Workshop

Water and Climate Change: How to Develop an Adaptation Strategy in Transboundary Basins

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Responses to climate change by the communities residing in the Usumacinta river basin

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Preliminary remarks

- International River Basins in the worldwide context

Year	1978[1]	1999[2]	2007[3]	2008[4]
Number of international river basins	214	261	263	276

[1] Source: The 1978 Register
[2] Source: "Product of the Transboundary Freshwater Dispute Database, Department of Geosciences, Oregon State University. Additional information about the TFDD can be found at: <http://www.transboundarywaters.orst.edu>."
[3] Source: "Product of the Transboundary Freshwater Dispute Database, Department of Geosciences, Oregon State University. Additional information about the TFDD can be found at: <http://www.transboundarywaters.orst.edu>."
[4] Source: "Product of the Transboundary Freshwater Dispute Database, Department of Geosciences, Oregon State University. Additional information about the TFDD can be found at: <http://www.transboundarywaters.orst.edu>."

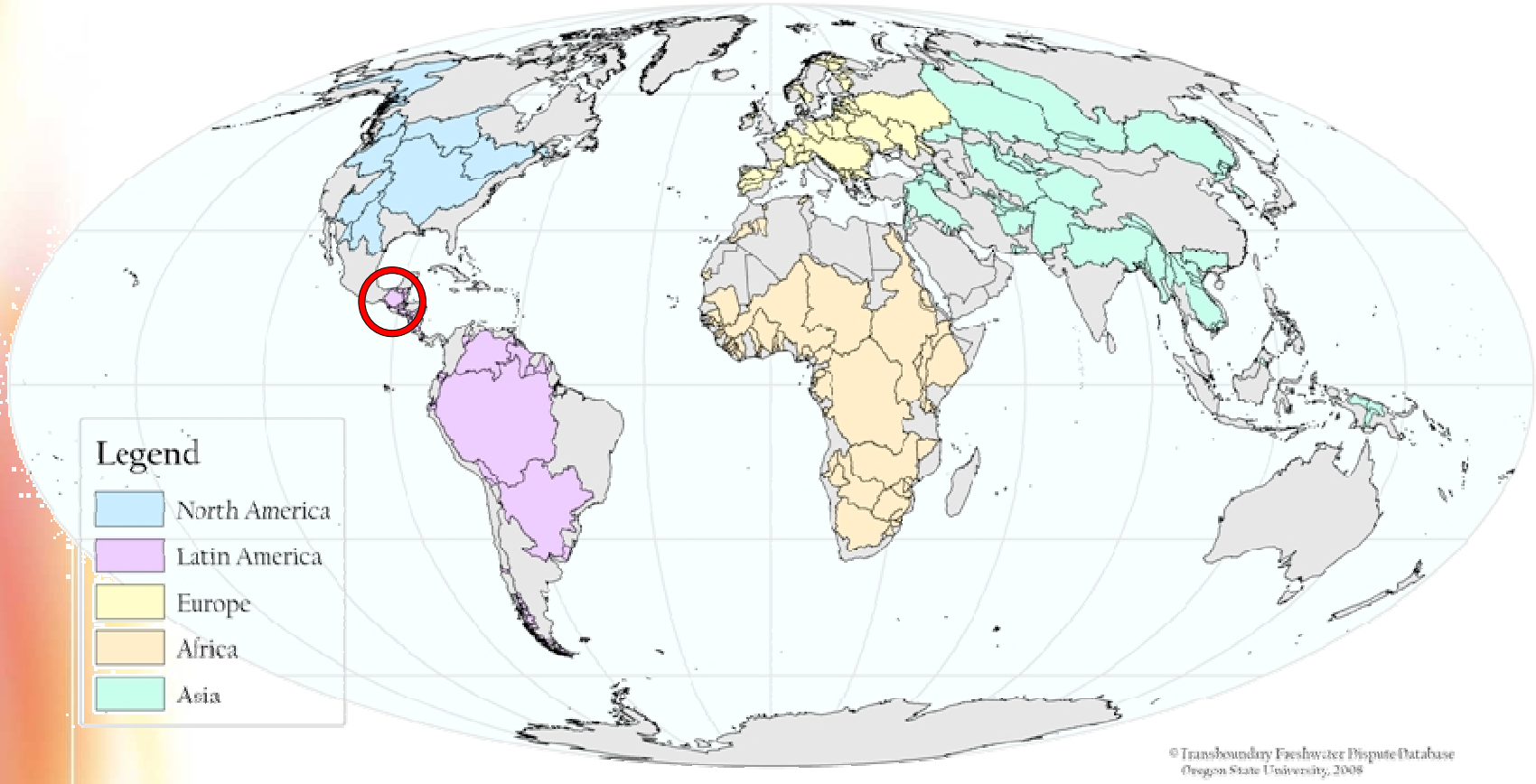
Preliminary remarks

- International River Basins in the worldwide context

Continent	Total area in km^2	Area of IRB in km^2	Percent
Africa	30 043 900	18 684 331	62.2%
Asia	44 547 800	20 439 960	45.9%
Europe	10 404 000	3 316 710	31.9%
North America	24 255 200	9 002 810	37.1%
South America	17 819 100	10 560 470	59.3%
Total (excl. Antarctica)	127 070 000	62 004 281	**48.8%**

Source: "Product of the Transboundary Freshwater Dispute Database, Department of Geosciences, Oregon State University. Additional information about the TFDD can be found at: <http://www.transboundarywaters.orst.edu>."

International River Basins



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Usumacinta River Basin

- Basic facts
  - Localization between Mexico (42%) and Guatemala (58%)
  - Length: 728,85 km (longest river in C.A.)
  - Area : 106 000 km² (6th largest river basin in L.A.)
  - 1/3 of freshwater resources in Mexico
  - 4 million inhabitants – 22 indigenous groups
  - Ecosystems with a rich biodiversity, but threatened by deforestation, fires, rapid demographic growth, etc.

Climate Change in the Usumacinta River Basin

