



**Vulnerability to climate change
and
allocation of adaptation assistance**

COP21

Side event

Le Bourget, 7 novembre 2015



Climate finance: separate issues, separate answers

- Three global issues of « climate finance »: mobilisation of resources, sharing between mitigation and adaptation, allocation among countries
- Bulk of attention on mobilisation. Progress registered today. Not clear where we stand for the other two issues
- Two (50:50) rules adopted by the Green Fund, but no similar rules for the whole 100 billions package, and allocation criteria still to be precised for the Green Fund
- Topic of this event: allocation of concessional adaptation resources
- Adaptation is indeed closely linked to development on the field, and to mitigation as well, but the three goals are conceptually distinct with corresponding sources of finance



Allocation of climate finance: specificity of adaptation

- Three principles of allocation for any public resource: equity, effectiveness, and transparency
- Are to be combined differently, depending on the aim pursued:
 - mitigation: production of a GPG
 - adaptation: essentially related to needs of specific countries who are vulnerable to climate change
- Consequently priority differs:
 - for mitigation, effectiveness is the priority
 - for adaptation, equity is the priority and there is a rationale for allocating resources according to the vulnerability of countries



Rationale of a « Vulnerability Based Allocation » for adaptation resources

- Poor countries are not responsible of the climate change they face
- « causal responsibility » (Birdsall/De Nevers) of developed countries
- Legitimacy of an allocation among countries mainly based on their vulnerability to climate change, appropriately assessed
- Need to also take into account the level of income pc, on which the country capacity to adapt partially depends



What kind of vulnerability index is needed?

- Many indices of climate vulnerability not appropriate for allocation. Needed is
- An index independent of the country will and policy: essential to disentangle two sources of vulnerability, one *exogeneous* (legitimizing support), the other one linked to policy (reflecting poor performance and resulting in a lower resilience)
- An index *not* relying on estimates of economic damages, unavoidably debatable and partial
- An index capturing the impact of climate *change*, and not of climate itself (that developed countries are not responsible)
- And likely to be regularly updated

