



***Fighting climate change in the Pays
d'Enhaut:
an innovative approach beyond PE***



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Outline

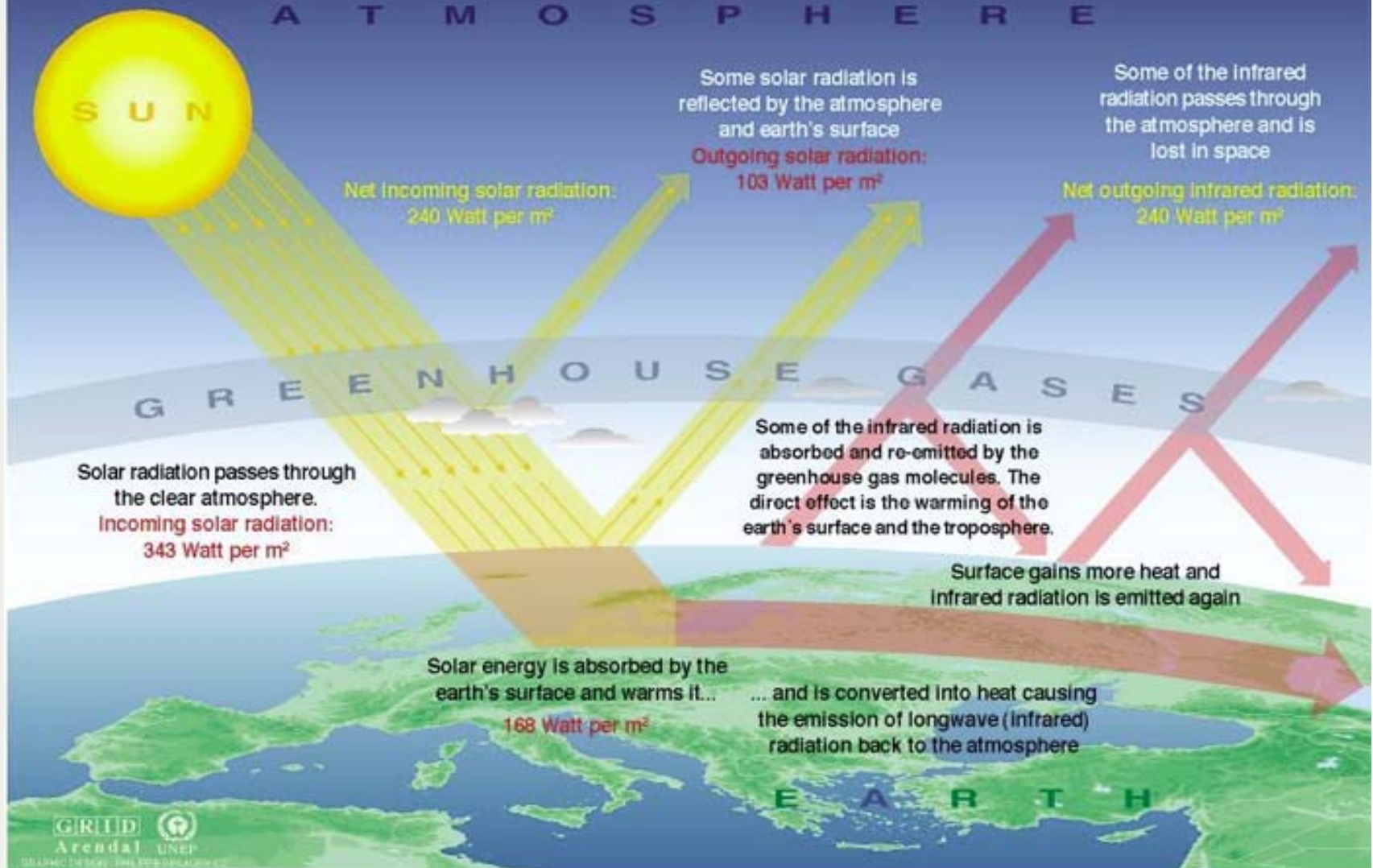
- 1. Brief reminder on climate change***
- 2. New hope in international climate change context but a missing piece in the puzzle***
- 3. PE project, an innovative approach that brings the missing piece***
- 4. Ways to expand such approach nationally and internationally***