"Las sequías en el norte y las inundaciones en el sur, los huracanes en la Península de Yucatán y, en general, los cambios acelerados del clima y su impacto actual a manera de eventos violentos, podrían estar relacionados con el cambio climático"

Mario Molina

Nobel Prize in Chemistry in 1995

November 2009

Climate Change in the Usumacinta River Basin

Climate Change - viewed through 3 perspectives:

- Scientific measures
- Visible effects
  - Extreme events: floods - scarcity
- Perceptions from local inhabitants (relevant information, especially from indigenous groups who live in the same place since decades)

Responses by local communities

- Creation of an alliance

Responses by local communities

- 100 communities both in Mexico and Guatemala formed the alliance in 2001 to:
  - Manage natural and cultural resources in a sustainable way
  - Implement projects for improving living conditions and reducing land degradation
  - Make the governments aware of the necessity to enforce the legislation and the management of the Usumacinta River Basin at the transboundary level

Actions

At the community level, tackling climate change means:

- Establishing activities and programmes of environmental education and awareness
- Establishing programmes in agroforestry to reduce the emissions of gas and deforestation
- Capacity building
- Generating new sources of employment
- Strengthening ecotourism
- Taking into account the traditional knowledge (mainly indigenous Maya) vs modern means of cultivating
  - Association of crops – extensive agriculture - reforestation

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Conclusion

- Usumacinta River Basin is concerned by Climate Change
  - floods and water scarcity severely occur since a couple of years
- In spite of important freshwater resources, there isn't any commission that manages the Usumacinta River Basin at the international level.
- Together with the lack of international legislation and policies between Mexico and Guatemala, the context is marked by high poverty and land degradation which lead the local communities to form an alliance to address responses.
  - The alliance does not formulate any strategy to climate change but tries to find solutions to the problems which are exacerbated by Climate Change (water scarcity, floods, biodiversity, agriculture, food security, etc)

Questions ?

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