



CATALYST

Building Resilience to Natural Hazards in the Caribbean

Current Framework and Future Challenges from a Governance Point of View



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FEEM and CMCC
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Outline

- Overview of the CATALYST project
- Small Island Developing States: challenges for development and vulnerabilities to Natural Hazards
- Caribbean SIDS: Risk profile
- Governance and DRR: a complex relation
- Governance and DRR in the Caribbean: the case of Cuba
- Lessons learnt and next steps

The CATALYST project



Project Title:

Capacity Development For
Hazard Risk Reduction And
Adaptation

Type:

Coordination and Support
Action

Duration: 2 years (Oct 2011-
Sept 2013)

Funding: FP7

Objective: Strengthening Capacity Development in DRR and Adaptation, in the context of natural hazards

Set up of a **Think Tank** comprised of regional experts to:

- Share, compile and analyse the best of existing knowledge
- Develop knowledge products useful for regional practitioners



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CATALYST Expected outcomes

Knowledge sharing through Virtual meetings, On-line discussions & Regional Workshops

Future Outcomes

- Report on best practices for the regions
 - Report on gaps in research and networks
 - Recommendations for fostering capacity development
- ➡ Practitioners
- Best practices policy briefs (region per region)
 - Special report on stakeholder advice to policy makers
 - Policy notebook
- ➡ Policy makers
- Online Module on Disaster Risk Reduction and Adaptation
- ➡ Educators

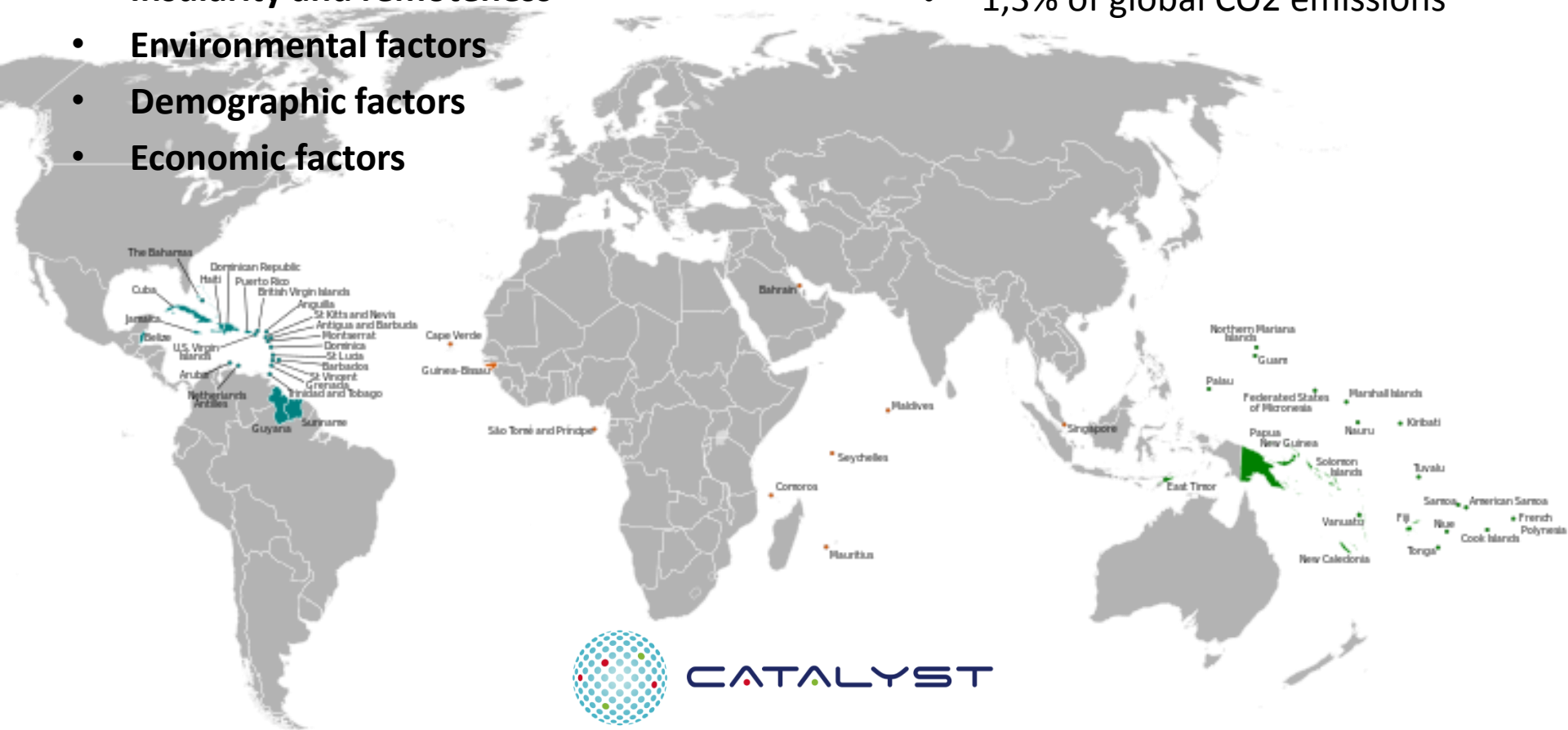
A focus on SIDS

SIDS face specific social, economic and environmental vulnerabilities:

