



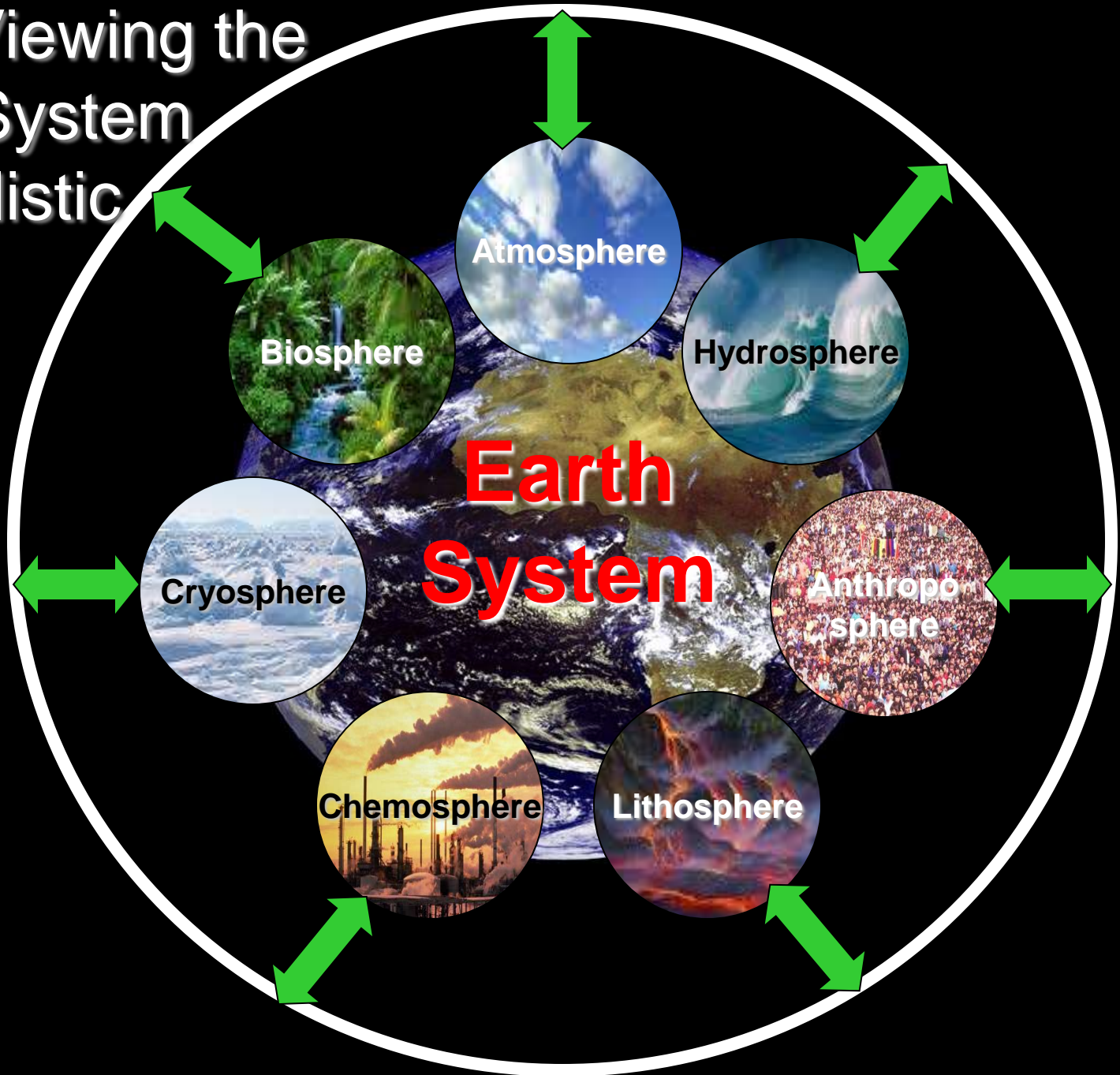
DEVELOPMENT

SOCIETY

