natural disasters and climate change. However, although SIDS have similar geographical features, natural hazards produce different outcomes in different states,</p> <p><b>IMF (2016)</b></p> <ul style="list-style-type: none"> <li>▪ Small developing states are disproportionately vulnerable to natural disasters.</li> <li>▪ One-third of small developing states are also highly or extremely vulnerable to climate change in the lifetime of the current generation.</li> <li>▪ Well-designed domestic policies can reduce the direct human and economic costs of climate change and natural disasters.</li> <li>▪ Financing is needed for risk reduction and response to natural disasters and climate change.</li> <li>▪ On climate change, financing has been oriented toward mitigating greenhouse gas emissions rather than helping small states adapt to global warming.</li> </ul> <p><b>ISSUES TO ADDRESS:</b></p> <ul style="list-style-type: none"> <li>▪ <b>Small Island States, Archipelagic States &amp; Remote Regions</b> present specific and different challenges; Remoteness &amp; Archipelagicity</li> <li>▪ <b>Assessing disaster risks:</b> what kind of knowledge is required? who produces the knowledge? How can the knowledge be applied to increase preparedness, early warning systems, contingency planning?</li> <li>▪ <b>Capacity Building:</b> Internal capacity for small islands and remote regions for disaster response: essential development and resources; essential considerations; capacity building and enabling wide audience;</li> <li>▪ <b>Resources:</b> Limited resources management; isolation: why are regions isolated and how is this addressed; Connectivity between Islands facilitated; connections with neighbouring larger regions and countries; Communication systems;</li> <li>▪ <b>Development Planning &amp; Resilience:</b> Development planning and economy; Resources and Waste strategies;</li> </ul> <p><b>FOCUS:</b> Coastal communities and their vulnerabilities; Built Environment; early warning system and preparedness; Multidisciplinary approach;</p> |
| <p><i>Group members</i></p>                                   | <p><i>Who is taking part, including any roles assigned (leader, rapporteur etc.?)</i></p> <p><i>Ask all group members to introduce themselves, their expertise, and initial areas of interest concerning the topic</i></p> <p><b>Group Members:</b></p> <p>Ruben Paul Borg &lt;ruben.p.borg@um.edu.mt&gt;,&lt;ruben.p.borg@gmail.com&gt;,<br/> Connie Maraan &lt;Connie.maraan@dlsu.edu.ph&gt;,<br/> Boyko Ranguelov &lt;branguelov@gmail.com&gt;,<br/> Babang Bistijono &lt;bistijono@gmail.com&gt;,<br/> Deri SYAEFUL ROHMAN &lt;Deri.syaeful@student.upi.edu&gt;,<br/> Qurrata Aini &lt;Qurr.aini13@gmail.com&gt;,<br/> Abdulla Naseer <a href="mailto:abdulla.naseer@mnu.edu.mv">abdulla.naseer@mnu.edu.mv</a>,<br/> Mariyam Eeman <a href="mailto:Mariyam.eeman@mnu.edu.mv">Mariyam.eeman@mnu.edu.mv</a>,<br/> Claudio Rochas &lt;Claudio@ekodoma.lv&gt;</p>  |
| <p><i>Scope of the challenges relevant to the sandpit</i></p> | <p>Explore initial scope of the sandpit, based on proposal. This may evolve during the discussion.</p> <p>Identify any boundaries.</p> <p><b>Challenges:</b></p> <ul style="list-style-type: none"> <li>▪ Specific Circumstances governing Disaster Resilience in Island, Remote Coastal Communities and Island / Archipelagic states.</li> <li>▪ Differences and Similarities between different states / regions with regards Islands in the participating countries</li> <li>▪ Data availability, lack of resources,</li> </ul>  |

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|   | <ul style="list-style-type: none"> <li>▪ Cultural Differences</li> <li>▪ Training and capacity gaps in these communities</li> </ul>  |
| <p><i>Problems and challenges identified by group members</i></p> | <p>Agree a common language and terminology amongst diverse backgrounds and disciplines – define any key terms.<br/>Share understanding of the problem or challenge from the perspective of participants' expertise.<br/>Identify what type of expertise is required to address each problem / challenge, including any synergies.<br/>Identify a list of specific problems or challenges that you wish to address.</p> <p><b>Specific Action (Summary):</b></p> <ul style="list-style-type: none"> <li>▪ Disaster Resilience in Small states, Islands and Archipelagoes and Remote Coastal Communities: How different are they from other regions? Lack of resources, lack of data for specific regions as against larger territories.</li> <li>▪ Link between Sustainability associated with optimization and resilience; How can sustainability assessment of urban areas / regions / territories allow for resilience assessment through appropriate indicators? [Example: How infrastructure with a significant environmental impact, intended to facilitate communication between Islands to improve tourism infrastructure (including sea planes, air strips, fast boats), proves to be effective resource in case of disaster promoting resilience.]</li> <li>▪ Communication between Islands – Isolation of communities. Culture and tradition and its impact in disaster resilience.</li> <li>▪ Resources and waste management – impact on resilience.</li> </ul>   |