- **Small Size**
- **Insularity and remoteness**
- **Environmental factors**
- **Demographic factors**
- **Economic factors**

52 SIDS:

- 38 UN members (out of 193)
- 5% of the world population
- 1,3% of global CO2 emissions



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SIDS in the international arena

- **UN Conference on Environment and Development** (Rio de Janeiro, 1992): SIDS are recognized as a distinct group of Developing Countries
- **Global Conference on the Sustainable Development of SIDS** (Barbados, 1994): the Barbados Programme of Action for the Sustainable Development of SIDS (BPOA) is adopted
- **22nd Special Session of the UN General Assembly (1999)**: Review of the implementation of the BPOA (BPOA +5).
- **Mauritius Strategy of Implementation** (2005): review and adoption of the Mauritius Strategies for the further implementation of the BPOA (MSI)
- **65th Session of the UN General Assembly** (2010): MSI+5 highlights very slow progress towards Sustainable Development
- **UN Conference on Sustainable Development** (Rio de Janeiro, 2012): more effort needed to assist SIDS in implementing BPOA and MSI
- **UN Climate Change Conference** (Doha, 2012): Acceptance on the creation of arrangements to address loss and damages associated with the impact of Climate change is promoted by AOSIS

Caribbean SIDS Risk Profile

- 1) Sources of Hazard in the region
- 2) Vulnerability patterns: Social and Environmental dimensions
- 3) Exposure



Figure: Disaster Risk Index (DRI) (Peduzzi et al., 2009) of CAC countries (own cartographic elaboration)



Hazards

	Earthquake (seismic activity)	Volcano	Mass movement	Storm	Flood	Drought	Extreme temperature	Wildfire	Total
Central America	61	26	21	152	178	29	19	11	497
Caribbean	10	7	5	230	110	19	n.a	4	385
Total	71	33	26	382	288	48	19	15	882

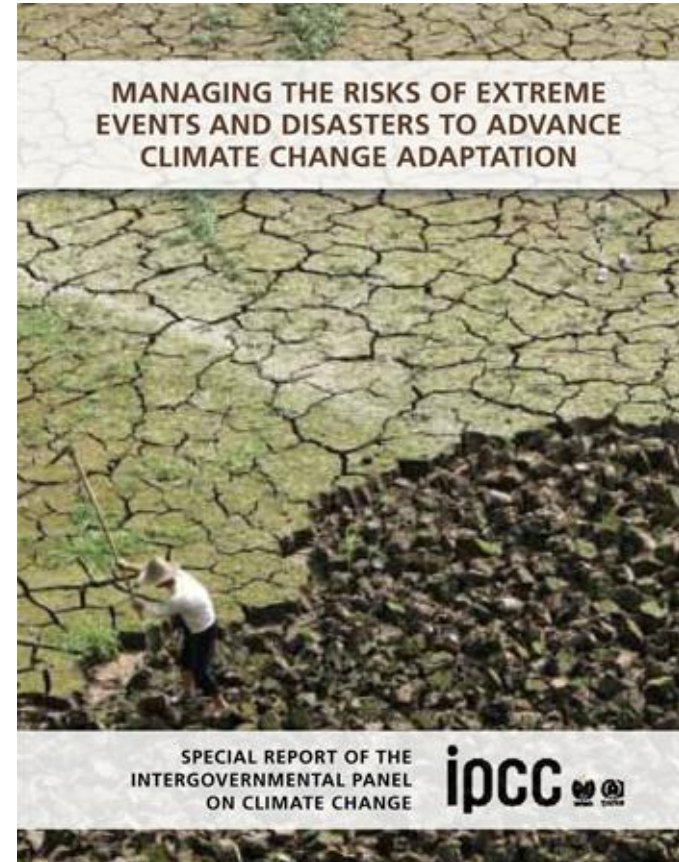
Table : Number of natural disasters by category in Central America and the Caribbean for the period 1975-2011. Source: Em-Dat.



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Future projection in extremes: the IPCC SREX and SIDS

- Short record lengths and inadequate resolution of current climate models to represent small islands states
- **Insufficient evidence** to assess observed trends and future projections in rainfall patterns
- There is **medium confidence** in the projected temperature increases across the Caribbean
- **Very likely** contribution of mean sea level rise to increased coastal high water levels
- **Likely** increase in tropical cyclone maximum wind speed.



