



Climate Change & Development Community



Climate Change & Development (CCD) Community, of the Pacific Solution Exchange

Consolidated Reply

Query: Loss and Damage associated with Climate Change Impacts – Advice; Experience

Compiled by [Jone Vakalalabure](#), Community Facilitator, [Setaita Tavanabola](#), Research Assistant and [Ruci Yauvoli](#), Intern

Issue Date: 27 August 2013

From Peter Emberson, Pacific Conference of Churches, Suva, Fiji

Posted 30 July 2013

Dear Members,

My name is Peter Emberson and I work at the Pacific Conference of Churches based in Suva, Fiji as the Climate Change and Resettlement Officer. For a few years now, I have been attending the UNFCCC related meetings including few recent COP meetings and have been part of the international civil society advocacy groups on climate issues that affect Small Island Developing States.

The 16th Conference of the Parties (COP16) of the United Nations Framework Convention on Climate Change (UNFCCC) launched a work programme to develop recommendations on **'Approaches to address Loss and Damage associated with Climate Change Impacts'** for consideration at the Conference of Parties (COP18). It was against the background of the imminent UNFCCC decision at COP18 to establish an "institutional arrangement such as an international mechanism" to address loss and damage (to be agreed upon at COP19, Warsaw December 2013) that participants critically examined the needs that must be addressed in the future as limits to adaptation are approached and possibly surpassed.

This agreement by State parties was premised on an understanding that the impacts of loss and damage associated with climate related stresses such as weather extremes and long term climatological shifts can impair socio-economic development and reinforce cycles of poverty across the globe. To address this issue a holistic approach, addressing loss and damage associated with both current climate variability and long term shifts in climate patterns, may help smooth development pathways and cushion the expected negative impacts.

Given the urgency of fulfilling this working mandate towards the development of a robust Loss-and-Damage institutional arrangement, the discussion needs to be accelerated and space given

for Pacific Small Island Developing States to organize and share what they would like this arrangement to look like.

To this end, it would be advantageous to begin our work by identifying the most relevant experiences, knowledge and tools available to address the issues. Specifically,

- What **experiences, practices, and potentially relevant institutional arrangements** are available from within the Pacific and internationally to better inform our L & D discussion?
- What are the **information gaps** where more investigation is needed from the Pacific to build up to the body of knowledge around a Loss and Damage mechanism?
- Are there **tools to advance this work** that can be generously offered from the Pacific region's international and national policy fora, as well as from communities of policy, science, and practice?

Following the responses from this query, our next step will be to draft a paper we can circulate to the members of the Pacific Conference of Churches at country level to help shape their position during their incountry preparatory processes towards COP 19.

Responses were received, with thanks, from

1. [Jone Vakalalabure](#), United Nations Development Programme Pacific Centre, Suva, Fiji
2. [Albert Williams](#), Department of Environmental Protection and Conservation, Port Vila, Vanuatu
3. [Floyd Robinson](#), United Nations Development Programme Multi-Country Office, Suva, Fiji
4. [Leisa Perch](#), Rio+ World Centre for Sustainable Development, Rio de Janeiro, Brazil
5. [Brian Dawson](#), Secretariat of the Pacific Community, Noumea, New Caledonia ([Response 2](#))
6. [Espen Ronneberg](#), Secretariat of the Pacific Regional Environment Programme, Apia, Samoa
7. [Michael Erlanger](#), Market Core Inc., and Björn D. Fischer, EcoKraft, Greenwich, United States of America
8. [Jutta May](#), Applied Geosciences and Technology Division, Secretariat of the Pacific Community, Suva, Fiji
9. [K. N. Vajpai](#), Climate Himalaya, India

Further contributions are welcome!

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Summary of Responses

Loss and Damage is used in the United Nations Framework Convention on Climate Change (UNFCCC) to refer to a range of damage and permanent loss associated with certain climate change impacts. These can include impacts from 'extreme weather events' such as tropical cyclone and flooding events, and 'slow onset events' such as sea level rise and ocean acidification. Under the UNFCCC, the Pacific, through the Alliance of Small Island States has been advocating for the establishment of an International Mechanism that would address these negative impacts associated with 'Loss and Damage'. Peter Emberson from the Pacific Conference of Churches, posed the query 'Loss and Damage associated with climate change impacts' to identify the most relevant experiences, knowledge and tools available to address the issues.

Loss and Damage is a fairly new concept among climate change practitioners and one with very few experiences; however members have shared on what has been done so far. From the [Caribbean](#), experiences show that additional expertise especially in the insurance and actuarial fields will have to be consulted and utilized. While implementation of such mechanism in the Pacific would likely be of a regional or sub-regional nature, the international technical and financial support will be vital for success, hence the need to ensure there is an overarching international mechanism.

A case study in [Bangladesh](#) provides an insight about 'Establishing Links between Disaster Risk Reduction and Climate Change Adaptation in the context of Loss and Damage. Since Loss and Damage is not a new concept for Disaster Risk Management (DRM) and efforts like the [Global Assessment Report](#) are successful initiatives, it could be efficient and worthwhile to collaborate closer using synergies and similarities and integrating Loss and Damage for DRM and Climate Change (CC) sooner than later but not waiting until 2015. A special issue of the [International Journal of Global Warming](#) expected to be published this month, will highlight experiences from Micronesia.

There are information gaps where more investigation is needed from the Pacific to build up to the body of knowledge around Loss and Damage. A member highlighted the need to identify the baseline against which climate change impacts can be measured. Although there are clear climate change signals emerging it is fair to say that small island states are still somewhat constrained to identifying what is a natural variability i.e. would have occurred anyway in the absence of climate change, and what is solely related to climate change.

There is also some potentially perverse outcomes e.g. if climate change caused a reduction in the frequency of cyclones in the Pacific that outweighed the potential losses for increased intensity should the emitters seek payment or compensation from those countries that experienced less cyclone damage losses than would have been the case without climate change. This situation may be rare, there are both costs and benefits for some countries and this makes the task of identifying compensation requirements difficult.

Countries such as United Arab Emirates, Saudi Arabia, Singapore, Republic of Korea and many others are currently classified as non-annex 1 countries (mostly developing countries) yet they are wealthy and do contribute to global radiative forcing levels. The key question is what roles do they play in the compensation equation and who is a developed country and who is not – the current UNFCCC divide is a very poor indicator and there is a need to redefine the 'haves' and 'have nots' categories. Another critical question highlighted is working out who pays what, there would need to be a clearly codified metric to guide decisions as the existing metrics are not up to the task.

The need to include the socio-cultural impacts of climate change was highlighted, such as the damage or loss to sites of cultural or spiritual significance to the people. There is a need to further deliberate about attaching monetary values to intangible components of the environment which are equally valuable to local communities.

A member currently working on a chapter on Poverty and Livelihoods for the next Intergovernmental Panel on Climate Change report highlights the fact that there are no significant amount of studies which can attribute loss and damage to climate change particularly on poverty or differentiate the contribution of climate change on changes in livelihoods, poverty and equality. There is limited evidence in the Small Islands Developing States and the Pacific in general.

Information gaps for CC and DRM cannot be addressed if no resources for sufficient dedicated and skilled capacities are provided to ensure sustainable data, information management, knowledge brokering, and effective communication externally and internally. Standards and references for data and information need to be harmonized and documented so information and systems can be interoperable.