| <p><i>Proposed activities with time frames</i></p>                | <p><i>What activities are you proposing to address this problem or challenge?<br/>What expertise is required?<br/>Over what timescale are these activities to be undertaken? Try to focus on activities in the short term – next 12 months, but also consider longer term actions.<br/>What support do you need from CABARET?</i></p> <p><b>Summary of the Group Proposed ACTIONS:</b></p> <ol style="list-style-type: none"> <li>1. Hazard Maps for Small Islands and Remote Coastal Communities</li> <li>2. Disaster Risk Assessment Methodology for Small Islands and Remote Coastal Communities</li> <li>3. Sustainability and Resilience in Small Island States and Remote Coastal Communities</li> <li>4. Connectivity and Isolation in Small Island States and Remote Coastal Communities</li> <li>5. Resources and Waste - Resilience in Small Island States and Remote Coastal Communities</li> </ol> <p><b>ACTION:</b></p> <ol style="list-style-type: none"> <li>1. <b>Hazard Maps</b> – Definition, Training and capacity gaps – HEIs and Local Government; training of community leaders in coastal and islands hazards definition programme; Case Study Maldives.<br/><u>Case Study Analysis:</u> including data collection, definition of a methodological framework, supported with field work activity; Hazard Maps for different hazards; training and capacity gaps; Collaborative framework protocol identifying data resources, gaps and strategic action</li> <li>2. <b>Disaster Risk Assessment Methodology - ref. Multi-hazard:</b> increasing resilience of islands to natural disasters including climate related disasters; various hazards including swell flooding, climate change, sea level rise, Tsunami, earthquake; storms, flooding etc. Archipelago exercise; adaptive capacity for climate change.</li> </ol> |

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|  | <p><u>Workshop</u> (Half-day Part A) in Yangon concerning Disaster Resilience in Islands and Small / Remote Coastal Communities; Multihazard scenarios with reference to Preparatory activity in the definition of Hazard Maps. Training in the methodology; Development of material for the support of Local Government and local communities</p> <p><u>Research project</u>: in Disaster Risk Assessment methodology for Multihazard scenarios for Small Island and Archipelagoes and remote coastal communities.</p> <p>3. <b>Sustainability and Resilience</b>: Sustainable Design addressing efficient use of materials and optimisation; redundancy and resilience; Methodological approach: how specific projects have an impact on sustainability and resilience – linking together – develop plans sensitive to both.</p> <p><u>Workshop</u> (Half-day Part B) in Yangon concerning Sustainability and Resilience, Training and capacity building for surrounding communities in sustainability tools, taking into account also resilience. Enhancing capacity of HEIs and Local Government and organisations to Sustainability tools and accounting for resilience through training;</p> <p><u>Research proposal</u> on the outcomes of the workshop;</p> <p>4. <b>Connectivity and Isolation</b>: Communication - downscale approach Traditional knowledge</p> <p><u>Research Project</u>: Survey: How local communities manage disasters, assessment of specific circumstances for the communities in Islands and Archipelagoes.</p> <p>5. <b>Resources and Waste - Resilience</b>: Resource management and waste linked to resilience in small Islands and Coastal Communities: Effectiveness of water management initiatives in small island environments. Waste management as a comparative study.</p> <p><u>Research project</u>: Assessment of differences and Similarities, definition of a methodological framework for assessment of Resources and impact on Resilience.</p> |
| <p><i>Expected outputs or outcomes from the activity</i></p> | <p><i>Outcomes are not pre-determined but will be defined during the sandpit. A variety of outputs and outcomes are envisaged, ranging from a single large research project, to several smaller projects, feasibility studies, networking activities, overseas visits, a conference paper, a journal paper and so on. You may wish to identify a short-term output, but also a longer-term vision</i></p> <p><b>Short Term Outputs:</b></p> <p><b>Hazard Maps</b></p> <p><u>Case Study Analysis</u>: including data collection, definition of a methodological framework, supported with field work activity; Hazard Maps for different hazards; training and capacity gaps; Collaborative framework protocol identifying data resources, gaps and strategic action</p> <p><b>Disaster Risk Assessment Methodology - ref. Multi-hazard:</b> <u>Workshop</u> (Half-day Part A) in Yangon concerning Disaster Resilience in Islands and Small / Remote Coastal Communities; Multihazard scenarios with reference to Preparatory activity in the definition of Hazard Maps. Training in the methodology; Development of material for the support of Local Government and local communities</p> <p><b>Sustainability and Resilience:</b></p> <p><u>Workshop</u> (Half-day Part B) in Yangon concerning Sustainability and Resilience, Training and capacity building for surrounding communities in sustainability tools, taking into account also resilience. Enhancing capacity of HEIs and Local Government and organisations to Sustainability tools and accounting for resilience through training;</p> <p><b>Longer Term Action:</b></p>   |