Social Vulnerabilities

	HDI	Life expectancy at birth	Mean years of schooling	Expected years of schooling	GNI per capita
VERY HIGH HUMAN DEVELOPMENT					
Barbados	0,793	76,8	9,3	13,4	17.966
HIGH HUMAN DEVELOPMENT					
Cuba	0,776	79,1	9,9	17,5	5.416
Bahamas	0,771	75,6	8,5	12	23.029
Antigua and Barbuda	0,764	72,6	8,9	14	15.521
Trinidad and Tobago	0,76	70,1	9,2	12,3	23.439
Grenada	0,748	76	8,6	16	6.982
Saint Kitts and Nevis	0,735	73,1	8,4	12,9	11.897
Jamaica	0,727	73,1	9,6	13,8	6.487
Dominica	0,724	77,5	7,7	13,2	7.889
Saint Lucia	0,723	74,6	8,3	13,1	8.273
Saint Vincent and the Grenadines	0,717	72,3	8,6	13,2	8.013
MEDIUM HUMAN DEVELOPMENT					
Dominican Republic	0,689	73,4	7,2	11,9	8.087
LOW HUMAN DEVELOPMENT					
Haiti	0,454	62,1	4,9	7,6	1.123
Average for the Caribbean		73,6	8,4	13,1	11.086

Table : Human Development Index 2012 and its components. Source: HDR 2012.



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Specific social challenges

- Persistence of **pockets of poverty**: 17,85% of people living below the poverty line (<1,25\$ per day).
 - Min: Jamaica (0,2%)
 - Max: Haiti (61.7%)
- **Urbanization of poverty**: High proportion of urban population living in slums
 - Haiti: 70%
 - Jamaica: 60%
 - Anguilla: 40%
- **Very young population**: 24% of Caribbean population under 14 years of age
- **High Population density**: average of 217 inhab/sq. Km, with a maximum level of 627 inhab/sq. Km in Barbados
- **Gender?**

Environmental Vulnerability

Deforestation (1990-2010)

- - 11,6 % of forest cover in Haiti
- - 9,6% in Dominica

However:

- + 43,3% in Dominica Republic
- + 36% in Cuba

Deforestation of Mangrove Forests

Destruction of Coral reefs (29% at “high risk”)



According to the **Environmental vulnerability Index** (SOPAC, 2009) 17 countries out of 21 are “extremely” or “high vulnerable”.

Exposure

Country	Rank	Percent of total area at risk	Percent of population in areas at risk	Percent of GDP in areas at risk
Jamaica	3 rd	94.9	96.3	96.3
Dominican Rep.	4 th	87.2	94.7	95.6
Trinidad and Tobago	15 th	66.7	82.4	83.1
Antigua and Barbuda	18 th	53.4	80.4	80.4
Barbados	19 th	79.9	79.9	79.9
Dominica	25 th	68.3	67.0	68.3

Table : Countries at Relatively High Economic Risk from Multiple Hazards. (Based on GDP; two or more hazards). Source: The World Bank, 2005, Natural Disaster Hotspots, A Global Risk Analysis .



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DRR and the HFA

Expected outcomes

The substantial reduction of disaster losses, in lives and in the social, economic and environmental assets of communities and countries

Strategic Goals

The integration of disaster risk reduction into sustainable development policies and planning

Development and strengthening of institutions, mechanisms and capacities to build resilience to hazards

The systematic incorporation of risk reduction approaches into the implementation of emergency preparedness, response and recovery programmes

Priorities for Action

1. Ensure that DRR is a national and local priority with a strong institutional basis for implementation

2. Identify, assess and monitor disaster risks and enhance early warning

3. Use knowledge, innovation and education to build a culture of safety and resilience at all levels

4. Reduce the underlying risk factors

5. Strengthen disaster preparedness for effective response at all levels



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HFA Periodic Progress review

The Hyogo framework for Action emphasize the need to **monitor and review progress** in DRR at all levels.

National and regional actors are expected to provide a qualitative self assessment on progress using the following graduated 5-point scale.

- 1. Minor progress with few signs of forward action in plans or policy.
- 2. Some progress but without systematic policy and/ or institutional commitment.
- 3. Institutional commitment attained but achievements are neither comprehensive nor substantial.
- 4. Substantial achievement attained but with recognized limitations in capacities and resources.
- 5. Comprehensive achievement with sustained commitment and capacities at all levels.



Governance and DRR

“Governance refers to norms, traditions, and processes that impinge on the exercise of formal power and authority. It encompasses governments, the private sectors, and civil society, and a complex interaction among these segments. The government’s policies, resources, and capacities are shaped by the participation and stakeholding of civil society and the private sector in the political process. The distribution of power and authority is actually decided through reconciliation of competing priorities of different segments.”(Vatsa, 2002)

- What is the relation between governance and DRR?
- Is “good governance” a prerequisite for DRR?
- Are there any “good governance” characteristics which are more important than others in promoting effective DRR?