The [Pacific Disaster Net](#) and the [Pacific Climate Change Portal](#) are information systems with a range of content and functionality including support to efforts on loss and damage. An initiative called the [Pacific Catastrophe Risk Assessment and Financing Initiative](#) can provide the Pacific with disaster risk modeling and assessment tools and engaging in a dialogue with the Pacific Island Countries on integrated financial solutions for the reduction of their financial vulnerability to natural disasters and climate change. [Marketcore](#) has developed and patented a financial risk assessment platform that works through a market mechanism offering financial incentives to disclose risk-detailing information.

Getting Loss and Damage to a point where actual compensation flows occur is a complex and difficult task and will take many years to put in place. More targeted analysis is needed and considerable give and take by all parties to the UNFCCC will be required. Nonetheless, one thing Loss and Damage does is highlight the need for additional adaptation resource flow to the poorest countries that contributed least to the problem. Enshrine the 'polluter pays' concept into the negotiations and raise the issue of better risk management and how insurance and risk mitigation measures can help reduce the costs of adverse impacts.

Comparative Experiences

Caribbean

Insurance Experts to be consulted on the Loss and Damage approach (from [Espen Ronneberg](#), *Secretariat of the Pacific Regional Environment Programme, Apia, Samoa*)

Additional expertise especially in the insurance and actuarial fields has to be consulted and utilized. While implementation of a Loss and Damage mechanism in the Pacific would likely be of a regional or sub-regional nature, international technical and financial support will be vital for success hence the need to ensure there is an overarching international mechanism.

India

DRR and CCA Integration help address Loss and Damage (from [Jutta May](#), *Applied Geoscience and Technology Division (SOPAC), Secretariat of the Pacific Community, Suva, Fiji*)

A policy and institutional framework that takes an integrated approach to facilitating adaptation and addressing loss and damage by combining the theory and practice of Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) will likely help reduce loss and damage. Bangladesh is taking steps to remove barriers to cooperation and coordination for effective integration of DRR and CCA within the context of both extreme and slow onset processes.

Quick Response Time Saves Lives (from [K. N. Vajpai](#), *Climate Himalaya, India*)

There has been delay by government and external agencies in responding to natural disaster emergencies as result many lives have been lost. Quick action on restoration/rehabilitation using contemporary means and technologies can change this. An action oriented disaster network that quickly acts when disaster strikes is the way forward for agencies across Asia, developing and placing long term monitoring and early warning systems need to be considered.

Related Resources

Recommended Documentation

From [Leisa Perch](#), *Rio+ World Centre for Sustainable Development, Rio de Janeiro, Brazil*

Tackling the limits to Adaptation: An International Framework to Address 'Loss and Damage' from Climate Change Impacts

Briefing paper; by Professor Doreen Stabinsky, College of the Atlantic, USA;

Available at www.careclimatechange.org/files/Doha_COP_18/tackling_the_limits_lr.pdf (PDF; Size: 2.73MB)

The aim of this report is to highlight the pressing issue of climate change loss and damage and the urgent action required of the UNFCCC and its parties to addressing it.

International Journal of Global Warming

Journal; by Prof. Dr. Ibrahim Dincer;

Preview at www.inderscience.com/jhome.php?jcode=ijgw;

International Journal of Global Warming aims to bring all disciplines together for local/global solutions to combat global warming and its consequences.

Pushing the Limits: Pioneering study shows evidence of Loss and Damage in Vulnerable Communities

Factsheet; by Warner K., van dar Geest K., Owiyo T.; United Nations University, Climate and Development Knowledge Network, and African Climate Policy Centre;

Available at www.lossanddamage.net/download/7059.pdf (PDF; Size: 654KB)

The report offer empirical evidence from the perspective of affected people in nine vulnerable countries. It reveals how climatic stressors affect communities and the consequences when they cannot adjust enough.

Rainfall Variability, Food Security and Human Mobility: An Approach for Generating Empirical Evidence

Report; by Scientific Director, Koko Warner, United Nations University, Japan; June 2012;

Available at www.ehs.unu.edu/article/read/intersections-no-10-rainfall-variability-food-security (PDF; Size: 3.27MB)

This report explains the rationale behind the research methods chosen provides guidelines for training workshops and explains the entire research process.

From [Espen Ronneberg](#), Secretariat of the Pacific Regional Environment Programme, Apia, Samoa

Pacific Regional briefing paper on the Work Programme on Loss and Damage for COP18

Briefing Paper; prepared by Cameron E., assistance from McFadzien D., Ronneberg E., Talakai M., and Siegele L; 2013;

Available at www.asiapacificadapt.net/sites/default/files/resource/attach/sprep-apan-briefing-regional-programme-loss-n-damage.pdf (PDF; Size: 0.98MB)

It provides briefly the work on Loss and Damage associated with Climate Change impacts happening in the Pacific led by the Alliance of Small Island States.

Alliance of Small Island States Proposal to the Ad hoc Working Group on Long-term Cooperative Action: Multi-Window Mechanism to Address Loss and Damage from Climate Change Impacts

Proposal; by Alliance of Small Island States; 2012;

Available at unfccc.int/files/kyoto_protocol/application/pdf/aosisinsurance061208.pdf (PDF; Size: 169 MB)

Proposal for a Multi-Window Mechanism that would consist of three inter-dependent components: an Insurance, Rehabilitation/Compensatory, and Risk Management Component.

Subsidiary Body on Implementation (SBI), Submission of Nauru on behalf of the Alliance of Small Island States

Proposal; by Government of Nauru; 28 September 2012;

Available at unfccc.int/files/documentation/submissions_from_parties/application/pdf/aosis_submission_on_loss_and_damage_submission_2_october_2012.pdf (PDF; Size: 212KB)

It contains views and information on elements to be included in the recommendations to the Conference of Parties on loss and damage.

Briefing Paper on Loss and Damage: Defining Slow Onset Events

Paper; by Stabinsky D. and Hoffmaister J.P.; August 2012;

Available at unfccc.int/files/adaptation/cancun_adaptation_framework/loss_and_damage/application/pdf/loss_and_damage_bp3_asia_and_eastern_europe_regional_expert_meeting_slow_onset_events.pdf (PDF; Size: 242KB)

It discusses slow-onset "events", more appropriately termed slow-onset processes, hazards, or impacts, as an important element in the conversation on loss and damage, distinct from extreme events.

Framework and Action Plan towards 2015 (from [Jutta May](#), Secretariat of the Pacific Community, Suva, Fiji)

Report; United Nations Office for Disaster Risk Reduction; 20 May 2013;

Available at www.pacificdisaster.net/pdnadmin/data/original/UNISDR_2013_IKM4DRR_Workshop_rprt.pdf (PDF; Size: 783 KB)

This report summarizes the key discussions, outputs and decisions generated from the first Information and Knowledge Management for Disaster Risk Reduction workshop in Geneva, Switzerland.

Hyogo Framework for Action 2001-2015 (from *K. N. Vajpai, Climate Himalaya, India*)
Action Plan; by the United Nations / International Strategy for Disaster Reduction, Geneva, Switzerland; 2005;

Available at www.unisdr.org/2005/wcdr/intergover/official-doc/L-docs/Hyogo-framework-for-action-english.pdf (PDF; Size: 411KB)

Governments under this framework are taking to the world forum achievements such as local institutional capacity building, assessment and monitoring of disaster risk with enhanced early warning systems in place.

Recommended Organizations and Programmes

From *Jone Vakalabure, United Nations Development Programme, Pacific Centre, Suva, Fiji*

United Nations Framework Convention on Climate Change, Bonn, Germany

UNFCCC Secretariat, Bonn, Germany; Tel: (49-228) 815-1000; Fax: (49-228) 815-1999; Web: unfccc.int

An international treaty to cooperatively consider limiting average global temperature increases and climate change, and coping with whatever impacts were, by then, inevitable.