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|  | <p><b>Disaster Risk Assessment Methodology - ref. Multi-hazard:</b><br/> <u>Research project:</u> in Disaster Risk Assessment methodology for Multihazard scenarios for Small Island and Archipelagoes and remote coastal communities.</p> <p><b>Sustainability and Resilience:</b><br/> <u>Research proposal</u> on the outcomes of the workshop;</p> <p><b>Connectivity and Isolation:</b><br/> <u>Research Project:</u> Survey: How local communities manage disasters, assessment of specific circumstances for the communities in Islands and Archipelagoes.</p> <p><b>Resources and Waste - Resilience:</b><br/> <u>Research project:</u> Assessment of differences and Similarities, definition of a methodological framework for assessment of Resources and impact on Resilience.</p> |
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| <i>Title</i>         | A detailed study of the technical, legal and socio-cultural complexities involved in communicating coastal based multi hazard early warning to jurisdictional agencies and response partners.   |
| <i>Research area</i> | <p>This study will focus on the interface between upstream detection of the coastal hazards, to the downstream response, including potential evacuation of the exposed communities. This interface involves a wide array of jurisdictional agencies and response partners, including national contact points, and a range of sub-national emergency operational centres and related actors. Protocols and standard operating procedures for processing and issuing warnings vary greatly at the national and sub-national levels and it is possible that same agencies are involved in multiple hazards. Experience over recent years of the impacts of hazards has shown that inadequate preparation for, and response to, emergency situations have contributed to widespread damage and the avoidable loss of lives and livelihoods. These hazards set back economic development in both developed and developing economies, and tend to disproportionately affect the most vulnerable in society. The shortcomings in preparation have been due to a lack of warning through poor regional detection and communication systems, but they also reflect inadequate awareness, planning and coordination. Recent studies and practical experiences from the Indian Ocean region suggest that more attention needs to be paid to the cognitive and normative challenges in positioning the early warning systems and preparedness in the wider context of social change in the coastal societies and communities at risk, and for critical reflection of 'on-the-ground' experiences and lessons learnt.</p> <p>National legal frameworks within member states do not enable them to issue evacuation warnings directly. This is the responsibility of each country, which have varying legal frameworks, technical capacities to forecast potential impacts, and socio-cultural approaches. For example, the ability to create accurate, real-time tsunami warning information through tsunami energy estimates, flooding maps, and tsunami-induced currents, varies across countries, but can be critical in determining potential local impacts. Using whatever information is available and depending on the legal frameworks of a country, the decision on whether to evacuate may be taken at the national or various sub-national levels, sometimes down to local emergency operation centres. There is considerable debate as to which level is best able to make such decisions. However, there is a lack of understanding into the approaches of different countries, or their effectiveness. This sandpit proposal seeks to provide a much clearer insight into what is happening at the national and sub-national levels, and the options available h to improve their standard operating procedures.</p> |

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|   | <p>The planned activity will involve an initial detailed study and comparison of coastal based multi hazards and their downstream activities. The results of the study will be presented at the next ICBR Conference and a journal paper and initial briefing report will be prepared. Initial findings will also be presented at the Inter-Governmental meeting, to inform future policy and capacity development, including its 2019-2021 works programme. This provides an opportunity to achieve significant impact from the work. It is anticipated that the results will lay the foundation for a wider study, for which external funding will be sought.</p>  |
