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Document COST734.04.03

**DRAFT MINUTES OF THE THIRD
MANAGEMENT COMMITTEE MEETING OF
COST ACTION 734**

**Impacts of Climate Change and Variability on
European Agriculture: CLIVAGRI**

**Poznań, Poland
20-22 May 2007**

1. Welcome to participants

The MC Chair S. Orlandini welcomed the participants to Poznań, and after giving some organizational instructions he opened the meeting. The List of participants is in **Annex 1**, an updated List of MC members is in **Annex 2**.

2. Adoption of Agenda

Two more scientific presentations were announced on the top of Questionnaires presentations. Both of them were taken as a part of point 8 of the Agenda.

MCM3/D1 Agenda as given in **Annex 3** was adopted unanimously.

3. Approval of the Minutes of 2nd MCM

MCM3/D2 MCM2 Minutes were approved without any amendment.

4. Review of the decisions of 2nd MCM

No notices were raised to the decisions of MCM2.

5. Presentation of the new delegations

No new delegation participated to the meeting. S. Orlandini welcomed the participants who replaced the MC members for this meeting and/or acted as the invited experts /P. Struzik, Ch. Domenikiotis, D. Bampzelis, V. di Stefano, R. Rotter/.

6. Report of the MC Chair /semi Annual report to the DC/

See **Annex 4**.

7. Report of WG's chairs

The WGs Chairs have summarized the statistics from the Questionnaires. Approximately 15 countries have responded to the Questionnaires. The statistic from WG3 was not known as WG3 leader did not attend the meeting. The detailed reports on the particular Questionnaire are listed in point 9 of these Minutes.

8. Workshop presentations on Questionnaires

Six WGs members responsible for questionnaires processing presented the results of the second questionnaire circulation. The results of the responses to the questionnaires were discussed at the WGs meetings. Following general conclusions have been reached:

- 14 to 17 countries out of 23 have responded to the particular questionnaire. The response mostly covers the general topic set by the topics in the questionnaires, however the MC expresses a feeling to increase the response level with the regard to the territorial distribution. Thus, the representatives of the countries who have not responded to the questionnaires are encouraged to do so as soon as possible;
- the responses to the particular questionnaire in many cases have not covered the concrete topic in full. This was caused mainly because the MC members who responded to the

questionnaires had to contact the experts in the country in order to receive the proper information on the concrete question. The time given to respond to the questionnaire was too short to organize a certain survey within the country. This has resulted in many either missing or general and descriptive responses to the concrete questions while the specific information required has not been delivered;

- it was difficult to retrieve an European view on the topic in some cases;
- a particular information to WG3 questionnaire was missing as the WG3 leader could not attend the meeting and there was no full info available on how many responses to WG3 questionnaire have arrived.

Following above mentioned recognitions the MC suggested:

- the responsible authors will re-send the questionnaires to the participants in order to clarify some points. The collection date of the questionnaires is recommended for the end of June.

Then the following time schedule will be followed:

Till end of July : Specific additional information required for the report

Till end of September : Deadline for the template replies

Till the next meeting : Writing the reports and put it together

- IPCC report should be used as a source of information for the relevant topic
- some international centres /JRC, ECSN, RA VI – agro group/ should be probably contacted in order to get a general information on international activities regarding the particular topic in Europe
- a contact to EEA will be made in order to search for the indicators related to agricultural characteristics used in their reports.

9. Reports from the WGs meetings /preparation of survey report, one year working plans.../
See **Annexes 5-8**.

10. Preparation of the survey – publication

The preparation will continue according to the plan described in point 8. It has been decided the published version will include the answers to the questionnaire where needed. The answers will be published in an annex to the report.

11. Status of the COST Action

See **Annex 9**

12. Grant system implementation – Working plan and budget plan

The implementation of the Grant system is delayed at least by July 2008. Pay as you go system will be applied in a standard way for the period July 2007 – June 2008. The full budget line is not known yet. Some reimbursements from the first half of 2007 can be delayed by September 2007. Publication budget as well as GASG budget is frozen until a new contract under FP7 is signed. No activities can be performed in July and August 2007.

The proposal for the budget of 734 for September 2007 to June 2008 is in **Annex 10**. The final budget will be designed according to the budget line given by the COST Office.