UNFCC Loss and Damage Work Programme, Bonn, Germany

UNFCCC Secretariat, Bonn, Germany; Tel: (49-228) 815-1000; Fax: (49-228) 815-1999; Web: unfccc.int/adaptation/workstreams/loss_and_damage/items/6056.php

Established as part of the Cancun Adaptation Framework to consider approaches to address loss and damage associated with climate change impacts in developing countries

Cancun Adaptation Framework, Bonn, Germany

UNFCCC Secretariat, Bonn, Germany; Tel: (49-228) 815-1000; Fax: (49-228) 815-1999; Web: unfccc.int/adaptation/items/5852.php

The framework to enhance action on adaptation through international cooperation and coherent consideration of matters relating to adaptation under the Convention

Loss and Damage in Vulnerable Countries Initiative, Bonn, Germany

Loss and Damage c/o Germanwatch e.V., Kaiserstr. 201 D-53113 Bonn, GERMANY; Tel: +49 (0)228 / 60 492-29; Fax +49 (0)228 / 60 492-19; Email: kreft@germanwatch.org; Web: www.lossanddamage.net

The initiative was initiated by the Government of Bangladesh and motivated by the need to understand more about the emerging issue of Loss and Damage.

United Nations University, Tokyo

5-53-70 Jingumae, Shibuya-ku, Tokyo 150-8925, Japan; Tel: +81 3 5467 1212; Fax: +81 3 3499 2828; Web: unu.edu;

The UNU contributes through collaborative research and education to efforts to resolve the pressing global problems of human survival, development and welfare.

From *Leisa Perch, Rio+ World Centre for Sustainable Development, Rio de Janeiro, Brazil*

Germanwatch, Germany

Berlin Office, Schiffbauerdamm 15, D-10117 Berlin, Germany; Tel: +49 (0)30 - 28 88 356-0; Bonn Office, Kaiserstraße 201, D-53113 Bonn, Germany; Tel: +49 (0)228 - 60 492-0; Email: info@germanwatch.org; Web: www.germanwatch.org;

“Observing, Analysing, Acting” under this motto Germanwatch has been engaged since 1991 for global equity and the preservation of livelihoods.

Munich Climate Insurance Initiative, Bonn, Germany

Hosted at the United Nations University Institute for Environment and Human Security in Bonn, Germany; Web: www.climate-insurance.org / www.ehs.unu.edu; Contact form: www.climate-insurance.org/front_content.php?idcat=864

The Initiative was launched in April 2005 in response to the growing realization that insurance-related solutions can play a role in adaptation to climate change, as advocated in the Framework Convention and the Kyoto Protocol.

International Center for Climate Change and Development

Plot 16 Block B, Aftabuddin Ahmed Road, Bashundhara R/A, Dhaka, Bangladesh; Tel: +88-02-8401645-53, 8402065-76; Fax: +88-02-8401991; Email: info@iub.edu.bd; Web: centers.iub.edu.bd/icccad;

A global Centre of Excellence on Climate Change and Development research based at the Independent University, Bangladesh, where Climate Change has a significant impact.

Land Use, Land-Use Change and Forestry, UNFCCC – Bonn, Germany (From [Brian Dawson](#), Secretariat of the Pacific Community, Noumea, New Caledonia)

UNFCCC Secretariat, Bonn, Germany; Tel: (49-228) 815-1000; Fax: (49-228) 815-1999; Web: unfccc.int/methods/lulucf/items/1084.php;

The sector developing policies on *sinks* (any process which removes a greenhouse gas from the atmosphere) resulting from direct human-induced land use, land-use change and forestry activities.

From [Michael Erlanger](#), Marketcore Inc., USA

Marketcore Inc., USA

500 West Putnam Avenue, Suite 400, Greenwich, CT 06830, USA; Tel: 203-542-7211; Fax: 203-286-2045; Email: info@marketcore.com; or Managing Principal: merlanger@marketcore.com; Web: www.marketcore.com;

Marketcore was founded in 2000 whose work has grown out of more than 50 years of experience in financial markets and they are working on making market risks more transparent.

Eco-Kraft, USA

9250 Three Oaks Drive, Silver Spring, MD, 20901, USA; Tel: +1 (202) 470-0052 / +1 (202) 758-6060; Email: Bjorn.Fischer@eco-kraft.com (Managing Director); Web: www.eco-kraft.com;

Eco-Kraft are market makers and are passionate about developing concise solutions that foster sustainable development by empowering people, increase investments in innovative energy projects and protect the environment.

From [Jutta May](#), Secretariat of the Pacific Community, Suva, Fiji

The Pacific Catastrophe Risk Assessment and Financing Initiative

Secretariat of the Pacific Community, Suva, Fiji; Tel: +679 3381 377; Fax: +679 337 0040; Web: www.pcrafti.spc.int;

It aims to provide a disaster risk modeling and assessment tools and engage in dialogue on integrated financial solutions for the reduction of PICs financial vulnerability to natural disasters and CC.

Global Assessment Report

9-11 Rue de Varembe, 1202 Geneva, Switzerland; Tel: +41 22 917 8908/8907; Fax: +41 22 917 8964; Web: www.preventionweb.net/english/hyogo/gar/2013/en/home/index.html; Email: isdr@un.org;

It is a Disaster Risk Reduction Initiative that could be efficient and worthwhile to collaborate with, using synergies and integrating loss and damage for Disaster Risk Management and Climate Change.

National Disaster Management Authority, Government of India (from [K. N. Vajpai](#), *Climate Himalaya, India*)

NDMA Bhawan, A-1, Safdarjung, Enclave, New Delhi; Tel: +91-11-26701700; Fax: +91-11-26701729; Email: website@ndma.gov.in; Web: www.ndma.gov.in;

The National Disaster Management Authority (NDMA), headed by the Prime Minister of India, is the Apex Body for Disaster Management in India.

Recommended Communities and Networks

Alliance of Small Island States (from [Albert Williams](#), *Department of Environmental Protection and Conservation, Port Vila, Vanuatu*)

Web: www.aosis.org; Email: www.aosis.org/contact

It's a coalition of Small Island and low-lying coastal countries that share similar development challenges and concerns about the environment, especially their vulnerability to the adverse effects of global climate change.

From [Espen Ronneberg](#), *Secretariat of the Pacific Regional Environment Programme, Apia, Samoa*

Adaptation Committee, UNFCCC, Bonn, Germany

Web: unfccc.int/adaptation/groups_committees/adaptation_committee/items/6053.php;

UNFCCC Secretariat, Bonn, Germany; Tel: (49-228) 815-1000; Fax: (49-228) 815-1999;

As part of the Cancun Adaptation Framework, Parties established the Adaptation Committee to promote the implementation of enhanced action on adaptation in a coherent manner under the Convention.

Technology Expert Committee

Web: unfccc.int/ttclear/pages/tec_home.html; UNFCCC Secretariat, Bonn, Germany; Tel: (49-228) 815-1000; Fax: (49-228) 815-1999;

The Committee, together with the Climate Technology Centre and Network, is mandated to facilitate the effective implementation of the Technology Mechanism, under the guidance of the Conference of Parties.

Standing Committee on Finance

Web: unfccc.int/cooperation_and_support/financial_mechanism/standing_committee/items/6877.php;

UNFCCC Secretariat, Bonn, Germany; Tel: (49-228) 815-1000; Fax: (49-228) 815-1999;

A Standing Committee was established to assist the Conference of Parties in exercising its functions in relation to the financial mechanism of the Convention.