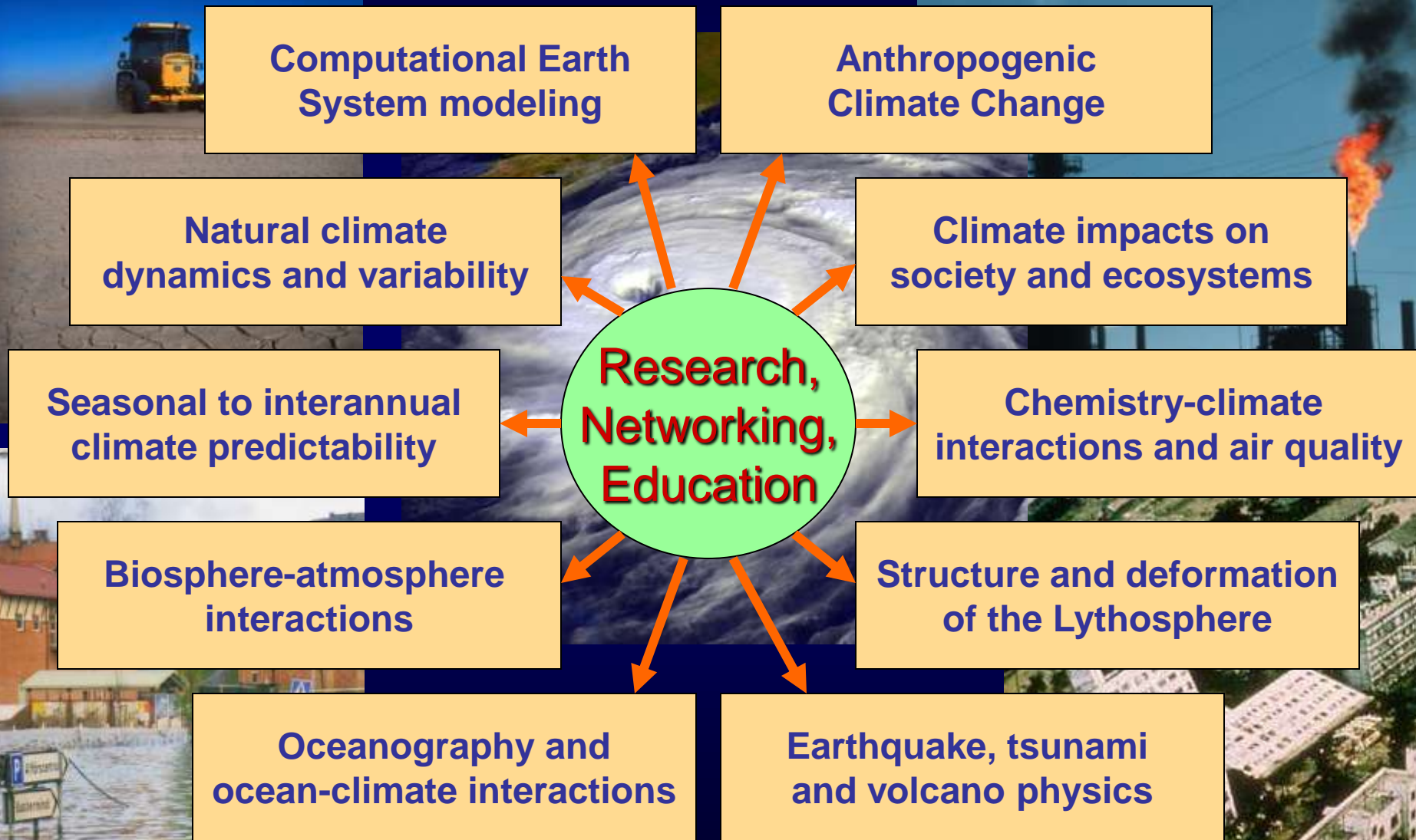
Earth System Physics Section (ESP)