13. Web site

Web site is fully operational. The participants are encouraged to send any contributions to the web site to Federica Rossi. The MC and WGs members are encouraged to send their EoC to Federica Rossi with cc to Simone Orlandini by the next MCM in October 2007.

14. Status of external contacts WMO, EEA, CECILIA, COST Actions 725, 726, ES0601

The contacts established to above mentioned bodies are kept. Concrete points of possible cooperation should be drafted. EEA is producing a report on climate change impact in Europe using a series of indicators. Agriculture is one of the sectors the impact on which EEA will evaluate. It is worth to contact the responsible project manager in EEA in this respect. COST 725 will organize its MCM in the beginning of June. COST 734 members participating to 725 are encouraged to discuss the possible points of concrete collaboration. ES0601 organized 1st MCM two weeks ago. No concrete working plan has been set up so far. V. Alexandrov will act as a contact point to ES0601.

15. Short term scientific mission

Two STSMs were realised since last MCM. V.Kazandjiev and V. Georgieva-Milanova attended BOKU University in Viena. Calibration and verification of WOFOST model under Bulgarian climate conditions has been performed. The STSM report is in **Annex 11**. The presentation of V. Kazandjiev on Calibration and verification of WOFOST model above mentioned STSM will be put on the web.

MCM3/D3 The MC approved the STSM report of V. Kazandjiev and V. Georgieva-Milanova including the financial support.

A proposal for a STSM was presented by Dr. Reimund Roetter with the following details:

PROPOSED PERIOD: 1 – 30 September 2007

HOST: Pirjo Peltonen-Sainio, MTT, Agrifood Research, Jokioinen, Finland

APPLICANT/VISITING SCIENTIST: Reimund Roetter, Soil Science Centre, Wageningen University and research centre, Netherlands

REQUIRED COST CONTRIBUTION: 2475 € (22 days a 90 Euro and travel (train, air faire, bus – in total: 495 €

MCM3/D4 The MC approved the STSM proposal presented by Dr. Reimund Roetter

16. Core Group status

The core group of 734 was established at MCM2 but its status has not been defined. The Chair of the Action will organize a quick decision/approval making process by the core group in some specific cases when needed.

Following are the points of status and responsibilities of the Core group approved by the MC:

- the Core group consists of the Chair, vice-Chair, the WGs leaders and co-leaders and web administrator of the Action.
- following the working plane the core group will arrange the internal communication among the WGs
- taking care about the external contacts of the Action
- organizing the internal administration /approval of the applications, assessment and the approval of the STSM reports/ of the STSMs and its communication to the COST Office.

- preparing the budget plan for the next financial period
- preparing the working plans and budget plan for the next period under Grant system
- setting up the ad hoc groups to perform the specific work /editorial boards etc./
- preparing the selection of experts invited to the cc meetings and workshops
- setting up the lists of participants to the Action's meetings and workshops

The Chair of the Action will formally approve the applications and arrangements on behalf of the MC after discussing the matters within the Core group.

17. Time and place of next meeting

MCM3/D5 An expert/Core group meeting will be organized in Escorial (ES) in the first half of October of 2007 in parallel with EMS/ECAM Conference. The financial support will be given also to the session conveners and Action's members and experts who submitted the presentations to the Conference on the topic close to 734.

MCM3/D6 MCM4 will be organized together with WGs meetings in Vienna, AT on 22-23 October 2007.

MCM3/D7 MCM5 will be organized together with WGs meetings in Larisa, GR in spring 2008.

MCM3/D8 MCM6 will be organized together with WGs meetings in Romania in autumn 2008.

18. AOB, internal administration, publications

As there are big discrepancies in between the number of invited participants to the meetings and the number of really coming the MC agrees to let circulate an e-mail to all people on the invitation list if they are coming and only those who answer positively will be invited. This will enable better financial management and better planning of the detailed Agendas of the meetings.

There are two publications in preparation and one was published in May 2008. As there is no clear view from which budget the publications will be supported at the moment the publication budget was included into the Action's budget.

MCM3/D9 The MC agrees to support the following publications:

- the publication of WG2 of COST 718 published by Springer in May 2007 by cca 7000 Euro
- proceedings from the training school of COST 718 in Volos, GR by cca 5000 Euro
- the Inventory survey of COST 734 by cca 7000 Euro

Luis Gimeno has announced the MC with the possibility to prepare a cumulative contribution to New York academy publication. S. Orlandini will bring further details on possible arrangement of COST 734 contribution.