Subsidiary Bodies under the Framework Convention on Climate Change

Web: unfccc.int/essential_background/convention/convention_bodies/items/2629.php; UNFCCC Secretariat, Bonn, Germany; Tel: (49-228) 815-1000; Fax: (49-228) 815-1999;

The Subsidiary Bodies work together on cross-cutting issues i.e. capacity building, the vulnerability of developing countries to climate change and response measures, and the Kyoto Protocol mechanisms.

Recommended Portals and Information Bases

The Doha Climate Gateway, UNFCCC, Bonn, Germany (from *Albert Williams*)

Web: unfccc.int/key_steps/doha_climate_gateway/items/7389.php; UNFCCC Secretariat, Bonn, Germany; Tel: (49-228) 815-1000; Fax: (49-228) 815-1999;

At the 2012 UN Climate Change Conference in Doha, Qatar, governments consolidated the gains of the last three years of international climate change negotiations and opened a gateway to necessary greater ambition and action on all levels.

United Nations University Institute for Environment and Human Security, Bonn, Germany (from *Leisa Perch, Rio+ World Centre for Sustainable Development, Rio de Janeiro, Brazil*)

Web: www.ehs.unu.edu/article/read/loss-and-damage-in-vulnerable-countries-initiative-resources; UNU-EHS, UN Campus, Platz der Vereinten Nationen 1, D-53113 Bonn, Germany; Tel: + 49-228-815-0200; Fax: + 49-228-815-0299; Email: info@ehs.unu.edu;

UNU-EHS engages in research on these topics as part of the Climate and Development Knowledge Network supported "Loss and Damage in Vulnerable Countries Initiative".

From *Jutta May, Secretariat of the Pacific Community, Suva, Fiji*

Pacific Regional Loss and Damage Database for Disasters

Available soon at www.desinventar.net; United Nations Office for Disaster Risk Reduction, Asia Pacific Regional Office; or United Nations Development Programme, Regional Centre Bangkok; Contact info: www.desinventar.net/contact_us.html;

The database is still being established and is looking at potential synergies and opportunities for an integrated approach to loss and damage for Disaster Risk Management and Climate Change.

The Pacific Disaster Net

Web: www.pacificdisaster.net; Pacific Islands Applied Geoscience Commission of the Secretariat of the Pacific Community, Suva, Fiji; Tel: +679 338 1377; Fax: +679 337 0040;

The Web Portal and Database System is designed to be the largest and most comprehensive information resource for Disaster Risk Management for the Pacific Island Countries.

The Pacific Climate Change Portal

Web: www.pacificclimatechange.net; Secretariat of the Pacific Regional Environment Programme, Apia, Samoa; Tel: 685 21929; Email: sprep@sprep.org;

The portal provides a platform for institutions and governments in the Pacific region to share information readily accessed by linking to information repositories.

SERVIR GLOBAL (from *K. N. Vajpai, Climate Himalaya, India*)

Web: www.servirglobal.net; Contact: www.servirglobal.net/Global/Contact.aspx;

SERVIR brings together a variety of people from diverse backgrounds to create a special team for solving complex environmental issues and providing solutions to local decision makers and stakeholders.

Responses in Full

Jone Vakalalabure, United Nations Development Programme, Pacific Centre, Suva, Fiji

Dear Members,

I would like to share the following resources for your reference:

UNFCCC

The UNFCCC-website includes basic information on the UNFCCC Work Programme on Loss and Damage that was established by the Cancun Adaptation Framework as well as on current expert meetings and recent progress within the process. Furthermore it contains submissions of Parties, International Organizations and Civil Society.

www.unfccc.int

unfccc.int/adaptation/cancun_adaptation_framework/loss_and_damag...

Least Developed Countries Group (LDCs)

Feeling the brunt of loss and damage in the context of climate change, the group of Least Developed Countries has actively participated in the UNFCCC work programme. In the submission of the Least Developed Countries Group on Loss and Damage they express their views on the role of the Convention in loss and damage and on key concerns and needs related to loss and damage both now and in the future.

ldclimate.wordpress.com

unfccc.int/files/adaptation/application/pdf/submission_by_the_gam...

Alliance of Small Island States (AOSIS)

Climate change poses an existential threat to Small Island Developing States. Urged by the prospect of rising seas and intensified weathers, the Alliance of Small Island States tabled an Insurance Mechanism to sea-level rise as early as 1991. Later on AOSIS remained a champion on the issue and fought for the acknowledgement of loss and damage at COP 13 (Bali Action Plan), COP 16 (Cancun Adaptation Framework) and COP 17 (implementation of the work programme on loss and damage).

aosis.org/loss-damage

The Climate and Development Knowledge Network (CDKN)

The Climate and Development Knowledge Network (CDKN) supports decision-makers in designing and delivering climate compatible development. CDKN dedicated a whole section on its website to the theme of loss and damage providing different reports on the topic.

cdkn.org/themes/loss-and-damage-2/?loclang=en_gb

Other organizations that have also provided some studies and work around Loss and Damage could be found on this site www.lossanddamage.net/unfccc-work-programme

Albert Williams, Department of Environmental Protection and Conservation, Port Vila, Vanuatu

Dear All,

The issue of Loss and Damage is one that we Pacific Islands fully support within the Alliance Of Small Island States (AOSIS) and one that negotiators at the United Nations Framework Convention on Climate Change (UNFCCC) 18th Conference of Parties (COP18) in Doha, Qatar work very hard to find language that would be acceptable to our other parties and groupings within the UNFCCC process. Currently there are plans for our Loss and Damage Coordinators within AOSIS to work on drafting the modalities to give effect to the Doha Outcomes on the issue.

There is still a lot of work ahead and one that we have entrusted to our coordinators on Loss and Damage. From discussions today here in New York (where I am attending the Small Island

Developing States (SIDS) Capacity Building Training, with other AOSIS members, some from our Pacific Island Countries), I understand there will be two more meetings on the issue before the Warsaw Meeting, probably one in Fiji and the other in Italy. When I have more details of this I will communicate to all as a member of the exchange

Floyd Robinson, United Nations Development Programme, Multi-Country Office, Suva, Fiji

Dear members,

This discussion on 'Approaches to address Loss and Damage' associated with Climate Change Impacts is interesting and timely. It's an aspect of Climate Change which will perhaps receive more attention in the near future and possibly, in Fiji's case, the upcoming National Climate Change Summit organized through Fiji's Ministry of Foreign Affairs.

In terms of information gaps in the Pacific:

- Often cost benefit analysis /impact assessments are focused on economic aspects. Whilst this is important, there is a need to include the socio-cultural impacts of climate change .e.g. damage/loss to sites of cultural/spiritual significance. Some of these values are intangible. I think there is a need for further deliberation/discussion about attaching monetary values to intangible components of the environment which are equally valuable to local communities.
- How or is it possible for stakeholders to arrive at a common monetary value for natural resources? For example, various stakeholders have varying interpretations of components of the environment e.g. healthy coral reefs/fish/crabs/sea grass/forests have different values amongst resource owners, dive operators taking guest on scuba diving/snorkeling safari/hotel operators, natural resource government departments, non-governmental organizations and development agencies. This is an issue which needs to be discussed further and explored (e.g. the value a villager in one community would attach to mangroves would be different to a commercial fisherman)
- The vulnerability or limits of tolerance of communities to changing weather patterns/extreme events (arising as a result of climate change) and impacts on their livelihood and well-being. Whilst one could make some generalizations, this would vary in some cases being site specific. For example, coastal communities which often experience the brunt of strong winds and surges, would perhaps have higher levels of tolerance compared to a community (situated upstream) which is suddenly experiencing flooding of rivers.
- Financing is always an issue attracting attention. One question which could be considered is which stakeholder pays for the costs and what formula is used? For example, different sectors would have developed policies but putting plans into practice requires sufficient resource mobilization and commitment. The implementation of adaptation initiatives is cross sector (e.g. agriculture, forestry, fisheries, and lands) which would require collaboration and commitment of stakeholders involved in various sectors.