A complex relation

There are many ways in which good governance characteristics may have positive fallouts on building resilient communities in disaster-prone countries.

- quality of the public services provided, like health & Education (Keim, 2008)
- institutional effectiveness (Stromberg, 2006)
- civil society participation (Allen, 2001)
- control of corruption (Escaleras et al., 2007)
- Political stability (Williams, 2011)
- Political regime (democracy vs autocracy): mixed evidence

Governance and DRR in the Caribbean

1) Measuring Governance

The “Worldwide Governance Indicators” (Kauffman et al., 2010) measure 6 broad dimensions of Governance:

- Voice and Accountability
- Political Stability and Absence of Violence
- Government Effectiveness
- Regulatory Quality
- Rule of Law
- Control of Corruption

Estimates range between of -2.5 and 2.5

Statistical Analysis

2) Measuring progress towards Risk Reduction objectives

The UNISDR HFA progress Monitor provides the scores of a large number of countries in the 5 HFA priorities.

Indicators range between 1 and 5

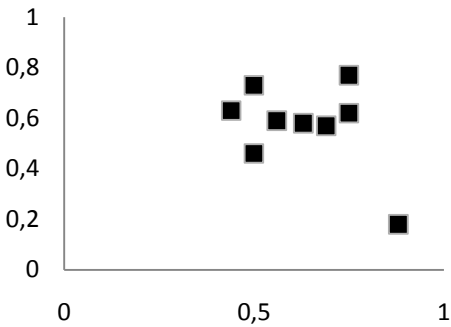
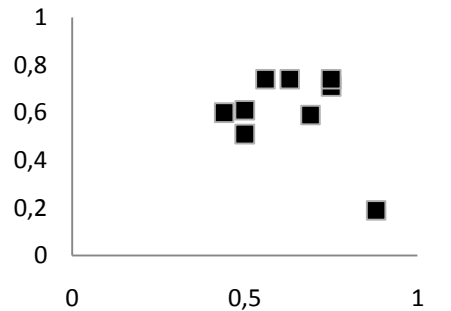
3) Expected results

Correlation between

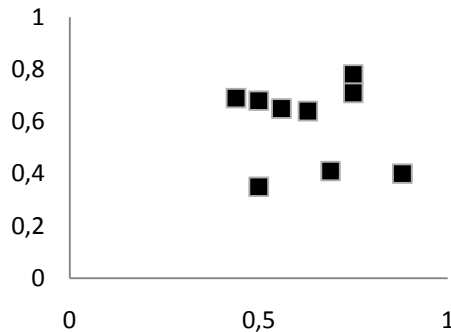
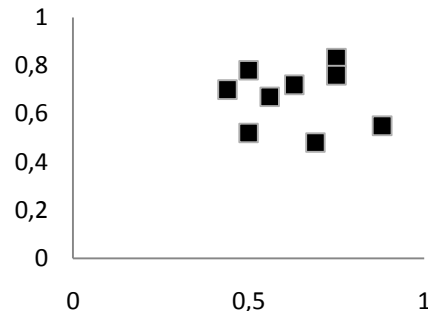
- HFA1 and regulatory quality
- HFA1 and government effectiveness
- HFA4 and rule of law
- HFA4 and control of corruption

Statistical Analysis

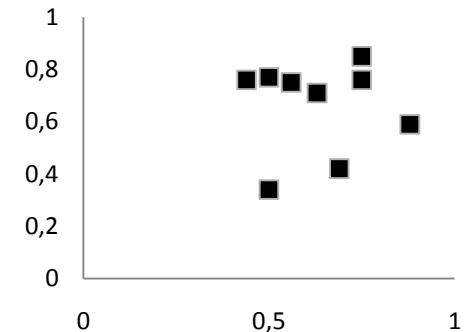
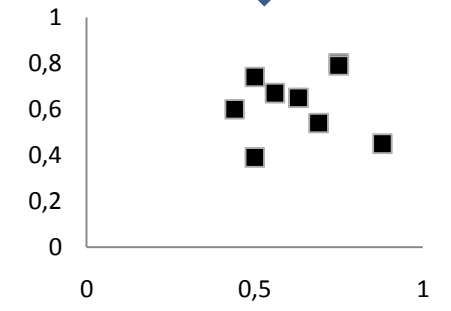
HFA Priority 1 and WGI



