## Reporting Parallel Session 3

# *Strategies for mitigation of and adaptation to climate change.*

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# Keynote speech: Lorenzo Ciccarese

The context:

- ↑ GHG emissions – China 1st but… overall, concentrated in developed world
- O.7 C° increase in temperature – esp. affecting MED regions
- CC impacts on forestry ecosystems and on productivity of agriculture & forest systems
- Geoengineering techniques

The challenges:

- Challenges for forest policies
- Challenges for forest research and information
- Contradictory objectives: carbon sink, timber production, bio-energy

# Inventory of forest carbon stocks

## Assessments for regional implementation

### *Context: Lombardy / Authors from EPA and Lombardy Region*

- Italy must report the net change in GHG emissions
- Forest growth and changes in forest surface affect carbon sink
- Regional inventory of carbon sink helps account for the balance between absorption and emission of carbon (input/output model: forest data/carbon stock, carbon sink)
- Forest carbon stock is growing – esp. in Natura 2000
- Living forest biomass critical for the carbon pool / absorption (carbon sink)
- Combined use of efficient forestry measures for reducing emissions from mobility and productive activities – effective in CC mitigation and adaptation

# National GHG inventory

## A tool for planning mitigation measures

### *Context: National / Authors from ISPRA*

- National inventory responds to requirements to communicate GHG emissions to UNFCCC
- GHG mitigation measures focus on reduction of $N_2O$ emissions from the soil and $CH_4$ emissions from manure management
- Relevance of agriculture and LULUCF in emissions
- Total GHG emission decreased (5.4%) but by less than the Kyoto target (6.5%)
- Agricultural sector responsible for bulk of $N_2O$ (41%) and $CH_4$ emissions (69%)
- LULUCF responsible for more than 50% increase of total removals in $CO_2$ equivalent – from maintenance of forest land

M&E fundamental to assess contribution of mitigation measures

# Impact of CC on Italian tree species

## Net primary productivity and water use

***University of Rome, University of Tuscia, National Research Council***

- Ecosystems respond asymmetrically to CC
- Forests must adapt to changes in climate variables but also to increased variability (e.g. droughts North instead of South)
- Reduced NPP as a result of CC
- Reduced water use efficiency from climate changes
- Deciduous species strong reduction of NPP values from CC
- Mediterranean oak more resistant
- High temperature and drought condition the final distribution of plant species

# Green Infrastructure

## Benefits, functions and issues

***Context: Northern Italy / Authors from Università delgli Studi di Bari***

**Is RD policy a barrier?...**

- Green infra… …ing beyond the ecological approach
- Urban afforestatio… …liversity and brings social benefits
- UPFs relevant for high grow… …densely populated
- Relevant when lack of green spaces… …logical connections
- Compensatory afforestation – a viable appr…
- Governance by NGOs, volunteers, citizens, environ…
- Empowerment of farmers – ownership through green syste…

Stop talking start planting!!!

# Mainstreaming forest-based mitigation measures

## Policy options

***With a view to the next programming period…***

- Forests underfunded and peripheral in public discourse
- Political commitment/priority is needed

Several options:

Additionality (e.g. carbon credits) vs restructuring (e.g. comprehensive RDPs)

Sector specific or standardised carbon price?

Pay for stocks or for land use change and quality?

European or tropical forests as “loci” for mitigation?

Price or non-price signals and policies?

# SWOT- Current situation

STRENGTHS

Existence of empirical models that measure impacts of CC

Regional inventories of forest carbon sinks

National GHG inventory – attempts to implement regionally, aiming to go local

Biodiversity/social benefits from UPFs

Well being / quality of life from green spaces

High % of living forest biomass in certain areas - mitigation

WEAKNESSES

Management/maintenance harder than creation of forests

CC causes complex diseases

CC advances growing and flower seasons and delays autumn phenomena

Periods of drought and heat affect status of forest trees and vegetation in UPFs

RDP cannot be used for UPFs

Forests underfunded / low priority in public discourse

Current lack of links between research and policy (e.g. GHG inventory)

# SWOT - Prospects

OPPORTUNITIES

RDP 2007-2013

Pursue interests of farmers/citizens

Governance by volunteers/citizens

Increased awareness

Support decision making in the allocation of obligations for reducing emissions

M&E of RD measures

National GHG emission inventory for planning CC mitigation measures

Use results of research for policy making

TRHEATS

Rising temperatures

Reduced productivity and water use efficiency from high temperature and drought

Delays in current funds spending

Limited monitoring of obligations for reducing emissions

Lack of baseline data – measurable indicators

Enhance forestry sector in the generation of carbon credits

# Challenges for future RD policies

- Assessment of adequate funding for forestry measures
- Awareness raising on the role of forestry in climate action
- Increased civil society and grass roots organisations participation
- Effective use of technical models, tools and inventories
- M&E of mitigation and adaptation measures
- Choice of policy options that capitalise on the potential of forests in combating CC
- Bring forests closer to where we live - Green growth in urban areas