While many of changes in the environmental can be related to impacts of climate change, I sometimes feel that some of these impacts are also due to poor planning and land use management over time, especially in the water catchments. For example, increased flooding frequency and intensity of rivers are associated with climate change but a lot of it is related land

management practices (e.g. in some cases a lack of replanting after harvesting of indigenous forests and pine plantations, the way some roads/dams were constructed, farming along steep slopes without appropriate soil conservation practices).

Ensuring the commitment of stakeholders (within water catchments) is also challenging given that the range of interests (e.g. getting tenants to practice sustainable farming by avoiding planting on steep slopes and observing buffer strips, loggers to replant pine plantations or indigenous species). This usually creates a difference between stakeholders which reap the benefits and those who pay or have to bear the long term costs of environmental degradation (which stakeholder is responsible for paying & stakeholder interpretations of negative/tolerable impacts of Climate Change varies).

A combined (informal) discussion amongst some key stakeholders could generate some very interesting insights. For a start, there could be some discussion on the criteria government uses for environmental impact assessments and how natural resource departments like Fisheries conducts assessments/makes calculations in determining economic compensations for the loss of fishery resources as a result of developments (causing potential harm to resource owning communities and the *I qoliqoli* and linking this to potential impact assessments for Climate Change).

Leisa Perch, Rio+ World Centre for Sustainable Development, Rio de Janeiro, Brazil

Dear Peter et al,

Thanks for your query.

- 1) **On experiences internationally:** I can share with you the following sources of recent explorations on Loss and Damage:
www.careclimatechange.org/files/Doha_COP_18/tackling_the_limits_lr.pdf. And there is a recent review of United Nations University (UNU) which you should also take a look at. I would also suggest looking out for this special issue of the International Journal of Global Warming which will focus exclusively on Loss and Damage from Climate Change. Koko Warner (one of the guest editors) is a good contact, she currently Heads the Environmental Migration, Social Vulnerability and Adaptation Section at UNU. One of the case studies is on Micronesia which should be very relevant for your work. The collection should be published by end August 2013 www.lossanddamage.net/download/7059.pdf. I also share with you one of the early outputs of the research including findings for Micronesia.
I would also add that it would be important to note the key role that AOSIS and the Pacific played in the inclusion of Loss and Damage on the global agenda in the first place. It is therefore an important legacy for the region.
- 2) **Information Gaps:** I am working on the chapter on Poverty and Livelihoods for the next Intergovernmental Panel on Climate Change report and there are still not a significant amount of studies which can attribute loss and damage to climate change particularly on poverty or differentiate the contribution of climate change on changes in livelihoods, poverty and or equality. And there is limited evidence in Small Island Developing States and the Pacific in general.
- 3) **Tools:** Again I would take a look at the combined approach of this L and D work by UNU and others. Their research protocol may give some insights as it is also a field guide: www.ehs.unu.edu/article/read/intersections-no-10-rainfall-variability-food-security.

Project resources: www.lossanddamage.net with all background papers from all project partners (Germanwatch (lead), UNU, Munich Climate Insurance Initiative, and International Center for Climate Change and Development are partners) and case studies, conference proceedings, methods and little video clips can be found at: www.ehs.unu.edu/article/read/loss-and-damage-in-vulnerable-countries-initiative-resources.

Brian Dawson, Secretariat of the Pacific Community, Noumea, New Caledonia

Dear Members,

The recognition that greenhouse gas (ghg) emissions are causing global warming and that a significant number of people that have to date not contributed significantly to current radiative forcing levels in the atmosphere, yet are likely to suffer more damages and losses than would have occurred in the absence of climate change, is indeed an important milestone. Formal recognition of the uneven distribution of burden and that there is a need for effective support and, where applicable, compensation is indeed a principle that few could dispute. It is already to some extent enshrined in the United Nations Framework Convention on Climate Change (UNFCCC) and is consistent with international law.

Having said that a key question is what does it all mean and how actual compensation needs could be defined. This is where the going gets tough and much work remains to be done in terms of identifying a practical mechanism to facilitate compensation/financial transfers to help address some of the inequities. Below a few key areas have yet to be addressed and until they are it will be difficult to progress the issue much further.

(i) **Attribution:**

A key constraint is identifying the baseline against which climate change impacts can be measured. Although there are clear climate change signals emerging it is fair to say that we are still somewhat constrained to identifying what is natural variability (would have occurred anyway in the absence of climate change) and what is solely related to climate change. Obviously some issues, like ocean acidification, are clearly related to excess ghg emissions and sea level rise could also be put into this category. However, for many extreme weather related events (such as cyclones and floods) it is much more difficult to attribute x% to climate change (CC) and x% to natural climate influences. For example if county A suffered \$100m damage due to a cyclone what part do we attribute to CC and what would have occurred anyway. There is a range of complex scientific issue here and many are unlikely to be resolved for some time, if ever. The key issue here is how to specify what the actual impact of climate change is and warrants considerable more attention as to seek compensation for damage one has to clearly document what damages occurred and who was responsible. There is also some potentially perverse outcomes/issue. For example if CC caused a reduction in the frequency of cyclones in the Pacific that outweighed the potential losses for increased intensity should the emitters seek payment or compensation from those countries that experienced less cyclone damage losses than would have been the case without climate change, or if Kiribati received substantial increase in Tuna catches due to climate change. Although these examples would be rare there are both costs and benefits for some countries and this makes the task of identifying compensation requirements. As concentrations increase and climate change impacts manifest themselves more clearly overtime (which they will) the task of attribution will become somewhat less problematic but at this point in time the science supporting attribution remains constrained.

(ii) **Past for future emission levels:**

There is no doubt that the polluter pays principle should be a fundamental pillar of the UNFCCC yet this is still resisted in many quarters. Here the cumulative contribution to radiative forcing becomes an important consideration. Up until recent decades the onus is clearly on those countries that have contributed most radiative forcing – most of which are Annex B countries. However, the global emissions profile is changing and responsibility for future increments to radiative forcing and ocean acidification will also increasingly rest with non-Annex 1 countries. This is where the current UNFCCC process faces many challenges and while the existing split between developed countries and developing countries becomes increasingly blurred. For loss and damage to gain traction this issue needs to be addressed. For example countries such as United Arab Emirates, Saudi Arabia, Singapore, Republic of Korea and many others are currently classified as non-annex 1 countries yet they are wealthy and do contribute to global radiative forcing levels. The key question is what role do they play in the compensation equation and who is a developed country and who is not – the current UNFCCC divide is a very poor indicator here. So while the present 'us and them divide' exists making fair and equitable progress on Loss and Damage will be problematic – we need to redefine the 'haves' and 'have nots' categories. In the next few decades a significant proportion of the increment to radiative forcing will be due to emissions from non-Annex 1 countries and we need to address this matter in the loss and damage discussions – the literature has, to date, been a bit too black and white on this matter – climate change effects everyone and it is a dynamic process. Clearly capacity to pay is an essential consideration, as are emissions per capita. However, the emissions per capita metric has met with resistance both from the developed and developing world and raises a whole range of issues in terms of emissions accounting and attribution – the current geographic/national borders approach faces many issues and provides only a partial picture – trade weighted carbon accounts, bunker fuels, emission quantification issues (especially with Land Use, Land-Use Change and Forestry (LULUCF) need much greater attention to really work out who is responsible for what is an area that warrants much greater analytical focus.