1. Brief reminder on climate change

- ***Greenhouse Effect***
- ***CC framework convention and Kyoto Protocole***
- ***Main mechanisms in place***
- ***Climate Change Policy in Switzerland***

1a. Too much greenhouse effect?



Sources: Okanagan university college in Canada, Department of geography, University of Oxford, school of geography; United States Environmental Protection Agency (EPA), Washington; Climate change 1995, The science of climate change, contribution of working group 1 to the second assessment report of the intergovernmental panel on climate change, UNEP and WMO, Cambridge university press, 1996.



1b. The main greenhouse gases

Greenhouse gases	Chemical formula	Pre-industrial concentration	Concentration in 1994	Atmospheric lifetime (years)	Anthropogenic sources	Global warming potential (GWP) *
Carbon-dioxide	CO ₂	280 ppmv	358 ppmv	50-200	Fossil fuel combustion Land use conversion Cement production	1
Methane	CH ₄	700 ppbv	1720 ppmv	12-17	Fossil fuels Rice paddies Waste dumps Livestock	21 **
Nitrous oxide	N ₂ O	275 ppbv	312 ppmv	120-150	Fertilizer Industrial processes combustion	310
CFCs	CFC12	0	503 pptv	102	Liquid coolants. Foams	125-152
HCFCs	HCFC-22	0	105 pptv	13	Liquid coolants	125
Perfluorocarbon	CF ₄	0	110 pptv	50 000	Production of aluminium	6 500
Sulphur hexa-fluoride	SF ₆	0	72 pptv	1 000	Production of magnesium	23 900

Note : pptv= 1 part per trillion by volume; ppbv= 1 part per billion by volume, ppmv= 1 part per million by volume

* GWP for 100 year time horizon. ** Includes indirect effects of tropospheric ozone production and stratospheric water vapour production.



Source: IPCC radiative forcing report ; Climate change 1995, The science of climate change, contribution of working group 1 to the second assessment report of the intergovernmental panel on climate change, UNEP and WMO, Cambridge press university, 1996.



1c. Kyoto Protocole and its mechanisms

- 5% of GHGs emission reduction compared with the 1990 emission level for industrialized countries and economies in transition
- In the case of the European Union: 8% reduction compared with 1990
- Flexibility mechanisms (JI, CDM, Trading)
- *USA out of Kyoto but active on the emerging carbon market!*