ENVIRONMENT

ESP: Viewing the Earth System in a holistic way



ESP Main Research Areas



In the last several years the ESP section has relied heavily on externally funded projects, particularly from the EU FPs

(Program Environment, Including Climate Change)

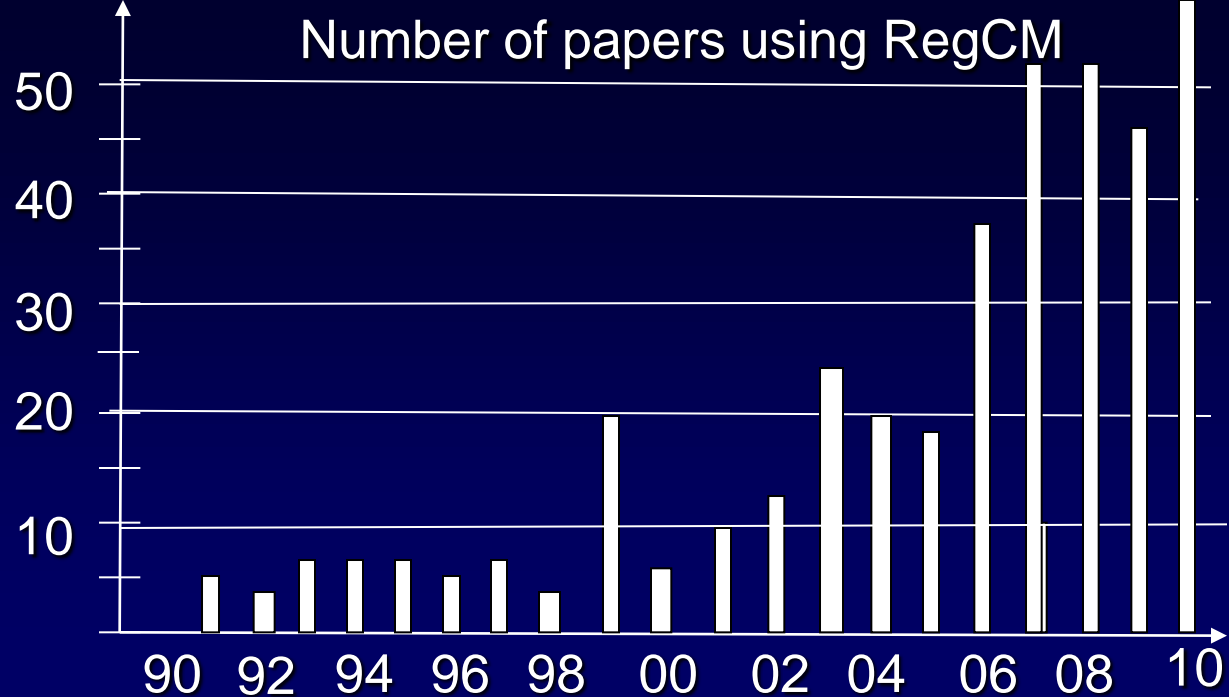
- PRUDENCE (2001-2004): Regional modeling for the European region
- ENSEMBLES(2004-2009): Ensemble-based climate predictions over Europe
- CECILIA (2006-2009): Climate change and impacts over central Europe
- ACQWA (2008-2013): Climate change and water in mountainous system
- MEGAPOLI (2008-2012): Effects of Megacities on air quality and climate
- QWECI (2008-2013): Forecasting system for disease outbreaks in Africa
- HEALTHY FUTURES(2011-2014): Climate change and vector borne diseases in equatorial Africa
- CLIM-RUN (2011-2014): Climate service network in the Mediterranean region
- ATOPICA (2011-2014): Climate change and atopic diseases
- NERC-EU (2013-2015): Earthquake hazard in the Alpine region

The RegCM System

RegCM4

RegCNET (~900 part.)

