



Development of User-Driven Climate Products and Services for Key Socio-Economic Sector Applications

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CLIMATE SERVICES COVER:

- Provision of **historical data and metadata**, **climate monitoring products** e.g. summaries and diagnostics, statistics, drought monitoring, large scale atmospheric circulation patterns, graphical information, etc..., **documentation and characterization of extreme events** (e.g. their return periods)
- **Assessment of climate variability and change** (long term trends)
- **Long Range Forecast** products: Monthly, seasonal, inter-annual climate forecast, which can be expressed as probabilities of averaged parameters (e.g. expected seasonal conditions), taking advantage that the oceanic circulation is the major source of predictability in the seasonal scale
- **Climate watches and early warning**
- **Climate projections** based on the Intergovernmental Panel on Climate Change (IPCC) Special Report on Emission Scenarios (SRES).
- **Assessment of vulnerability to climate, climate impacts, variability and change**, for adaptation to and mitigation of climate change purposes.
- **Climate as a resource** (e.g. renewable energy)
- **Reference guidance**, e.g. Guide to Climatological Practices
- **Coordination and Partnership**

WMO Climate-related Programmes

Under the World Climate Program (WCP)

- AgMP: Agricultural Meteorology Programme
- CCA: Climate Coordination Activities
- WCASP: World Climate Applications and Services Programme
 - CLIPS: Climate Information and Prediction Services
- WCDMP: World Climate Data and Monitoring Programme

Related programmes (multi-sponsored):

- WCRP: World Climate Research Programme
- WCIRP: World Climate Impacts Assessment and Response Strategies Programme
- IPCC: Intergovernment Panel on Climate Change
- GCOS: Global Climate Observing System

In support of WCP, with ToRs established by NMHSs (users needs considered) :

- CCI: Commission for Climatology
- CAgM: Commission for Agricultural Meteorology

CCI OPAG1-2: 2005-2009 Workplan

The World Climate Data and Monitoring Programme (WCDMP) is a program of the World Climate Programme that facilitates:

- ❑ the effective **collection and management of climate data**,
- ❑ **quality control and homogeneity tests**,
- ❑ the **rescue of non digitised historical records**,
- ❑ the **monitoring of the global climate system**, including the **detection and assessment of climate variability and changes (e.g. yearly State of the Climate series)**.

All these issues are considered by CCI OPAGs 1 & 2

CCI OPAG3 ON CLIPS: 2005-2009

Workplan (relevant to WCASP)

- Promotion of **consensus-based climate outlook** product generation, both at the regional and global level, through its support to
 - o the **Regional Climate Outlook Forum (RCOF)** process (see Ogallo's presentation),
 - o and **WMO El Niño/La Niña Updates**;
- Development of a **worldwide inventory of ENSO impacts**
- Definition of functionalities of **Regional Climate Centres (RCCs)**, and their designation and implementation
- Establishment of a **global network of CLIPS Focal Points** and its coordination through Regional CLIPS Rapporteurs.
- **Capacity building of NMHSs** in providing climate services through a worldwide programme of CLIPS Training Workshops for Focal Points; Update of WMO TN No. 145 on Guide on best practices in user liaison; etc...

CCI OPAG3 ON CLIPS: 2005-2009

Workplan (cont'd)

- **Closer integration of climate activities and CLIPS** into the regional Working Groups on Climate Related Matters (WGCRMs), including **partnerships** with UN bodies and international organizations such as WHO, UNWTO, IRI, etc ...
- Promotion of climate applications through **showcase projects** and **user liaison activities**, e.g.:
 - Espoo LWCVC Conference (July 2006);
 - Contributions to national and regional workshops on “Socio-Economic benefits of weather, climate and water services”, leading up to the WMO Madrid conference on Secure and Sustainable Living: Social and Economic Benefits of Weather, Climate and Water Services (March 2007) and its Action Plan; etc...);
- Development of **CLIPS Curriculum** and web-based information;
- **Cross-cutting activities** with other WMO technical programmes, especially WCRP, WCDMP, DRR, AgMP, HWR, ETR and WWW, Technical Commissions CBS, CAgM and CHy as well as other global systems such as GCOS and GEO;

Role of CLIPS Focal Points

Responsibilities of individual Focal Points will vary according to national or regional requirements and may include:

- Acting as CLIPS Project Office contact points
- Acting as national sources of information on CLIPS-related activities
- Providing assistance in national training
- Advising on national requirements for data access and distribution, training and projects
- Advising on national requirements for forecasts
- Acting as national focal points for forecast interpretation
- Providing an interface to users and user groups
- Coordinating research activities
- Arranging training for users
- Distributing training and other materials
- Feeding material to CLIPS and national web pages
- Reporting on national climate, prediction and applications research results
- Reporting on climate applications and benefits achieved through their use
- Advising on the development of the CLIPS Curriculum, a resource for training of meteorologists and end users