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| <p><i>Scope of the challenges relevant to the sandpit</i></p> | <p><b>Scope:</b> Coastal multiple, rapid hazards with an element of early warning (including tropical cyclones, tsunamis, sea erosion, storm surges, wind storms, earthquakes)</p> <p>Country scope: <b>The study will be based in the participating countries [Myanmar, Indonesia, Philippines]</b> Note: council specific (compare and contrast every point in the analytical framework)</p> <p>Stage of the management cycle: <b>Pre-disaster preparedness and prevention</b></p> <p>Target audience: <b>National, regional and local entities</b> (governments), <b>other national agencies, international organisations</b> (including donors/ funders), <b>people at risk, researchers and academics</b></p> <p>Scope: <b>Both the provider and the receiver</b> (the government and the people)</p> <p>Scope and boundary: <b>Conclusion should arrive at the end</b> (hazards will be kept separate for the time being but might be combined as an integrated framework – this will be decided later once we have more information following from completing first milestones)</p> <p><u>Definitions:</u></p> <p><b>Coastal flooding</b> is a result of tropical cyclones and tropical surges</p> <p><b>Coastal erosion</b> cannot be part of early warning system prevention</p> <p>Boundaries identified for costal hazards with an element of early warning: <b>Fluvial rainfall and rapid onset.</b></p> <p>Downstream definition: stakeholders (starting point <b>National Warning Centre</b>, end point are the <b>people at risk</b>)</p>   |



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| <p><i>Problems and challenges identified by group members</i></p> | <p>A list of specific problems: <b>legal and institutional framework; further exploring the definition of downstream in the context of multi hazard early warning systems</b></p> <p><u>Challenges:</u></p> <ol style="list-style-type: none"> <li>1. <b>Define Multi-Hazard Coastal Early Warning Systems (MHCEWS)</b></li> <li>2. <b>Analytical framework</b> [components of the study- must include the types of stakeholders involved in the downstream system and identify who the decision makers are]: <ol style="list-style-type: none"> <li>a) <b>the legal system</b> (including institutional arrangements such as centralised and decentralised, vertical or horizontal considerations),</li> <li>b) <b>socio-cultural considerations</b> (language, awareness, local experiences and knowledge etc.),</li> <li>c) <b>communication mechanisms, human and technical capacity</b> (education),</li> <li>d) <b>financial mechanisms</b> (funding for implementation etc.)</li> </ol> </li> <li>3. <b>Deliberate the feasibility of one integrated system</b> (One Integrated System for Multi Hazard or Integrated Multi System for Each Hazard?)</li> </ol> <p>Common language and terminology: <b>outlined above</b> (<i>scope</i>).</p> <p><b>General trend -&gt; adequate applications on a national level</b> (expertise may need to be localised and address what a country may need)</p>   |
| <p><i>Proposed activities with time frames</i></p>                | <p>Initially using the CABARET resources, later will look at getting external funding</p> <p>Activity 1: <b>Establish a common understanding and terminology on the Multi-Hazard Early Warning Systems</b> through <b>literature review</b> (worldwide – national to international).</p> <p>Activity 2: <b>Explore the feasibility of the analytical framework</b> (identify the options for Activity 4) through <b>Round table discussions (Focus groups/ Interviews)</b>.</p> <p>Activity 3: <b>Data analysis.</b></p> <p>Activity 4: <b>Determine the most suitable approach for Multi-Hazard Coastal Early Warning</b> (linked to Activity 1 and 2 and the concept of one integrated system or an integrated multi system).</p> <p>Activity 5: <b>Explore and identify enablers, challenges and barriers associated with our recommendation.</b></p> <p>Activity 6: <b>Identify pathways to increase effectiveness of research engagement and uptake with the potential of impact on policy, practice and governance for Multi-Hazard Coastal Early Warning.</b></p> <p>Activity 8: <b>Publishing research outputs in terms of journal and conference papers and contributing to policy.</b></p> <p><u>Expertise:</u><br/>No further expertise needed.</p> <p><u>Milestones:</u></p> <p>Milestone 1: <b>Literature review to be done before the Myanmar workshop</b> (report the findings and prepare the guidelines and the data collection instruments) [September 2018, Myanmar].</p> <p>Milestone 2: <b>Use Myanmar workshop as a reflection and progress review</b> (question 2 and analysis – two short country summaries) [September 2018, Myanmar].</p> <p>Milestone 3: <b>Initial structure and review for the data collection</b> [September 2018, Myanmar].</p> <p>Milestone 4: <b>Initial findings and options for multi-hazard early warning</b> [Philippines].</p> <p>Milestone 5: <b>Challenges to be outlined short country reports</b> [December 2018].</p> <p>Milestone 6: <b>Journal paper, policy brief and grant proposal</b> [February 2019].</p> <p>Milestone 7: <b>Present a poster at the ICG UNESCO</b> [March 2019].</p> <p>Milestone 8: <b>Present the findings</b> [November 2019, Indonesia].</p> |

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| <i>Expected outputs or outcomes from the activity</i> | Potential results: <b>Sharing best practices and experiences across the countries</b><br>(CABARET will be used as platform)<br>Further notes: <ul style="list-style-type: none"><li>- CABARET's funding will be used: the potential need for any staff exchanges will be revisited at the next meeting in Myanmar.</li><li>- Organise Skype chat to discuss progress during half-term.</li></ul> |
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