**More than
4000 downloads
since June 2010**

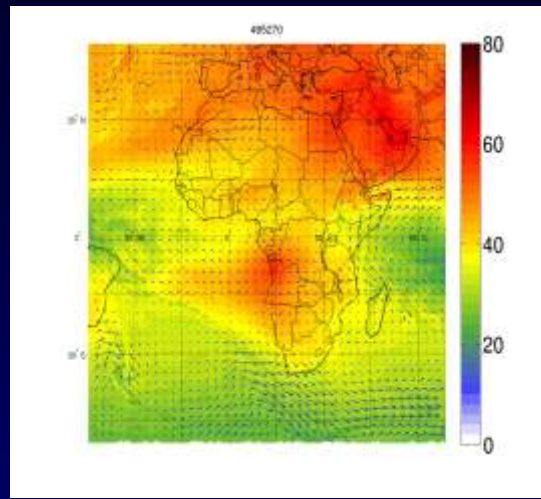


Countries where RegCM is used



RegCM training workshops:
ICTP, May 2012
Baijing, China, September 2013
ICTP, May 2014
Ensenada, Mexico, October 2014

**Strengthening of the model software
development and user support team**



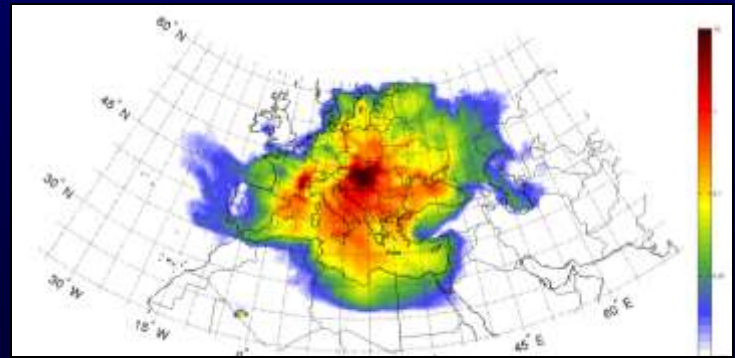
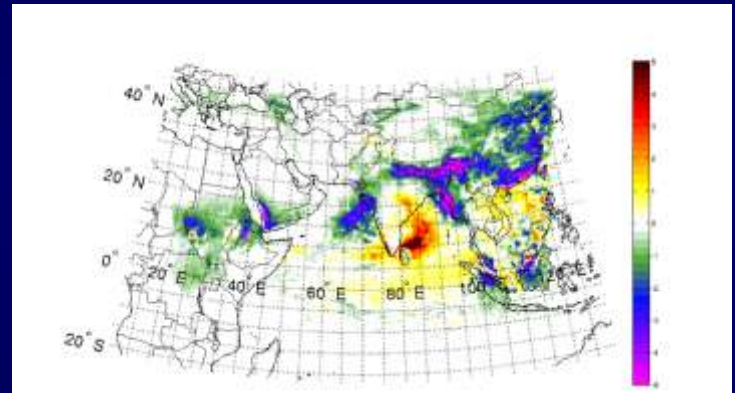
Simulation of tropospheric Ozone over Africa

Aerosol effects on precipitation

Interactive coupling of chemistry/aerosol models to RegCM (Solmon, Giorgi)

Chemistry and aerosol simulations (Solmon, Giorgi)

Biogeochemical cycle (Solmon)