HFA1 -RQ

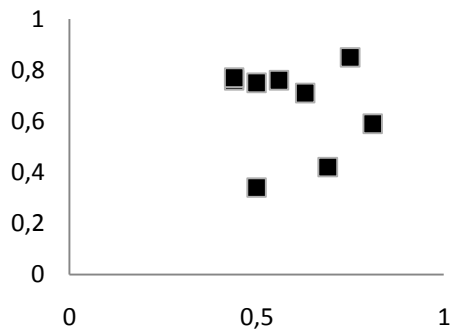
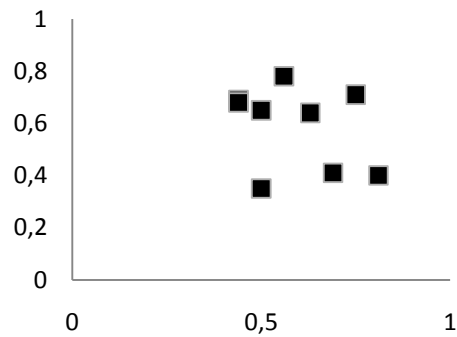
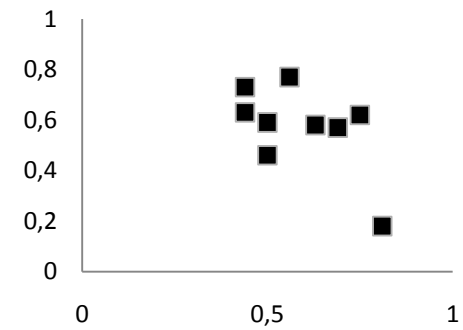
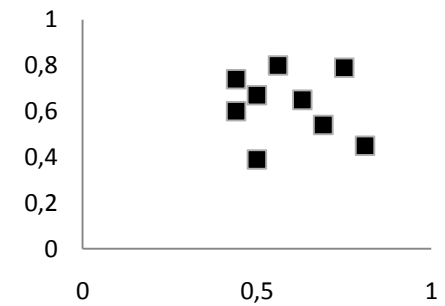
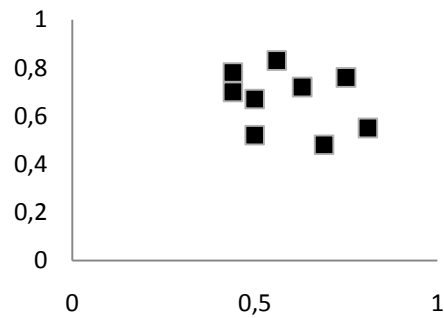
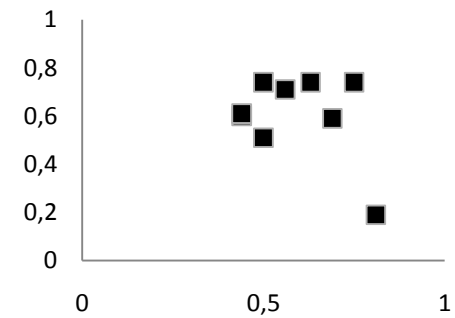


HFA1 -GE



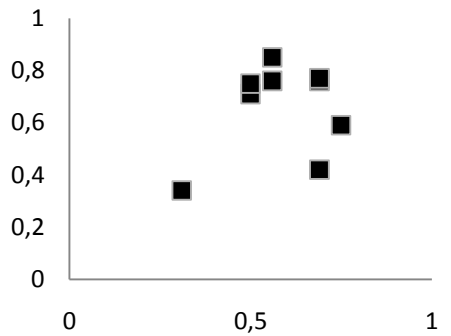
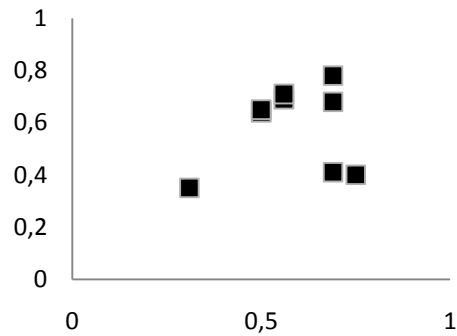
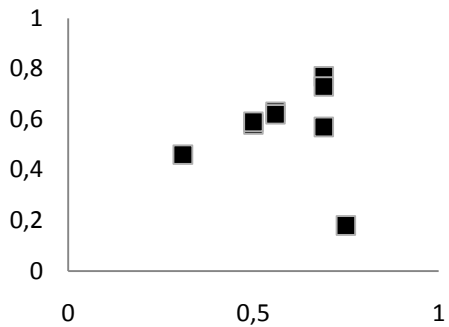
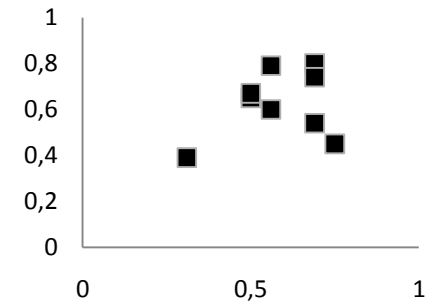
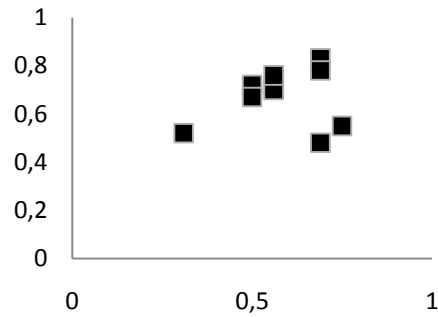
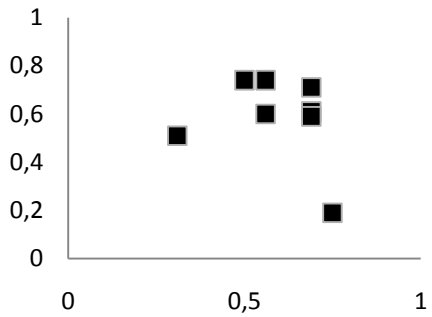
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HFA Priority 2 and WGI