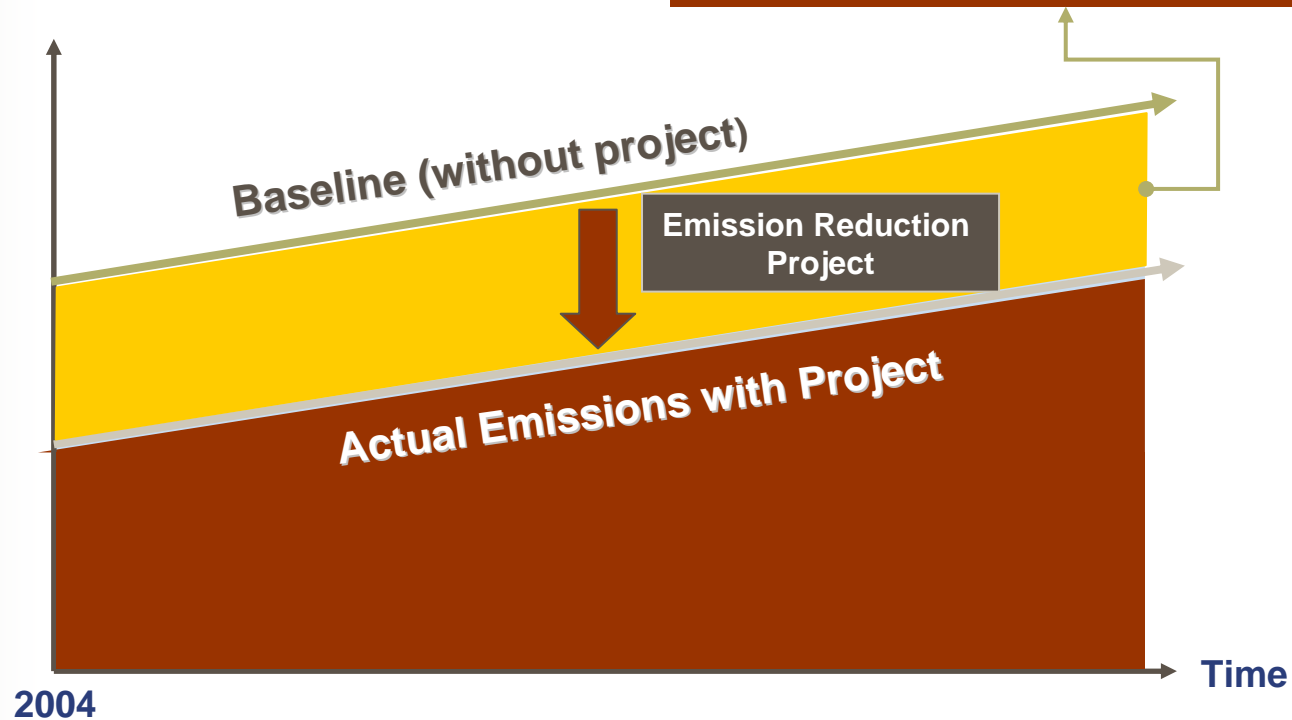
1d. Kyoto Protocole for Switzerland

- ***Ratification***: July 6, 2003
- ***Implementation***: February 16, 2005
- ***Engagements***:
 - Art. 3.1: 8 % reduction of GHG emissions
 - Art. 3.3: Afforestation and Reforestation are regarded as sinks, and deforestation as source
 - Art. 3.4: Forestry management taken into account