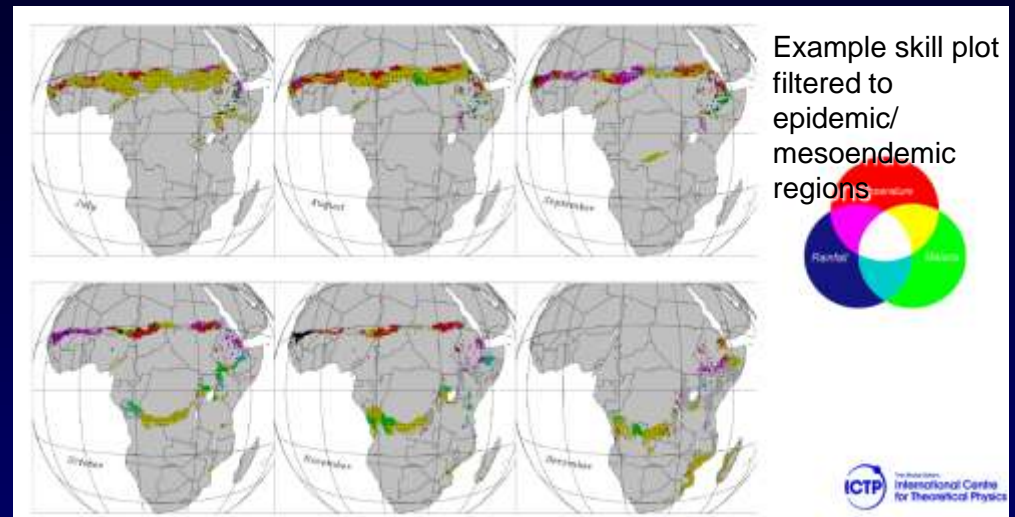
Pollen simulation over Europe



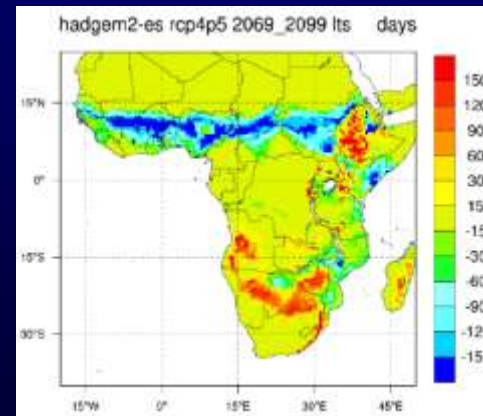
Anthroposphere

Impacts of climate variability and change (Agriculture, water, health, air quality)
(Tompkins, Coppola, Giorgi, Solmon)

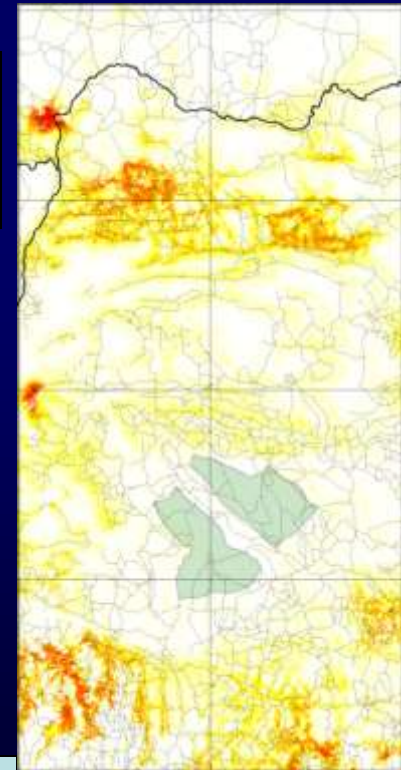
Development and Distribution of impact models (VECTRI, CHYM, FOREST-SAGE)
(Tompkins, Coppola)



Deforestation simulations
With FOREST-SAGE
over the Congo Basin



Future malaria projections



Some lessons learned from past experience

- Most of our involvement in EU projects has occurred through personal contacts
 - A more “structured” approach would be more effective
- Need of a contact point in Brussels
 - Greater information on programs and priorities, lobbying
- Need of greater coordination across the Italian research community
 - The “France” example
- Scientific and administrative management becoming more and more complicated
- Some programs are not accessible to ICTP (e.g. ERC)

DEVELOPMENT

SOCIETY



Thank you

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