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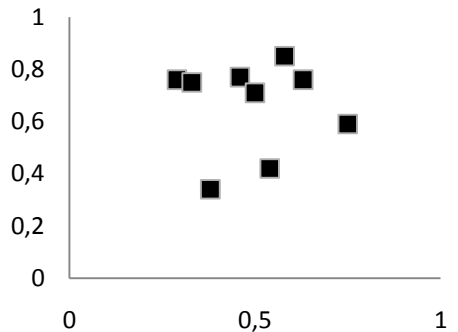
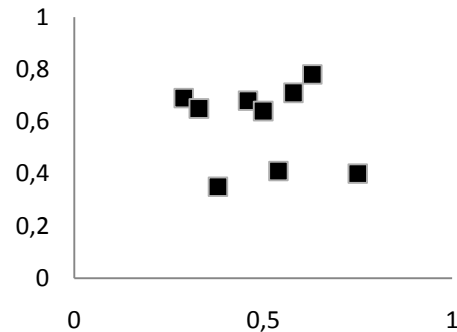
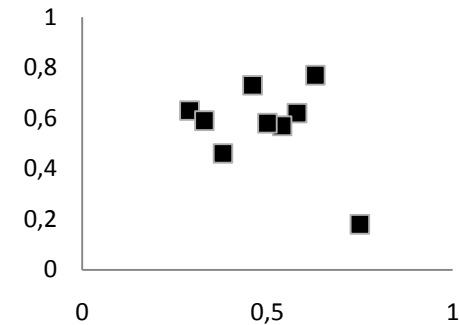
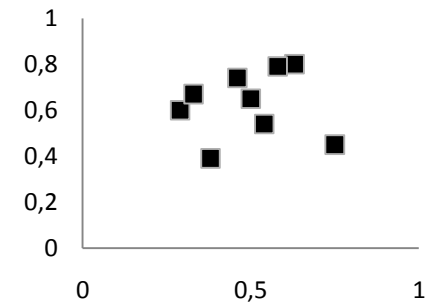
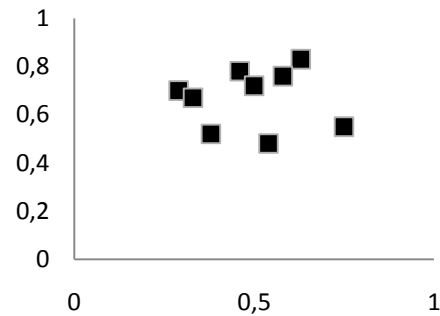
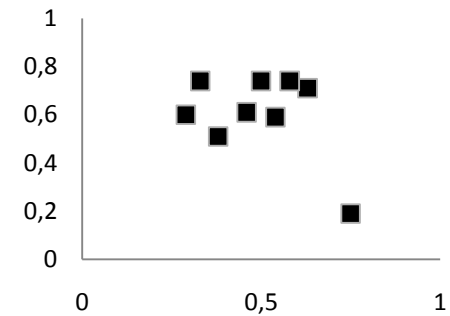
HFA Priority 3 and WGI



