

INNOVATION AND GOVERNANCE IN CLIMATE CHANGE SOLUTIONS FOR SMALL ISLANDS

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Stefano Moncada

Institute for European Studies & Islands and Small States Institute
University of Malta

STRUCTURE

- The Vulnerability/Resilience Framework
- Governance and Economic Development
- Role of Governance in Islands and Small States
- Innovation and Climate Change Adaptation

VULNERABILITY/RESILIENCE FRAMEWORK

The vulnerability/resilience framework



Firstly developed by for Briguglio et al. (2006) focusing on economic development



It can be applied to the risk of being harmed by climate change

VULNERABILITY/RESILIENCE FRAMEWORK

Risk =

Risk of being harmed by Climate Change

Vulnerability

(adds to risk)

EXPOSURE:
Inherent features of a community rendering it exposed to the harm of climate change

Predispositions:

- Sea level rise and coastal erosion;
- Extreme weather level events
- Degradation of fresh groundwater resources ;
- Negative effects on human health.

- Resilience

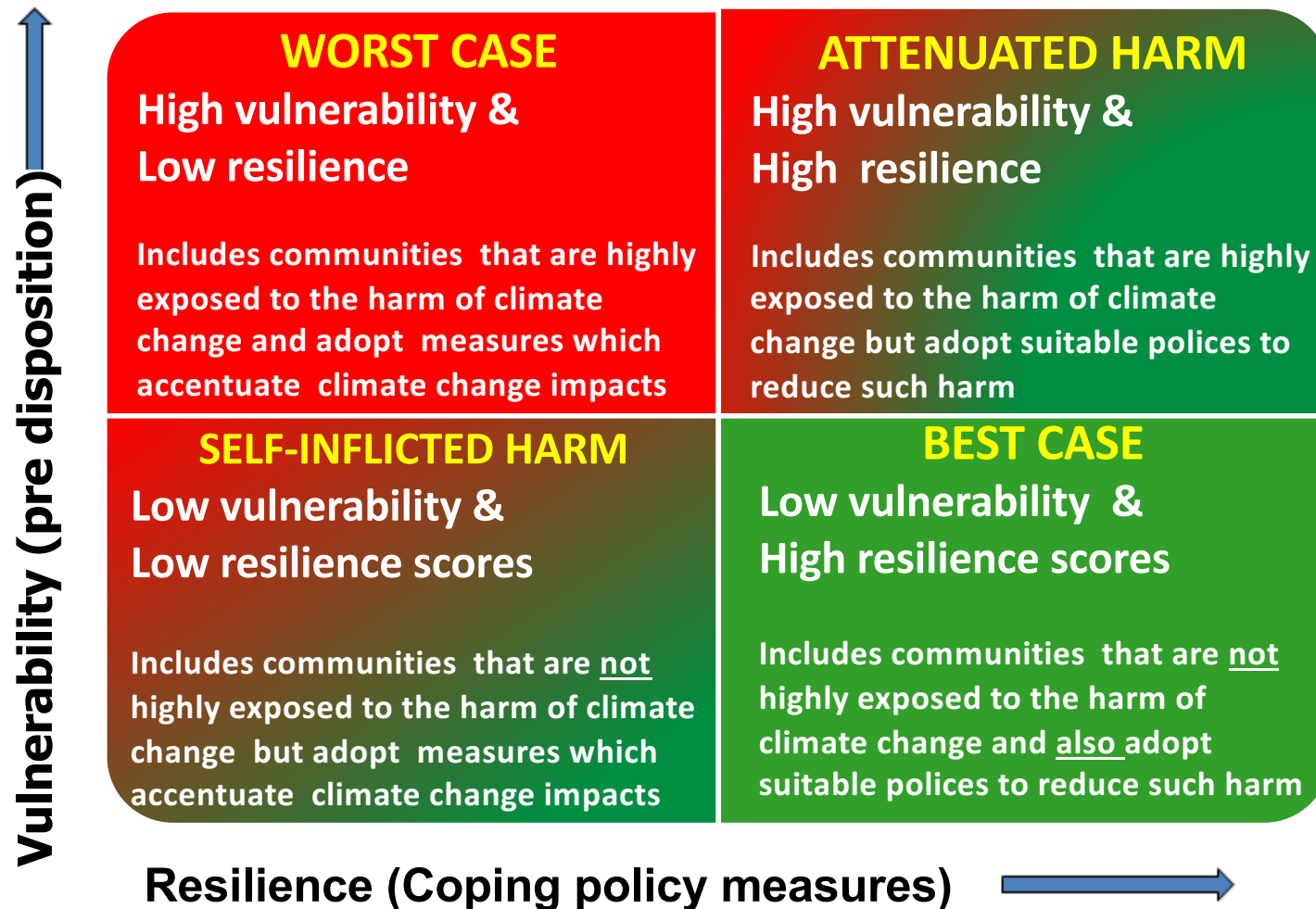
(reduces risk)