(iii) **How to allocate compensation liabilities:**

Even if one were able to clearly define attribution to impacts a key question is how one does actually work out who pays what. There would need to be a clearly codified metric to guide decisions here but the existing metrics are not up to the task. Obviously a central fund under the UNFCCC would be one mechanism and each country would need to contribute resources to this fund in proportion to their contribution to radiative forcing – including both Annex B and non-annex 1 countries. This is easier said than done and faces many technical and political hurdles. Even getting fair and equitable contributions to existing UNFCCC funds is difficult and uneven and when it comes to issues of compensation and who pays what, the loss and damage debates becomes extremely complex and problematic. I would not underestimate the resistance of many countries to getting a workable mechanism in place – it will be a long and difficult slog.

(iv) **Duty of care and good governance:**

A key issue is also the responsibility of countries to ensure that they minimise exposure to hazards and adopt policies that increase their resilience to climate change - good land management, ecosystem care, land zoning, construction standards, political and economic factors that force people into areas that are highly vulnerable to climate change. A key consideration here is the existing governance regimes in developing countries that should be addressed with or without climate change – more people are vulnerable to CC today than was the case 2 to 3 decades ago and many are not related directly to climate change. Any meaningful progress on loss and damage will also require a commitment by all to better governance, disaster risk management and environmental due diligence. A question that some of the developed countries

may raise is why should they pay for loss and damage when a contributor to the damage incurred was partially due to poor governance that resulted in increased vulnerability – this is a complex area and there are no clear answers but clearly an issue that the current literature does not delve into very deeply.

It is possible to extend this list of issues and constraints (as many other factors complicate the picture) but the key point I am making is that getting loss and damage to a point where actual compensation flows occur is a complex and difficult task and will take many years to put in place (if ever). Also that much more targeted analysis is needed and considerable give and take by all parties to the UNFCCC will be required. The issues outlined above is not intended to say that loss and damage is not a worthwhile matter to pursue but merely to highlight that a wide range of issues need to be grappled with before a clearer picture emerges. At present it is something that 'sounds good if you say it fast' but in reality it is so complex and influenced by other factors that real progress on a mechanism will be slow.

Nonetheless, one thing that loss and damage does do is to highlight the need for additional adaptation resource flow to the poorest countries that have contributed least to the problem. Enshrine the polluter pays concept into the negotiations (something that has been poorly applied to date) and raise the issue of better risk management and how insurance and risk mitigation measures can help reduce the costs of adverse impacts. The outstanding matter to resolve is who actually is responsible and how should they pay and for what. This will be interesting to see how it unfolds over the coming years but countries in the Pacific need to be cautious in terms of what loss and damage actually means for them.

Espen Ronneberg, Secretariat of the Pacific Regional Environment, Apia, Samoa

Dear Members,

Pacific Regional briefing paper on the Work Programme on Loss and Damage for COP18 (*Prepared by Ewan Cameron, with assistance from Diane McFadzien, Espen Ronneberg, Malia Talakai and Linda Siegele*)

The points raised in the query by Peter are largely addressed in this paper.

Background

Loss and Damage is used in the United Nations Framework Convention on Climate Change (UNFCCC) to refer to a range of damage and permanent loss associated with certain climate change impacts. These can include impacts from "extreme weather events" (i.e. tropical cyclones, flooding event) and "slow onset events" (i.e. sea level rise, ocean acidification). Under the UNFCCC, the Pacific, through the Alliance of Small Island States (AOSIS), has been advocating for the establishment of an International Mechanism that would address these negative impacts associated with "Loss and Damage".

Elements of this suggested work programme on Loss and Damage as preferred by AOSIS are:

- I. **An Insurance Component.** This would be funded by developed countries, and would provide insurance payments for climate related damage and loss of infrastructure, homes, crops, including loss of income from tourism, all affecting a Pacific Island Countries (PICs) economic Gross Domestic Product (GDP). Loss of lives, cultures and other non-economic impacts, while extremely important considerations, have yet to be included.

- II. **A Rehabilitation/Compensatory Component.** This would provide financial assistance to PICs to deal with the unavoidable loss and damages imposed by climate change. Examples of unavoidable losses would include sea level rise eroding coastal beaches used by families and the tourism sector, freshwater sources and food crops contaminated by saline water, ocean acidification and increased ocean temperature causing bleaching of coral reefs, which is also likely to force reef fish to migrate impinging on fishermen being able to provide seafood for the family.
- III. **A Risk Management Component** would inform and support both the insurance and the rehabilitation/compensation component by promoting ideas and suggestions to calculate and reduce risk where possible. An example of this is planning the best location and design for a building that could avoid immense damage from a tropical cyclone.

As such it would be very closely linked to various stages of the other two components, for example risk management measures could be a pre-requisite for eligibility to participate in the insurance mechanism. The Risk Management component could also provide an estimated cost of loss from climate change impacts that are unavoidable or outside the reach of being able to adapt or mitigate, such as ocean acidification and increased ocean temperature bleaching coral reefs. An example of this could be that the reef fish that fishermen used to catch for free or would earn their livelihoods are no longer available therefore, therefore that may force fishermen to travel in a boat further to a reef not yet bleached or fish outside of the reef in the ocean.

Why do we need an International Mechanism on Loss and Damage?

The international mechanism on Loss and Damage is important to the Pacific as it establishes an international fund that helps with the immediate issues at the time of natural disasters will become more extreme and frequent with climate change, for example from cyclones, flooding, and drought. It will also financially help PICs with the long-term 'slow onset events'.

Examples of 'slow onset events' include:

- sea-level rise;
- loss of coastal land and homes from the rising sea level;
- increased ocean temperatures causing bleaching of our coral reefs lessening numbers of reef fish;
- increased land temperature, causing drier soils preventing farmers being able to grow certain food crops

What currently exists for the Pacific, to help us to cope with the impacts of climate change?

- Adaptation funding is currently limited. At the same time, we know that climate impacts are rising and therefore adaptation costs will only get higher. It is important that we put in place a mechanism to ensure that our own economies are not over burdened by increasing costs of adapting to the impacts of climate change.
- Limited insurance coverage exists for climate related events. Many Pacific no longer have any insurance coverage available for cyclones or other extreme events. Small economies with relatively high risk of extreme events are unattractive markets for private sector insurance companies. As climate change impacts rise, and risks increase, it is going to be even more important that risk sharing mechanisms are put in place to assist Pacific economies affected by climate change.

Why do we need an international mechanism, as opposed to a regional one?

Some of our partner countries have advocated that instead of an 'International Mechanism' under the United Nations Framework Convention on Climate Change (UNFCCC), a regional mechanism might be an option.

For the Pacific, due to the very limited population sizes, our economies and private sectors are not large enough to offer an adequate pool of risk sharing to make such a regional mechanism viable.

It is also important to remember that climate change is a human induced phenomenon, and under the polluter pays principle, the international community (particularly the larger polluters) have an obligation to provide assistance to those impacted by climate change.