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HFA Priority 4 and WGI

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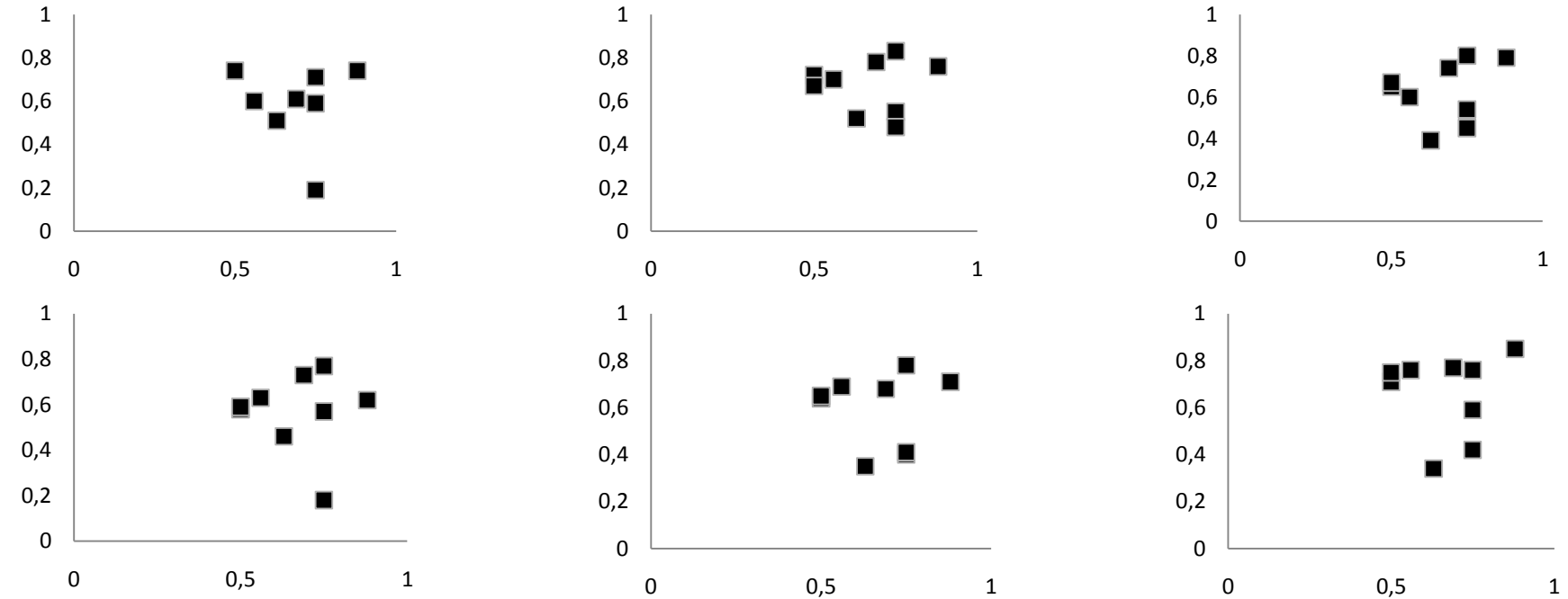
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HFA4 -RL

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HFA4 -CC



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HFA Priority 5 and WGI



Conclusions: Need to widen the sample with more data on SIDS

Qualitative Analysis

	Voice and accountability	Political Stability	Gov. Effectiveness	Regulatory Quality	Rule of Law	Control of Corruption	Average	Pr. 1	Pr. 2	Pr. 3	Pr.4	Pr. 5	Average
ANGUILLA	0,71	0,83	0,80	0,77	0,78	0,76	0,77	0,75	0,56	0,69	0,63	0,75	0,68
ANTIGUA AND BARBUDA	0,60	0,70	0,60	0,63	0,69	0,76	0,66	0,44	0,44	0,56	0,29	0,56	0,46
BARBADOS	0,74	0,76	0,79	0,62	0,71	0,85	0,75	0,75	0,75	0,56	0,58	0,88	0,70
CAYMAN ISLANDS	0,61	0,78	0,74	0,73	0,68	0,77	0,72	0,50	0,44	0,69	0,46	0,69	0,55
CUBA	0,19	0,55	0,45	0,18	0,40	0,59	0,39	0,88	0,81	0,75	0,75	0,75	0,79
DOMINICAN REPUBLIC	0,51	0,52	0,39	0,46	0,35	0,34	0,43	0,50	0,50	0,31	0,38	0,63	0,46
JAMAICA	0,59	0,48	0,54	0,57	0,41	0,42	0,50	0,69	0,69	0,69	0,54	0,75	0,67
ST. KITTS AND NEVIS	0,74	0,72	0,65	0,58	0,64	0,71	0,67	0,63	0,63	0,50	0,50	0,50	0,55
ST. LUCIA	0,74	0,67	0,67	0,59	0,65	0,75	0,68	0,56	0,50	0,50	0,33	0,50	0,48