COPING ABILITY:
Policy-induced measures that enable a community to withstand the harm of climate change

Policy Responses:

- Facilitating adaptation ;
- Integration of adaptation into development plans and policies;
- Encouragement of stakeholder involvement in adaptation;
- Improving risk knowledge

VULNERABILITY/RESILIENCE FRAMEWORK



GOVERNANCE, RESILIENCE & DEVELOPMENT

Good Governance



Good Governance makes development possible (Kaufman and Kraay, 2002)

Large N–studies and case studies validate it (Grindle, 2007)

Poor governance in the Pacific key factor for poor economic performance (Reddy, 2006)

ISS, tend to perform well or very badly, depending on levels of governance!

GOVERNANCE & INNOVATION

Countries with higher rates of good governance, compared to those with lower, also tend to be faster innovators

There are gaps in applied studies that look at this causal relationship, especially quantitative and in islands

Here some examples of those (few) available studies

GOVERNANCE & INNOVATION

Iceland. Use of renewable energies to enhance the agriculture sector by artificial lighting.



www.nea.is

GOVERNANCE & INNOVATION

Mauritius. Sugar cane as a source of energy generation, as soon as the sugar preferences were dismantled



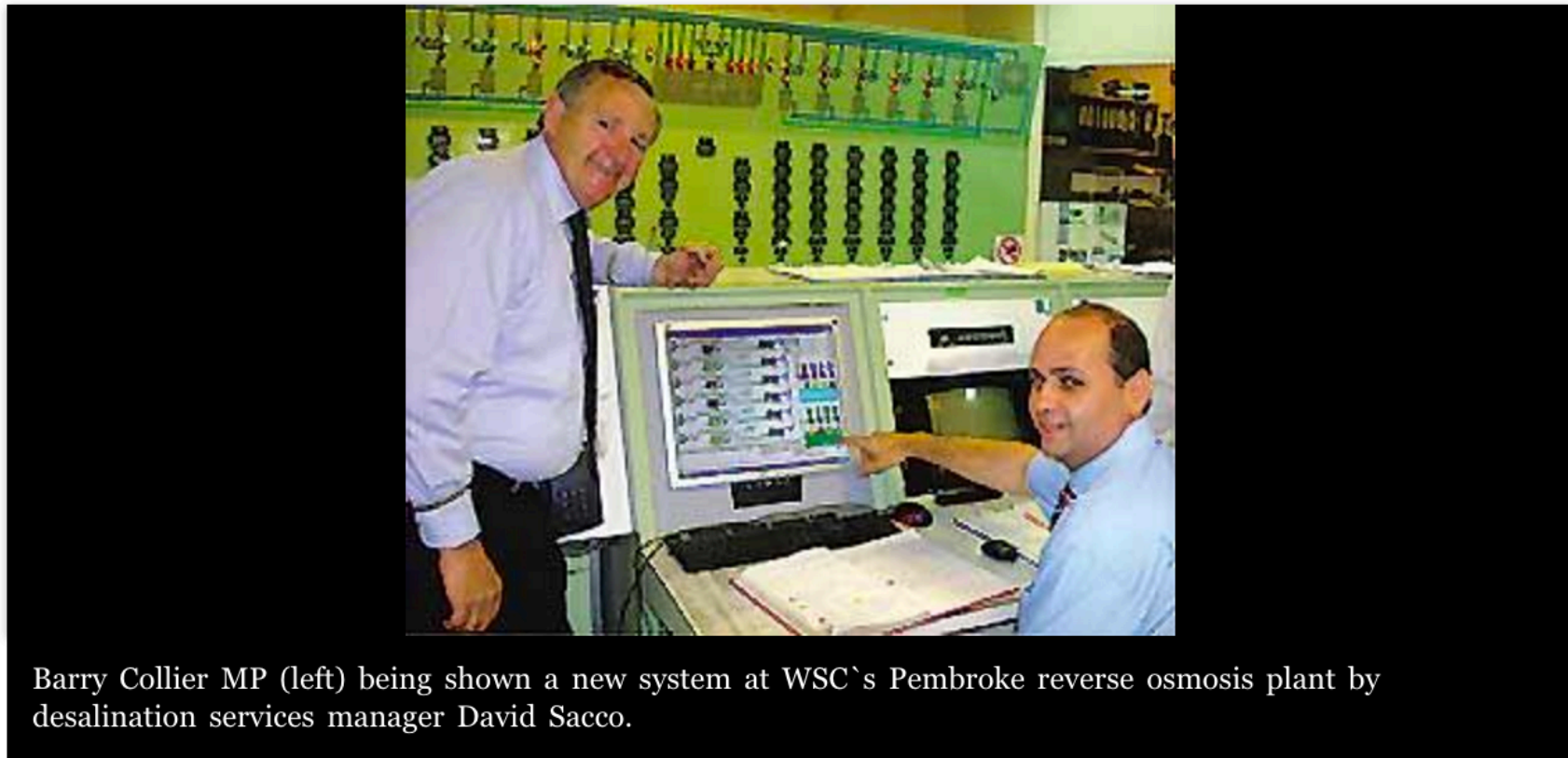
<http://africanbusinessmagazine.com/uncategorised/turn-waste-plastic/>