Key asks for an outcome in Doha^[i]

For Doha to be a success it is important that all countries agree upon the establishment of an international mechanism to address loss and damage as a recommendation to the COP reinforcing the three components recommended by AOSIS to the COP and the AWG-LCA^[ii]:

- 1) An **Insurance Component** The insurance component is needed to help SIDS, LDCs and other developing countries that are particularly vulnerable to the impacts of climate change to better managing financial risks associated with increasingly frequent and severe climate-related extreme weather events^[iii];
- 2) A **Rehabilitation/Compensatory Component** to address the progressive negative impacts of climate change, such as sea level rise, increasing sea and land temperatures and ocean acidification that result in loss and damage^[iv]; and
- 3) A **Risk Management Component** to support and promote risk assessment and management tools and facilitate and inform the Insurance Component and Rehabilitation/Compensatory Component.

This component is needed to provide both technical and financial support to risk reduction efforts in connection with climate-related extreme weather events. It would also facilitate consideration of ways to reduce risk from the impacts of progressive negative impacts of climate change that results in loss and damage, including sea level rise, increasing sea temperatures, increasing air temperatures and ocean acidification^[v].

It is also important that a concrete work plan be elaborated, that sets out roles for different entities as well as a timeline with milestones, and those resources be provided to achieve the work plan. While still an issue for discussion, entities that could play a role in the elaboration of the mechanism include the Adaptation Committee, the Technology Expert Committee, the Standing Committee (on long term financing) as well as the regular subsidiary bodies under the FCCC.

Experiences from the Caribbean have also shown that additional expertise, especially in the insurance and actuarial fields, will have to be consulted and utilized. It should also be noted that while implementation of such a mechanism in the Pacific would likely be of a regional or sub-regional nature, the international technical and financial support will be vital for success, hence the need to ensure that there is an overarching international mechanism.

Slow Onset Events: are considered by the UNFCCC^[vi] as Sea Level Rise, increasing temperatures, ocean acidification, glacial retreat and related impacts, salinization, land and forest degradation, loss of biodiversity and desertification. All of these climate change impacts described as slow onset events are/will have long-term impacts on people and the countries. The most significant examples of slow onset events that affect the Pacific are sea level rise, causing coastal erosion and inundation, ocean acidification currently bleaching coral reef ecosystems in countries, salinization intruding fresh under water lens used by countries to supply communities with bathing water, and water to drink and cook with.

^[i] See Alliance of Small Island States (AOSIS), proposal on L&D to the COP 18, unfccc.int/files/documentation/submissions_from_parties/application/pdf/aosis_submission_on_loss_and_damage_submission_2_october_2012.pdf

^[ii] See Alliance of Small Island States (AOSIS), Proposal to the AWG-LCA, Multi-Window Mechanism to Address Loss and Damage from Climate Change Impacts available at unfccc.int/files/kyoto_protocol/application/pdf/aosisinsurance061208.pdf

^[iii] These include hurricanes, tropical storms, storm surge, floods and droughts. These events already result in significant loss or damage and many hazards will be intensified by climate change.

^[iv] E.g. permanent or extended loss of useful land, damage to coral reefs, damage to water tables, loss of fisheries

^[v] E.g. of these impacts are on- coastal infrastructure, shorelines, coral reefs, land degradation, food security. This component would work closely with components 1&2.

^[vi] See

unfccc.int/files/adaptation/cancun_adaptation_framework/loss_and_damage/application/pdf/loss_and_damage_bp3_asia_and_eastern_europe_regional_expert_meeting_slow_onset_events.pdf

Michael Erlanger, Marketcore Inc., and Björn D. Fischer, EcoKraft, Greenwich, USA

Dear Peter,

I am Michael Erlanger, Managing Principal of Marketcore (www.marketcore.com), a small company working on making market risks more transparent. We work primarily in the private sector, where we frequently interact with the United States insurance industry and industry regulators. I am sending a joint response to your query together with Bjorn Fischer, an environmental asset management specialist and Managing Director of EcoKraft (www.eco-kraft.com), who will shortly be working on assignment for the Government of Indonesia under a GIZ contract.

Certainly climate change is becoming one of the largest risks facing humanity, and we are gratified to see that discussions are taking place on loss and damage issues. It may be of interest to your members to know about Marketcore's work in this regard. Valuing risk for the purpose of offering insurance policies – particularly in the area of catastrophic risk caused by climate-induced disasters – is typically done by insurance companies in a non-transparent manner. Insurance companies, like typical private sector companies, are profit-maximizing, and not inclined to reveal their calculations. To promote a more transparent market, Marketcore has developed and patented a financial risk assessment platform that works through a market mechanism – offering financial incentives to disclose risk-detailing information.

If the institutional mechanism such as the one you are proposing introduced a platform providing greater transparency in risk valuation, it could produce better prices on insurance policies, clearer rationale for estimating compensation for loss and damage associated with climate change impacts, and – most importantly – improve confidence and trust between actors. If anyone would be interested in more information, feel free to contact me at merlanger@marketcore.com, or Bjorn at Bjorn.Fischer@eco-kraft.com.

Jutta May, Applied Geoscience and Technology Division (SOPAC) Secretariat of the Pacific Community (SPC), Suva, Fiji

Dear Colleagues,

Thank you for the interesting discussion and for the references.

The future Integrated Framework for Disaster Risk Management (DRM) and Climate Change (CC) on global and regional level is in preparation for 2015 to supersede the current frameworks. This provides the opportunity to discuss and collaborate on loss and damage for DRM and CC (rather than DRM or CC). On national level Joint Action Plans for DRM and CC in different countries in the region are already developed or in preparation.

1) Pacific Experiences and International Arrangements

While establishing a Pacific regional loss and damage database for disasters (available soon under www.desinventar.net) I like to emphasize the potential synergies and opportunities for an integrated approach to loss and damage for DRM and CC.

The Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI - pcrafi.spc.int) is another initiative and part of the broader agenda on disaster risk management and climate change adaptation in the Pacific region. PCRAFI aims to provide the Pacific Island Countries (PICs) with disaster risk modelling and assessment tools and engaging in a dialogue with the PICs on integrated financial solutions for the reduction of their financial vulnerability to natural disasters and to climate change.

2) Information gaps

Information gaps for both CC and DRM cannot be addressed if not resources for sufficient dedicated and skilled capacities are provided to ensure sustainable data / information management, knowledge brokering and effective communication – externally and internally. Terminology and definitions need to be reviewed and aligned as a prerequisite to cover both DRM and CC. Different efforts for this challenging task are underway on regional level with more support required.

Standards and references for data and information need to be considered, harmonized and need to be documented that information and systems can be interoperable.

The recent workshop on 'Information and Knowledge Management for DRR (IKM4DRR)' resulted in a Framework and Action plan towards 2015 which can be downloaded from www.pacificdisaster.net/pdnadmin/data/original/UNISDR_2013_IKM4DRR_Workshop_rprt.pdf or www.preventionweb.net/english/professional/networks/public/ikm4dr/ .

3) Tools

In the earlier listed sources the Bangladesh case study provides an insight about 'Establishing Links between Disaster Risk Reduction and Climate Change Adaptation in the Context of Loss and Damage' (www.lossanddamage.net/4901).

Since loss and damage information is not a new concept for DRM and efforts like the Global Assessment Report (GAR - www.preventionweb.net/english/hyogo/gar/2013/en/home/index.html) are successful initiatives it could be efficient and worthwhile to collaborate closer, using synergies and similarities and integrating loss and damage for DRM and CC sooner than later but not waiting until 2015. The Pacific Disaster Net (PDN - www.pacificdisaster.net) and the Pacific Climate Change Portal (PCCP - pacificclimatechange.net) are information systems with a range of content and functionality including support to efforts on loss and damage while reaching out to a constantly growing user base including mailing lists. Both portals are collaborating to strengthen the

interoperability towards 2015 and the integrated framework for DRM and CC with support from GIZ, SPC and SPREP.