Antonio Mestre informed about workshop and possible publication of WG3 of COST 725 dealing with different issues of climate change and phenological development issues.

MCM3/D10 Under the proposition of M. Kepinska – Kasprzak, the MC unanimously approved the nomination of P. Struzik as permanent expert of COST 734 in the field of remote sensing and member of WG2, sub group remote sensing.

19. Closure of the meeting

S. Orlandini thanked to all participants to their active contributions, thanked to the local organizer for efficient organization of the sessions and closed the meeting.

List of decisions:

MCM3/D1 Agenda as given in **Annex 3** was adopted unanimously.

MCM3/D2 MCM2 Minutes were approved without any amendment.

MCM3/D3 The MC approved the STSM report of V. Kazandjiev and V. Georgieva-Milanova including the financial support.

MCM3/D4 The MC approved the STSM proposal presented by Dr. Reimund Roetter

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List of Annexes

Annex 1 List of participants

Annex 2 List of MC members

Annex 3 Agenda

Annex 4 Report of the MC Chair

Annex 5 WG1 Report

Annex 6 WG2 Report

Annex 7 WG3 Report

Annex 8 WG4 Report

Annex 9 COST Office information

Annex 10 Financial plan for COST734 for September 2007- June 2008

Annex 11 STSM report by V. Kazandjiev

Annex 1 List of participants

- 1 Josef EITZINGER Austria
- 2 Valentin KAZANDIJEV Bulgaria
- 3 Vesselin ALEXANDROV Bulgaria
- 4 Visnja VUCETIC Croatia
- 5 Tomas HALENKA Czech Republic
- 6 Miroslav TRNKA Czech Republic
- 7 Jorgen Eivind OLESEN Denmark
- 8 Kurt Christian KERSEBAUM Germany
- 9 Leonidas TOULIOS Greece
- 11 Christos DOMENIKIOTIS Greece
- 12 Dimitros BAMPZELIS Greece
- 13 Pirjo PELTONEN-SAINIO Finland
- 14 Emmanuel CLOPPET France
- 15 János MIKA Hungary
- 16 Zita KONKOLYNE-BIHARI Hungary
- 17 Valentina di STEFANO Italy
- 18 Simone ORLANDINI Italy
- 19 Reimund ROTTER Netherlands
- 20 Tor Hakon SIVERTSEN Norway
- 21 Jerzy KOZYRA Poland
- 22 Malgorzata KEPINSKA -KASPRZAK Poland
- 23 Piotr STRUZYK Poland
- 24 Gheorghe STANCAILE Romania
- 24 Elena MATEESCU Romania
- 25 Dragutin MIHAILOVIC Serbia
- 26 Pavol NEJEDLIK Slovakia
- 27 Antonio MESTRE BARCELO Spain
- 28 Pierluigi CALANCA Switzerland
- 29 Giampiero MARACCHI DC ESSEM representative

Annex 2 List of MC members of COST Action 734

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Agenda

Management Committee Meeting COST Action 734
Impacts of Climate Change and Variability on European Agriculture: CLIVAGRI
Poznan (Poland), from 20/05/2007 to 22/05/2007

Sunday 20/05/2007

1. Welcome to participants
2. Adoption of agenda
3. Approval of the minutes 2nd MCM
4. Review of the decisions of 2nd MCM
5. Presentation of the new delegations
6. Report of the MC Chair /semi Annual report to the DC/
7. Report of WG's chairs
8. Workshop presentations on Questionnaires

Monday 21/05/2007

- WGs meetings /Agendas prepared by WG leaders/
9. Reports from the WGs meetings /preparation of survey report, one year working plans.../
 10. Preparation of the survey – publication

Tuesday 22/05/2007

11. Status of the COST Action
 - Basic information from the COST Office /Grant System +/
 - Number of Signatories
 - Budget Status, budget allocation process
12. Grant system implementation – Working plan and budget plan
13. Web site
14. Status of external contacts WMO, EEA, CECILIA, COST Actions /7XX???
15. Short term scientific mission
16. Core Group status
17. Time and place of next meeting
18. AOB, internal administration
19. Closure of the meeting

Results achieved during the period 16 November 2006 – 31 March 2007

The activity of the action started in November 2006 in correspondence of the first MC organised in Brussels. Second MC meeting was organized in February 2007 in Florence, I. However a kick off meeting was held again in Brussels in April 2006, so that a preliminary overview of the Action was performed and the delegates and the experts had the opportunity to meet and to discuss about possible activities, structure and organisation of the COST 734.