GOVERNANCE & INNOVATION

Malta. Among the first to develop desalination systems.

Friday, October 12, 2007, 00:00

Australia eyes Malta's desalination experience



Barry Collier MP (left) being shown a new system at WSC's Pembroke reverse osmosis plant by desalination services manager David Sacco.

www.timesofmalta.com

GOVERNANCE & INNOVATION

Singapore. Water storage & leaders in DRR activities.



@ST_FILE

POLICY CUES

Enhancing good governance can build resilience to climate change and boost innovation:

- Improved stakeholder participation, fostering a feeling of ownership of adaptation strategies
- Improved disaster risk reduction strategies
- More focused humanitarian assistance following disasters
- Optimal allocation of long-term development aid

TENSIONS

- Different conceptual understanding of vulnerability, and its measurements
- Good governance: disputed concept, enmeshed in cultural issues. Western/Traditional – Bona fide or authoritarian rule?
- Lack of data, especially when measuring vulnerability juxtaposed to development (see last SDGs dashboard).
- What Indicators? Well-being vs GDP

Table 6. Countries not included in the SDG Index and Dashboards due to insufficient data

Country	Missing Values	Country	Missing Values	Country	Missing Values
Andorra	56%	Guinea-Bissau	23%	Seychelles	24%
Antigua and Barbuda	44%	Kiribati	40%	Solomon Islands	32%
Bahamas, The	37%	Korea, Dem. Rep.	40%	Somalia	37%
Bahrain	21%	Libya	27%	South Sudan	37%
Barbados	31%	Liechtenstein	63%	St. Kitts and Nevis	50%
Belize	26%	Maldives	24%	St. Lucia	37%
Brunei Darussalam	40%	Marshall Islands	47%	St. Vincent and the Grenadines	47%
Comoros	27%	Micronesia, Fed. Sts.	45%	Syrian Arab Republic	21%
Cuba	23%	Monaco	55%	Timor-Leste	23%
Djibouti	24%	Nauru	n/a*	Tonga	37%
Dominica	45%	Palau	47%	Turkmenistan	29%
Equatorial Guinea	32%	Papua New Guinea	29%	Tuvalu	56%
Eritrea	27%	Samoa	40%	Uzbekistan	25%
Fiji	27%	San Marino	65%	Vanuatu	31%
Grenada	48%	Sao Tome and Principe	26%		

<http://sdgindex.org/data/dashboards/>

CONCLUSIONS

- Acting on the factors that improve good governance can promote economic development, and enhance climate change adaptation
- Innovations must be embedded in an environment that nurtures good governance to last, and enjoy greater benefits
- Technological based solutions VS Addressing drivers of vulnerabilities
- ODA subject to good governance?