Brian Dawson, Secretariat of the Pacific Community, Noumea, New Caledonia

Thank you. This is very useful insights and information and I am sure people will appreciate it, even if the whole concept of loss and damage under the United Nations Framework Convention on Climate Change faces many challenges. These are most constructive.

K. N. Vajpai, Climate Himalaya, India

Dear Members,

Please find below an article that shares experience on Disaster Management practice in India that seeks to change the old mindset of disaster relief to include quick planning and actions using verifiable space data and avoid delay by conducting detailed assessments in deciding any relief package. It states we need to be cautious against the current jargons such as 'green economy' and 'climate smart' development for the vulnerable Himalayas that need sustainable mountain development with tried and tested technologies and not focus on the economy alone. In the wake of recent disaster in Uttarakhand state of India, for long term relief and rehabilitation action, national and state governments, regional and [international agencies](#) need to come quickly on board and take charge of the situation. I hope this will also apply to this discussion of assessing loss and damage related to CC impact.

Too many Reports and Less Understanding

There are many agencies coming with various kinds of premature reports about the kind of disaster Uttarakhand state of India faced recently, however, ground realities are much different than what has been argued by them. Almost, all districts in Uttarakhand are affected due to the disaster that hit 16th and 17th June and impacted over 5000 villages, many thousand deaths and damaged thousands of houses and infrastructure facilities. A number of media agencies are also sensationalizing the issues and giving wrong figures about the state of affair in terms of losses and damages done due to this hydro-meteorological disaster.

Delay in Action

Even after over a month, when many responsible governments (State and National) and international agencies (UN, Bi-lateral and Multi-lateral), were in an indecisive stage, there were organizations who quickly rescued thousands of people, provided immediate relief material and also setup their long term rehabilitation camps for the education of children, employments and livelihood opportunities to the locals. There were actions like short term shelters, connecting bridges, food item supplies, energy options, health facilities and long term livelihood opportunities; those have already been chalked out by many actively involved organizations in this region. However, we observed that government and external agencies were just discussing the loss and damages due to the disaster, this led to huge death toll and calamities in the region.

From this disaster we learned that the first and foremost thing our agencies entrusted the role of emergency and disasters relief, must need to change their old mindset of disaster relief actions

that include quick planning and actions on restoration or rehabilitation actions, while using contemporary means and technologies including Information Communication Technology.

In a situation when we have readily available in hand satellite imageries, data set, digital photographs and many such information, we might not need to wait for preliminary assessment on 'disaster relief' and 'emergency' situation, to decide upon a package from an international or national agency that is associated with the loss & damage due to such climate linked disaster. In the case of Uttarakhand disasters in India, agencies had a lot of information available that could have been verified easily and relief and rescue operation could have saved thousands of lives. Which didn't happen and people died due to hunger, fatigue, health problems and mental trauma. Similar was the case with the livestock population in the region.

A updated report (23 July 2013) of NDMA- National Disaster Management Authority of government of India, reveals that out of 5526 missing people (which is far-far less than actual figures), 249 bodies were recovered, while a livestock population of over 10000 also lost during this disaster.

In a worst scenario many voluntary groups and individuals, through coordinated efforts finally ensured food and medical supplies to the stranded.

The Preparedness Scenario

The situation is that, in highly disaster sensitive regions in mountain state like Uttarakhand there are no early warning systems in place.

When we talk about Indian Himalayan Mountain region, there are regional agencies, entrusted with the role of knowledge dissemination to reduce the risks associated with natural hazards, understand the vulnerabilities and develop coping capacities on disaster and early warning systems, through community-based disaster risk reduction and response protocols. However, there seems unpreparedness in the region in context to knowledge sharing, action research and dissemination actions, while the availability of adequate infrastructure and information systems in place are addition. If SERVIR Himalaya worked here in the Indian Himalayan region, many human deaths and huge losses would have been avoided. SERVIR is a regional visualization and monitoring system that integrates earth observation information, such as satellite imagery and forecast models, together with in situ data and other knowledge for improved and timely decision-making supported by USAID with NASA.

Governments as part of the Hyogo Framework for Action (HFA) 2001-2015 will take to world forum achievements such as local institutional capacity building, assessment and monitoring of disaster risk with enhanced early warning systems in place, use of knowledge for innovation to develop resilience, reduced underlying factor and strengthened disaster preparedness for effective response. In general it is said that the countries were able to substantially reduce disaster losses by building the resilience of communities to any kind of disasters. But, the question is, how much have these country governments, signatories of HFA, emphasize quick assessment of disasters, active disaster network, knowledge dissemination and implementation of disaster risk management policies as part of each decision making processes and plans?

Transfer! Why Not?

The mountain villages are completely cut off from mainland many agencies are now suggesting about cash transfer scheme as part of relief work. Would that really work when our markets don't have basic items like food and shelter related amenities? The focus of relief and rehabilitation

should be, first connecting the villages by any means and supplying basic needs for a while. The voluntary groups working in the region have their own limitations, and for long term relief government, regional and international agencies should come together quickly to work on such aspects.

Many agencies are using many metaphors like 'climate smart', 'clean and green development', we need to be cautious that we are not really hampering the quick relief process on one hand, and not pushing too hard for big plans in the name of such development in the mountains. What we could not achieve in other less sensitive and accessible regions, we should not strive for those technologies now in the mountains itself. We must consider that our mountains are somewhat fragile and equally remote in much sense. These new mountains comparatively hold much more natural resources and green values to other areas; the need is to develop them with the idea of sustainability, rather than 'green' business centers.

The Hydropower and Other Aspects

A detailed discourse would be required about the development of hydro-power in the mountains and they include mega to small hydro projects in terms of benefits and losses. The cause for the disaster in areas like Uttarakhand (India) area was a long term process of glacial mass formation and disintegration, and the erratic rainfall from global climatic phenomena. These aspects need further research and discourse, and for this purpose international and regional agencies need to put their heads together, and come up with facts and figures to establish connections and a future coping mechanism.

There are reports talking about implementing solar and wind power projects in the disaster hit areas. In our view, they are not as simple as they seem. Many aspects have already been explored in the region, and much more efforts are required to implement such energy options here.

The Way Forward

The following are areas of action that need to be considered by agencies across Asia to reduce loss and damages due to climate linked events;

1. Detailed hazard zonation for whole Indian Himalayan region, Uttarakhand on priority,
 2. Developing a system that makes availability and accessibility of robust scientific data on various hazard related aspects,
 3. An action oriented disaster network that quickly acts when disaster strikes, on rescue and rehabilitation aspects,
 4. Very strategic and well planned capacity building efforts in different regions with the help of local organizations,
 5. Developing and placing long term monitoring and early warning systems in disaster prone areas and otherwise,
 6. Developing regional preparedness and mitigation plans,
 7. Using advanced information communication tools, ensuring last mile connectivity,
 8. Developing private sector towards livelihood and employment generation through small and medium enterprises,
 9. Mandatory provision of insurance coverage for each family living in highly sensitive Himalayan region, and subsidized it for poor families.
-

Many thanks to all who contributed to this query!

If you have further information to share on this topic, please send it to Solution Exchange for the Climate Change and Development Community in the Pacific at ccd-pc@solutionexchange-un.net with the subject heading "Re: [ccd-pc-se] QUERY: Loss and Damage associated with Climate Change Impacts. Additional Reply."

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