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Cuba

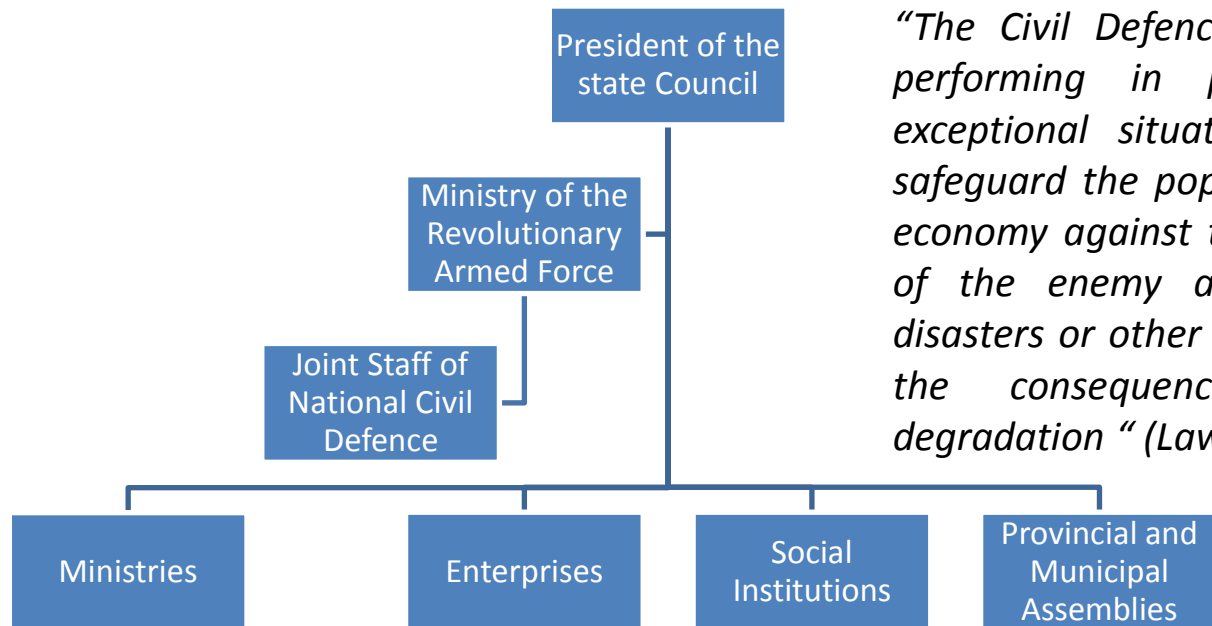
The International Federation of Red Cross and Red Crescent Societies (IFRC) highlighted an 'enormous' contrast between the scale of disasters' tolls on Cuba and its neighbours in Central America and the Caribbean (IFRC, 2002, p. 1).

- How is Cuba able to do so much with its limited resources?
- What are the main strength of the system?
- Are there elements of the Cuban experience that can be valuable for other countries?
- What “good governance” for DRR means?

The Civil Defence System

1966: establishment of the Civil Defence System in Cuba as a part of the Ministry of the Armed Forces

Law 1316 of 1976: systematization and perfection of the Civil Defence System.



"The Civil Defence is a state-run system performing in peacetime and during exceptional situations, whose aim is to safeguard the population and the national economy against the means of destruction of the enemy and in case of natural disasters or other kind of catastrophes, like the consequences of environmental degradation " (Law 75/1994).

➔ Centralized decision-making structure and decentralized implementation process



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Decentralization and community participation

Local Authorities involvement

The Provincial and municipal bodies:

- responsible for prevention, mitigation, emergency response measures
- have to elaborate DRR territorial **emergency plans** every year, containing practical procedures to be followed at all stages
- are territorial heads of the Civil Defence in their respective territories

Civil Society involvement and participation

- Community risk mapping made by representatives of the mass organization
- Annual national simulation exercise: The **Meteoro**
- Education: disaster preparedness, prevention and response are part of School and university curricula

The management of an emergency

In the case of national emergency 4 phases are identified and implemented, entailing specified instructions about what measures to take and what to expect (Decree-Law 170/1997).

Information (72 hours before)

- heads of the provincial and municipal assemblies assume their roles as local heads of the Civil Defence
- updating the lists of vulnerable members of the community are updated, emergency plans are review, evacuation procedures are checked

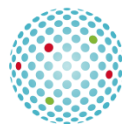
Alert (48 hours before)

- houses are secured and evacuation to safer places starts

Alarm

Recovery.

- clean up,
- restoration of services
- surveys on structural integrity of the buildings



Lessons learnt

- 1) Elevate DRR as a policy priority: create a sound institutional and legislative framework (Cuba has 3 Laws, 7 Decree-Laws, 13 Decree, 21 Ministerial Resolutions and 1 Directive)
- 2) Allocate the necessary resources for disaster risk reduction: this is the most concrete evidence of government commitment, of the **political will** in pursuing effective DRR strategies
- 3) Create a well organized and coordinated system, where roles and responsibility are clearly set
- 4) Decentralize responsibilities
- 5) Facilitate the participation of civil society, and communities in particular
- 6) **Invest on Education and information: build a “*Culture of Safety*”**
- 7) Invest in human development at large to tackle the root causes of vulnerability (education, health, eradication of poverty)

Conclusions and next steps

- 1) The case of Cuba suggest a **more complex relation** between governance and DRR
- 2) Good governance characteristic may be supportive in the implementation of effective DRR strategies. However more research is needed to understand which governance dimensions are more relevant in this sense (eg. WGI “Voice and Accountability)
- 3) Next steps: quantitative analysis to support the insights collected so far, widening our sample to the wider group of SIDS

**Thank you for your
attention!**