CONTACTS

Thank you!

stefano.moncada@um.edu.mt

<https://www.um.edu.mt/profile/stefanomoncada>

Twitter: @stefanomoncada



UNIVERSITY OF MALTA
L-Università ta' Malta

INNOVATION & CLIMATE ADAPTATION

KEY TOPICAL QUESTIONS

Can Financial Innovation Drive Climate Action?

- Use of economic instruments (carbon tax, ETS, etc)
- Carbon markets for islands?

How Can We Bring Good Ideas to Scale?

- Islands are ideal ‘laboratories’
- Planned adaptation easier to implement in islands

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<http://www.nea.is/geothermal/direct-utilization/greenhouses/>

ANNEXES

ANNEXES

DEFINITIONS

IPCC defines resilience as “The capacity of social, economic, and environmental systems to cope with a hazardous event or trend or disturbance, responding or reorganizing in ways that maintain their essential function, identity, and structure, while also maintaining the capacity for adaptation, learning, and transformation.” (Agard et al. (2014).

This definition would seem to refer to both inherent resilience as well as to policy-induced resilience.

In our definition the term “resilience” is confined to policy induced measures by a community to cope with the harmful effects of climate change. Inherent resilience, in our definition, is associated with a very low level of inherent vulnerability.

ANNEXES

VULNERABILITY & RESILIENCE FRAMEWORK

Vulnerability

- Communities in Islands and Small States (ISS) are predisposed and inherently prone to being negatively affected by global warming.
 - One such factor: high ratio of coastal area to land mass

Resilience

- Strengthen ability of communities to cope with or withstand the effects of climate change, including improving their condition
 - This relates to ‘what can be done’, policy-wise,

ANNEXES

VULNERABILITY & RESILIENCE FRAMEWORK

- In brief, we are proposing that climate-change vulnerability should relate to a predisposition of a community to be harmed by climate change. By and large, this definition is in line with that adopted by the IPCC WGII (Agard et al., 2014).
- However we differ from the IPCC in our definition of resilience. In our presentation resilience is used a policy-making context, and refers to policy responses which enable (or otherwise) a community to withstand or cope with the harmful effects of climate change.

ANNEXES

GOOD GOVERNANCE & ECONOMIC DEVELOPMENT

- Institutional development contributes to growth and growth contributes to institutional development (Chong and Calderón, 2000; Levine, 1997).
- Institutional efficiency reduces poverty (Chong and Calderón, 1997).
- Weberian characteristics of public bureaucracies are strongly associated with growth (Evans and Rauch, 2000).
- Growth and investment are increased in the presence of institutions to protect property rights (Knack and Keefer, 1995).
- Government credibility contributes to investment and growth (Brunetti et al., 1997).
- Aid assists growth in contexts in which there is good economic management (Burnside and Dollar, 1998).
- Unstable political contexts are associated with lower levels of investment (Barro, 1991).
- Corruption is associated with ineffective government and low growth (Friedman et al., 1999; Mauro, 1995; World Bank, 1997).
- Fiscal decentralisation is positively correlated with good governance (Huther and Shah, 1998).

ANNEXES

EVIDENCE OF ISS & CLIMATE CHANGE

- "The journal Nature Climate Change estimates that up to 73% of island states – home to 16 million people – will face increasingly dry conditions by the middle of the century, while sea levels continue to erode coastlines. And [a United Nations report released late last year](#) found that to small island states, where expected annual losses are equivalent future disaster losses represent “an existential threat” to almost 20% of total social expenditure, compared to only 1.9 % in North America and less than 1% in Europe and Central Asia.”
- “The recurrent losses caused by national disasters and climate variability create a ‘leaking bucket’ effect that undermines growth and adds to national debt,” said Habiba Gitay, Co-Lead for the [Small Island States Resilience Initiative \(SISRI\)](#). “Jamaica’s economic growth, for example, could have approached 4% per year in the absence of tropical cyclones – instead, it experienced an average of 0.8 % over the last 40 years. Resilience is at the core of the development challenge for small island states.”

<https://www.gfdr.org/islands-resilience-small-island-states-adopt-innovative-climate-solutions>