Actually the main goal of the Action, the study of climate change impact on agriculture, represents one of the main field of interest of international community and recently the meteorological hazards due to global change are well know also by public opinion. Newspapers, magazines, TV and radio are daily showing news describing effect of climate change (frost, heat waves, floods, etc.), as well as the results of international conferences, mainly at political and scientific level, organised to find solutions, in terms of mitigation and adaptation, to climate change.

The period of activity, four months, is very short, but the performed activity was in agreements with that described in the objectives reported in the Memorandum of Understanding and related annexes. The first year is addressed to the “Phase A”: Planning, operational arrangements, establishment of WGs and inventory. These are the activities performed by MC and WGs:

MC Establish initial WGs and membership and define initial work

Identification of end-user needs

Definition of European agricultural areas focus of COST Action activity depending on data availability, crop diffusion, etc.

Establishing links to other topic relevant bodies and projects

WG1 Critical review of agroclimatic indices and simulation models and assessment of the new needs

WG2 Inventory and collection of current climatic information from European regions

WG3 Inventory and collection of future climatic scenarios

WG4 Definition of standard criteria for the evaluation of hazard impacts on agriculture in Europe

As concerning MC all the participants described their expected contribution to the Action by preparing the Expression of Commitments. A deep discussion was performed during the MCMs in order to identify the main interesting areas for European agriculture, as well as the more relevant crops and impacts. This was the final decision taken following the lists prepared by each country: crops - wheat, maize, grassland, oilseed, barley, potato or sugar beet, apple, grape; impacts - drought, excess rain, frost (snow cover), seasonal shift, heat stress, pest and disease

As concerning the specific activity of each WG, leaders were nominated among the participants and in two cases (WG2 and WG4) a co-leader was elected to support the leader activity. In the frame of WG2 a special group working on remote sensing was created. To collect the information from each country it was decided to prepare questionnaires to be filled by delegates and experts. Particularly the following questionnaires were disseminated, together with examples in order to facilitate the collection of the information:

WG1: Agroclimatic Indices and Models

WG2: Trends in Agroclimatic Indices and Model Outputs

WG 2 Remote Sensing Subgroup: Satellite Data Records Survey

WG3: Climate change scenarios

WG4: Risk Assessment and Foreseen Impacts on Agriculture

Collected data will be preliminary analysed during the III MCM (Poland May 2007) and then the final results will be finalised to prepare one or two publications describing the state of the art of climate change impacts on agriculture in Europe, in terms of models, data, scenarios and expected risks for different agricultural systems.

A core group was created, including chair, vice-chair, WGs leader and co-leader, WEB site responsible, with the aim of simplifying decision making for specific tasks, such as STSMs process, publications, preparing the MC meetings and further activities to be discussed at the MC meetings. A poster and a leaf let were prepared to describe the activities and aims of the Action and they will be distributed during every possible occasion to facilitate the contact of the COST 734 with external institutions. The Web site (www.cost734.eu) was immediately planned and realised.

Several Short Term Scientific Missions were approved so increasing the possibility of scientific exchanges among the MC members. Missions were particularly addressed to young scientists to increase their involvement in Action activities. A special attention will be given to this particular point, supporting young scientists, mainly by organising training schools and supporting their participation to workshops and conferences.

Dissemination of results

• *Action related Publications and Reports*

The following publications were supported by the Action:

“Teaching programme of Training Summer School on Agrometeorological Simulation” in collaboration with Mr. Nicolas Dalezios.

“Weather, Climate and Farmers” in collaboration with WMO.