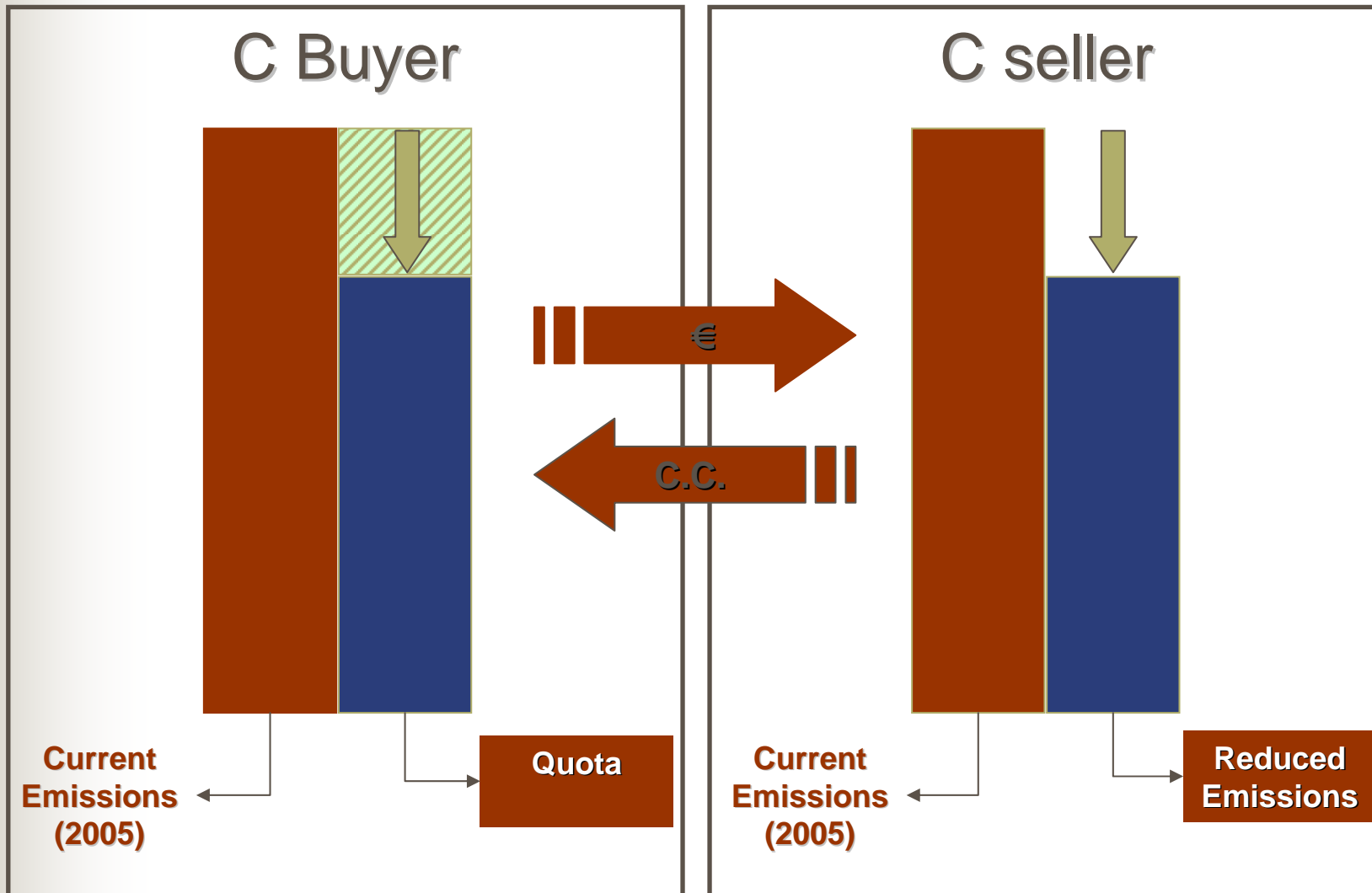
1e. Additionality Principle (ER)