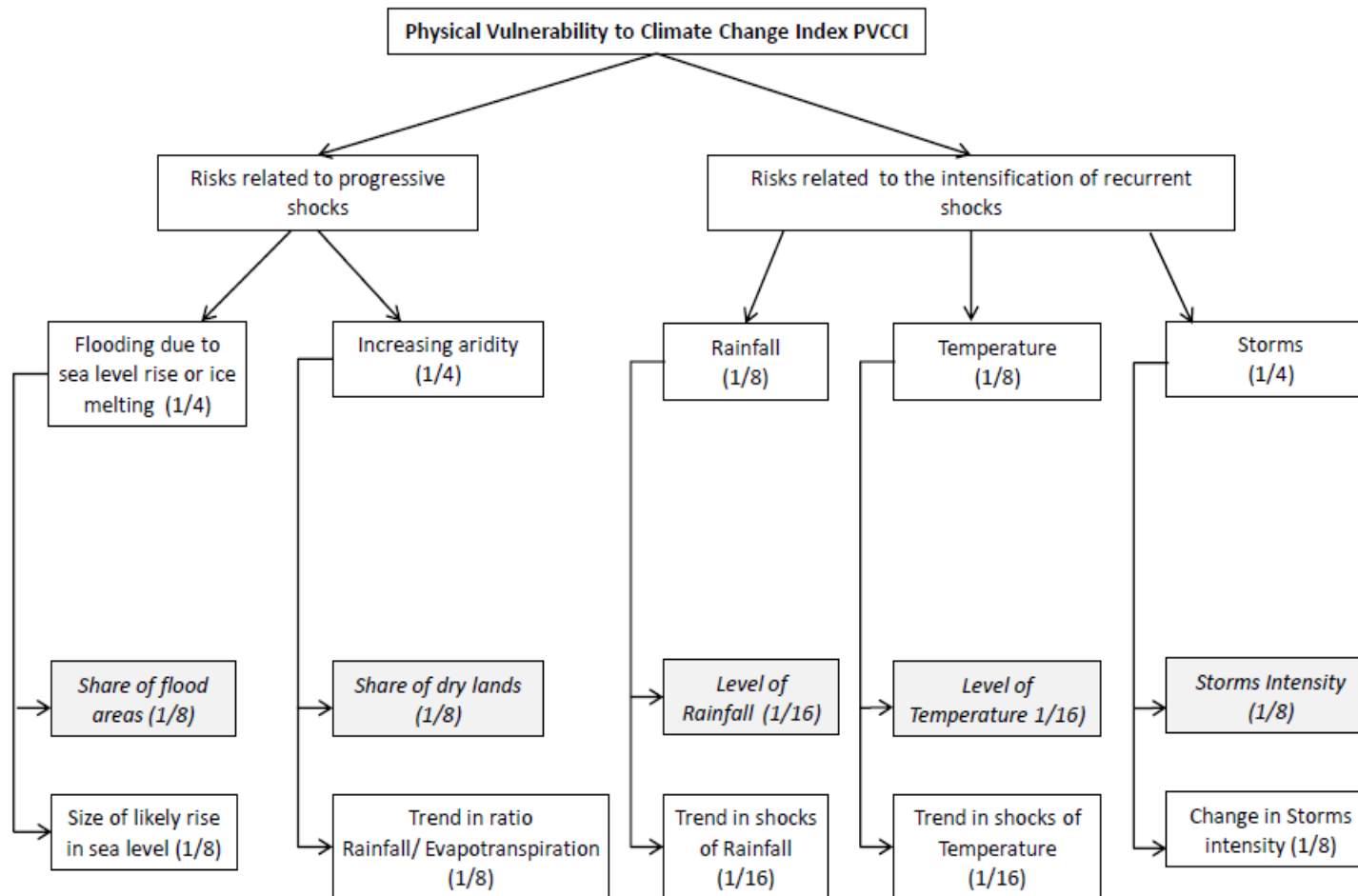


The Physical Vulnerability to Climate Change Index (PVCCI)

- Index meeting the previous requirements (exogeneity, no socio-economic factors, focus on change)
- Distinguishes risks related to *progressive shocks* (eg sea level rise, desertification) and risks related to the *intensification of recurrent shocks* (eg droughts, cyclones)
- Takes into account the *size* of the shocks and the *exposure* to these shocks (linked to the initial situation)
- Uses *quadratic average* of components to capture the specific country vulnerability
- Does not include low structural resilience, mainly due to a low level of income per capita (indeed exogenous, but taken into account separately)



Components of the Physical Vulnerability Index to Climate Change



NB. The boxes corresponding to the two last rows of the graph respectively refer to exposure components (*in italics*) and to size of the shocks components



Some remarks on tentative results

- Average of country groups:
 - compared to developing countries (45.6), LDCs have not a significantly higher level (46), but have lower structural resilience, due to their level of income pc and human capital
 - SIDS have a higher level (47.8), LLDCs a similar level (45.3)
 - high dispersion in each group, high PVVCCI in some MICs
- High value of some specific countries, for different reasons:
Haiti (47.1), Kiribati (57.3) , Vanuatu (54.6), Bhutan (50.1), Mali (53.3) and Niger (55.5)



Physical Vulnerability to Climate Change Index (PVCCI) by country groups

Groups of countries	Average	Median	St-Dev	Min	Max
Developing countries (108)	45.6	44.7	7.3	31.4	63.2
LDC (47)	46	42.2	7.2	33.2	59
Non LDC (61)	45.2	45.8	7.5	31.4	63.2
SIDS (24)	47.8	48.2	9.1	31.4	63.2
SIDS-LDC (10)	47.5	48.1	9.1	33.2	59
SIDS Non-LDC (14)	48	48.2	9.4	31.4	63.2
Landlocked (22)	45.3	42.2	6.1	37.9	55.5
Landlocked-LDC (16)	45.2	42.2	6.0	37.9	55.5
Landlocked Non-LDC (6)	45.6	44.9	6.8	38.5	53.5



Determining adaptation credits from a « Vulnerability Based Allocation »

- Formula close to that of the PBA, combining criteria multiplicatively,
- PVCCI (instead of CPR) as a major criterion
- Index of low GNIpc, as a minor one (reflecting lower structural resilience)
- Population, possibly with an exponent <1 (lower structural resilience of small countries)
- $A_i = P^{a_i} \cdot AY^{b_i} \cdot V^{c_i}$
- Possible but debatable addition of a performance criterion
- Formula determining a global adaptation credit for each country, preferably expressed in terms of grant element