CCI ET4.1 on Climate and Health: 2005-2009 Workplan

- Develop **WMO/WHO Guidance on Heat Waves and Health**: (full draft was available by May 2007 at Cg-XV)
- Develop **Guidelines on Universal Thermal Climate Index** (UTCI) (also COST 730 Action)
- Develop and maintain an online **virtual document library and bibliography** on health/climate issues
- Review and assess the **utility for health applications of seasonal prediction products** developed by various NMHSs, centres and agencies

CCI ET4.1 on Climate and Health: 2005-2009 Workplan (cont'd)

- Develop a **survey paper on seasonal prediction for infectious diseases and other health outcomes**
- Provide to ET 3.3 information on **ENSO-related health impacts** for the atlas project
- Develop joint **WMO/WHO fact sheets** on climate change and health (update WHO original), climate variability and extremes and health (new)
- Develop a **fact sheet on climate and fire health impacts**, in relation to natural fires related to seasonal dry spells

CCI ET4.2 on Climate and Energy: 2005-2009 Workplan

- Update TN 172 and TN 175 on “Meteorological Aspects of the Utilization of Solar Radiation as an Energy Source” and “Meteorological Aspects of the Utilization of Wind as an Energy Source”, respectively, into a single document “**Meteorological Aspects of Utilization of Renewable Energy Resources**” (with UNEP)
- Prepare a report on case studies that demonstrate the benefits of, and problems related to, the use of **climate information and predictions in support of energy operations**, taking special account of end-user liaison
- Prepare a **status report on climate data needs for supporting wind and solar energy development**
- Develop, in partnership with NMHS climate services programmes, the WMO RAs and CLIPS Focal Points, **tailored climate products for application to the energy sector**, including special attention to services at high latitudes

CCI ET4.3 on Climate and Tourism: 2005-2009 Workplan

- Assessment of Climate and Tourism Research and Practice
- Capacity Building Workshops: Dissemination of the results of the Assessment
- Tourist Education and Outreach Products (with WTO)

CCI ET4.4 on Urban & Building Climatology: 2005-2009 Workplan

- Update TN 149 on **Urban Climatology and its relevance to Urban Design**
- Update TN 150 on the **Application of Building Climatology to the problem of Housing and Building for Human Settlements**
- Online **urban climate bibliography**
- **Urban Model Intercomparison**
- International Conference on Urban Climate (**ICUC6**)
- International Conference on Urban Climate (**ICUC7**)
- Development of **curricular and training materials**

The two-way dialogue can be engaged through different means

In contrast to weather services, **climate services need probably much more interaction with users because there are so many ways to produce climate services that all cannot be covered in advance.**

Climatology is a specialized domain on his own, with specific approaches in terms of understanding the climate system, of data processing, and tools, needing dedicated training/capacity-building.

- **Quality management approaches** for NMHSs activities: overall strategy driven by user/customer needs, including assurance that customer expectations are satisfied, and that remedial action is taken on under-performing processes; continual performance monitoring and improvement; audits by external and independent experts, customer satisfaction surveys;...
- **Promotion of climate applications through user liaison activities**, e.g. Espoo and Madrid conferences (see e.g. Working Groups Reports in the final report of Espoo conference)
- **Multi-disciplinary meetings** such as **UNFCCC** (see e.g. WMO and NMHSs contribution to the UNFCCC Nairobi work programme on impacts, vulnerability and adaptation to climate change), **RCOFs**, **CCI technical conferences**,

The two-way dialogue can be engaged through different means (cont'd)

- **Partnerships** e.g. Health and meteorological experts agreed in 1996 to form the *Health and Climate Partnership for Africa* to enhance the use of meteorological information to mitigate health impacts, e.g. **Malaria, Meningitis and other climate sensitive diseases**)
- **Showcases**
- Establishment of **networks of focal points** in charge of collecting feedback information from the user community (e.g. CLIPS)
- **Surveys**
- **Permanent technical commissions** at national level involving NMHSs, users from public/institutional and private sectors (e.g. the French Higher Council of Meteorology)
- **Capacity building** (e.g. communicate to end users how to best use climate information, or the concepts of uncertainty and confidence intervals)
- **Provision of additional information that can be easily used as an aid to decision making**
- **Guidance on best practices** in different sectors, illustrated by **case studies** and “**success stories**”, e.g. recently updated **WMO TN No. 145 on Socio-Economic benefits of Climate Services**, covering most of socio-economic activities in terms of users needs (22 papers). 14



Thank You!

For more information, visit :

CCI webpage:

http://www.wmo.int/pages/prog/wcp/ccl/index_en.html

WCP webpage:

<http://www.wmo.int/web/wcp/ccl/index.html>

And

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