CO₂e Emissions

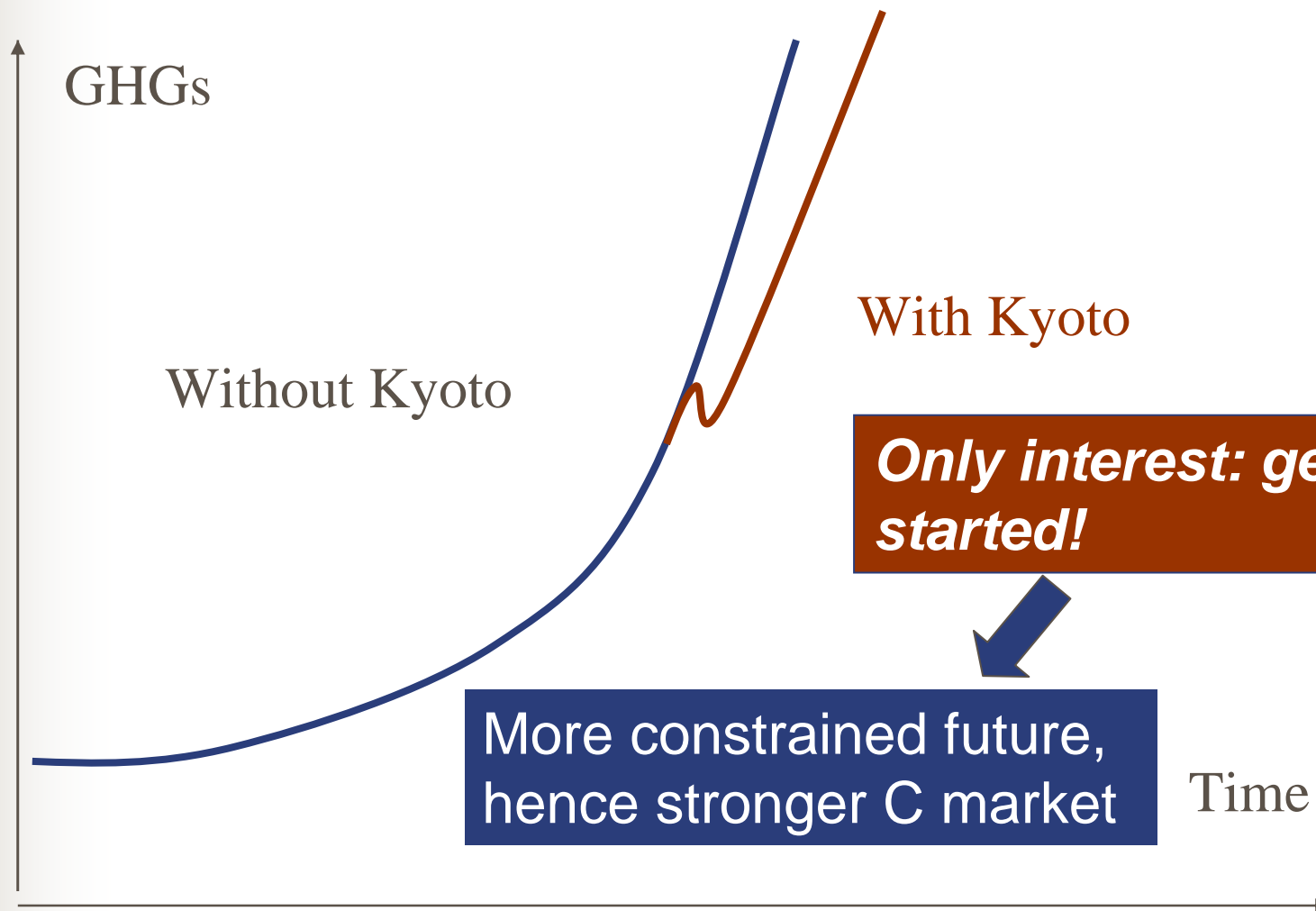
Reduced emissions = C Credits = €



1f. Flexibility Mechanisms (ER)