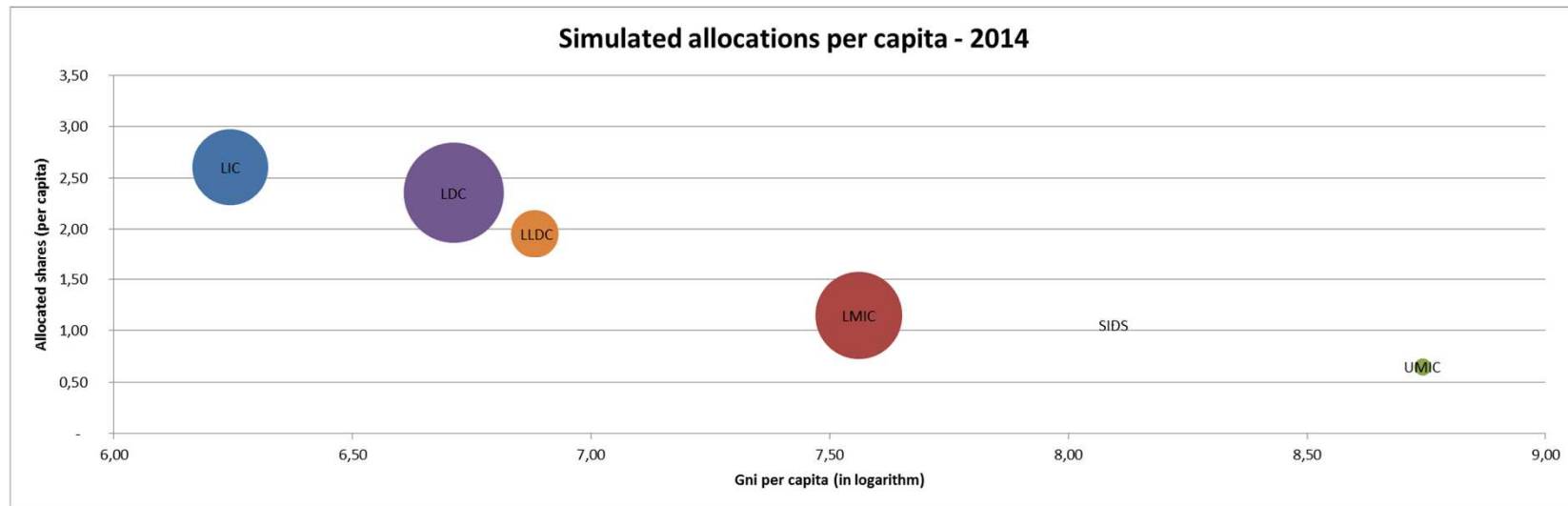


Vulnerability Based Allocation (VBA) of adaptation resources, for 106 developing countries

	Share of allocated ressources (%)	Share of total population (%)	Relative allocation per capita Weighted average (3)=(1)/(2)	Relative allocation per capita Simple average (4)	Relative allocation per capita Stand. deviation (5)	Relative allocation per capita Max (6)	Relative allocation per capita Min (7)
PFR	47,56%	20,03%	2,37	3,26	4,06	12,90	0,16
PRITI	42,83%	49,38%	0,87	1,76	2,63	12,04	0,01
PRITS	9,61%	30,59%	0,31	1,34	2,13	10,05	0,00
PMA	61,46%	30,28%	2,03	3,44	3,98	12,90	0,06
PEID	2,51%	1,77%	1,42	2,70	3,32	12,04	0,01
PVDE	26,66%	12,22%	2,18	1,95	2,61	9,29	0,09



Relative allocation per capita for adaptation and GNI per capita





Some country results

Ranks out of 106 developing countries	PVCCI (Ranks)	Relative allocation per capita (Ranks)	Share in total allocation (Ranks)
Niger	10	2	3
Kiribati	4	12	86
Haiti	51	24	32
Mali	19	7	15
Vanuatu	15	19	85
Bhutan	39	32	73



Use of adaptation credits: a global scheme?

- Once determined at the global level, adaptation credits are like conditionnal drawing rights on accredited institutions for projects or programmes of adaptation (measured by the grant element)
- The only condition is the quality of projects/programmes presented by the countries and their relevance for adaptation
- Entitled (vulnerable) countries are free to choose the institution offering the best financial and technical services
- Accredited institutions competing to offer the best ones
- Need to ensure of a global balance between the sum of funds mobilized for adaptation and the sum of adaptation credits (drawing rights)



Implications for the Green Fund of a VBA for adaptation to climate change

- Several options, more or less ambitious, depending on the role to be given to the Green Fund, ...
- Accounting and monitoring the use of adaptation credits, possibly with certification of the relevance of projects/programmes for adaptation...
- And, depending on the share of adaptation resources channelled by the GF, possible refinancing the grant element of operations financed by accredited institutions and corresponding to the use of adaptation credits...



Without a global scheme...

- Still possible for each bilateral or multilateral donor to allocate its adaptation envelope according to the physical vulnerability to climate change of developing partner countries
- In this case it may use its own PVVCI and formula, as done by MDBs which allocate their development assistance according to their own formula and CPIA
- But each vulnerable poor country would not be sure to obtain a level of adaptation finance corresponding to its global adaptation credit
- Such an insurance is essential for the implementation of a long term development and adaptation strategy