1g. Expected Impact of the Kyoto Protocol



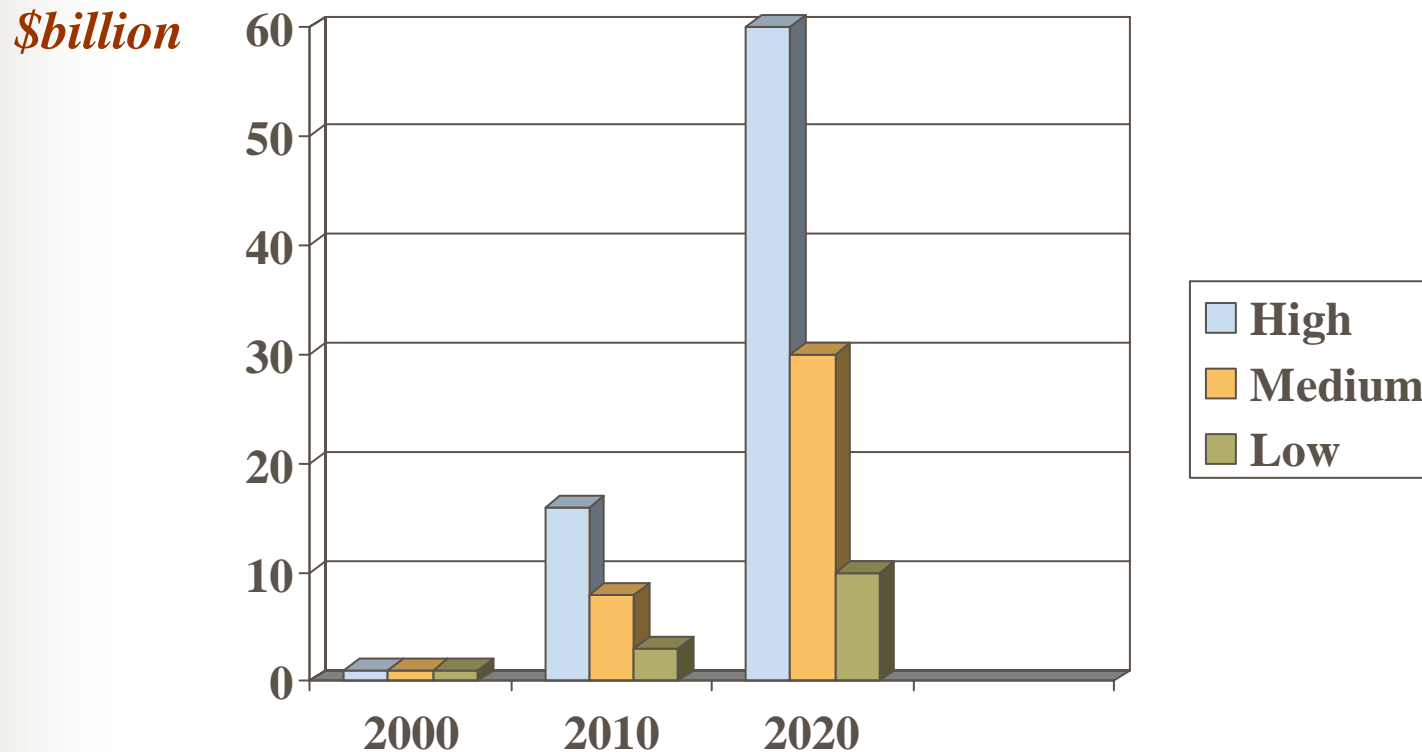


2a. New hope in international context

- *From -5% (KP) to -50% (recent G8)*
- *European leadership(-20% to -30% by 2020)*
- *Emerging carbon markets stronger than expected*
- *Evolving USA position followed by Australia and Canada*
- *Positive signals from China*



2b. Carbon Markets estimated in 1998 and 2002

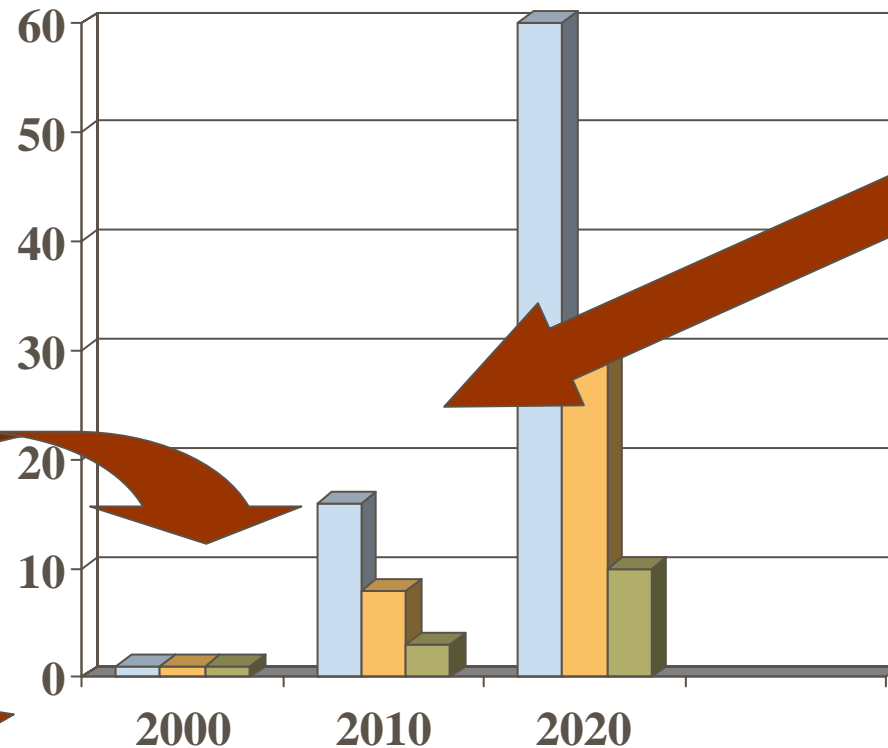


Source: World Bank Study 1998 & 2002



2c. Reviewed estimates in 2007

\$billion



\$100b
2010

\$30b
2006

Source: World Bank Study 1998 & 2002



2d. Big actors are involved

- *EU Commission and European Governments have policy and regulatory roles particularly for National Allowance Plans (NAPs)*
- *Large industrial and energy groups have to abide with specific attributed allowances*
- *Banks and financial markets are involved in Carbon trading*
- *Mostly large companies are selling carbon credits from developing countries through CDM*



2e. But a piece of the puzzle is missing!

- *Local regions in Europe and their public and private institutions are not involved in the climate change business.*
- *Equally small and medium enterprises (SMEs) are neither involved in NAPs nor in the resulting Carbon European Trading Scheme (ETS)*
- *There is not yet any domestic projects in Europe aiming to reduce GHG emission and/or store carbon as it is being done in developing countries*



3a. PE project, the missing piece

- *PE and its institutions enter the climate change business*
- *SMEs are involved*
- *Farmers and foresters are also key actors*
- *The project also deals with climate change risk through adaptation measures*
- *Integrated approach*
- *Noah's Ark, a symbolic starting point*



3b. PE project objectives

- *Improve PE income while contributing to mitigating global warming*
- *Diversify and stabilize income sources by adding biomass energy and carbon credits*
- *Maintain PE's traditions while enhancing its commitment to local and global environment, a good image for tourism*
- *Maintain local jobs*
- *Becoming a model for mountain sustainable economy in the context of climate change*



3c. Project phasing

- *Phase 1: assessing project options and selecting the best*
- *Phase 2: feasibility study with specific CC documentation. Launching of pilot activities*
- *Phase 3: project validation and approbation. Investment and financing plan. Negotiations for carbon credits,*
- *Phase 4: Project implementation*



3d. Phase 1 results

- ***Forest Management:***
C storage with protection/recreation forest and high value market for timber
- ***Biomass energy:***
optimal use of forest residues substituting for heating fuel
- ***Hydropower:*** re-equipping best sites and dealing with Vertex lake
- ***Reducing CH4 emission in livestock:*** improving animal feed and producing biogas
- ***Tourism:*** energy savings in building and infrastructures + special contributions

Phase 2 to start in September 2007



3e. Institutional framework

- New PE institution to coordinate project preparation and implementation
- SMEs, public/private partnership
- Implementation in accordance with sub-project maturity
- Eco-Carbone and its partners: proposed services.



4. Ways to expand PE's approach

- First priority: complete the PE project and possibly expand it locally
- New regions and local governments are interested in Switzerland e.g. Valais
- Eco-Carbone and its partners prepare this expansion phase nationally.
- Possible association with a large bank which provides financing to local governments and public/private ventures



Conclusions

- *PE, turning the climate change threat into an opportunity through C credits*
- *An innovative approach to extend to other mountainous areas nationally and internationally*
- *Special ingredients: local leadership, integrated approach and public/private partnership*
- *Need for change agent such as Eco-Carbone with financial backing*