Moreover during the second MCM the following presentations were available together with reports:

- Advances in homogenisation methods of climate series: An integrated approach
- Climate Change 2007: The Physical Science Basis Working Group I Contribution to the IPCC Fourth Assessment Report. SPM accepted February 1st 2007 in Paris
- An Overview of Environmental Hazards Related to Crops in Greece

• *Conferences and Workshops*

Members of Action attended the following events and reported on them: Conference on “Living with climate” (Helsinki) and “5th Conference of the European Meteorological Society (Ljubljana). No presentations concerning COST Action were given due to the early stage of COST 734, but dissemination of aims and activities was performed. This activity in attending events relevant to 734 activities continues during Phase 1 in order to focus the work of working groups with the regard to recent development.

• *Web site*

The web site was organized following the logical structure of the Action, and was aimed for giving information both NDs involved in the action to facilitate the mutual internal exchange of information, both to external users. The introduction of files of reports and scientific presentations made during the Cost Meeting or other events have been planned to disseminate the results, and useful links to related sites and Congresses and Conferences in related subjects listed and updated. Interactive participation of NDs through password-regulated access was made possible to facilitate further exchanges of information.

- *Scientific and Technical Cooperation (the list does not include the organizations, projects etc directly involved in the Action, neither does it include cooperation and contacts at national, regional or local level)*

Strong scientific cooperation was defined with the Agricultural Meteorology Division of the World Meteorological Organization. Joint activities will be planned, as well as the possible organisation of common meetings and conferences together with the relevant expert teams of CAgM will be considered. Collaborations were defined with WMO activities in the frame of climate change impact and particularly with Open Program Area Group (OPAG):

- 3.2 ET on impact of climate risks in vulnerable areas: agrometeorological monitoring and coping strategies
- 3.3 ET on drought and extreme temperatures: preparedness and management for sustainable agriculture, rangelands, forestry, and fisheries

Links with WAMIS “World AgroMeteorological Information Service” and the International Society of Agricultural Meteorology (INSAM) are in progress.

The participation of delegates nominated from the Agricultural and fisheries unit of the Joint research centre of ISPRA, represents of very important point for the establishment of direct cooperation with European Commission.

Next steps for the transfer of the results will be addressed to informing decision makers and to transmitting results to the scientific community. This will apply to both those using these methods and those who might have an application for these methods. So the dissemination will not be limited to the presentation of what has been achieved during the COST Action, but will focus rather on the precise evaluation of climate change and variability impacts on agriculture and environment.

- *Transfer of results*

The collection of information for the questionnaires was organized in collaboration with the main national organization involved in climate change area. The results of this first activity will be disseminated at this level and the planned two publications to describe the state of the art at European level will be used for a deep transfer of the results.

- *Contacts in the ERA*

At the same time links with EU project and COST have been established, individuating a member of MC as responsible of this link, with the commitment of creating a permanent connection and the request of periodically relate to the MC. In particular COST 725, COST 726, new COST on Homogenization of climatic data, CECILIA project, ACCRETe project, ENSEMBLES project and CLAVIER project. A collaboration with Climate Change and Energy Group of European Protection Agency was also defined

Self evaluation

The participation of members already involved in previous Actions allowed the consolidation of group and the acquired experience represents an important point for the success of the planned activities. This, together with the organisation of the kick off meeting, allow a reasonable start of the activities and the establishment, after only four months from the first MC, of a very good working team with well defined goals and activities.

The Action seems to be well organised, the MC is very active and the core group allows a good preparation of the MCMs and WGs, as well as a simplification of the procedures.

The main difficulty seems to be represented by the need of providing the agricultural community (policy-makers, extension services, farmers, etc.) with consistent risk assessment based on harmonised data for European agricultural areas. The present situation of agriculture in Europe, following the criteria defined by PAC, is mainly oriented to quality and to environmental protection. Accordingly it seems to be clear that the large number of activities presently performed at European levels can be considered in the frame of COST 734 to elaborate global and regional recommendations to be disseminated among the central and local Administrations.

Short report about WG1 presentations

MCM Meeting, May 20-22 2007, Poznan

Josef Eitzinger

Status of WG1 Questionnaires :

Till the MCM meeting 15 replies of the WG1 questionnaire (original example is attached) were received (out of 23 countries). The statistics of the replies to the various questions can be seen from second attached file.

It can be concluded that in almost all questionnaires some country related information is obviously still missing (answered questions by NA), probably caused by incomplete surveys or low responding rates.

Based on the results following decisions were done :

1) Evaluation of Questionnaires (missing things, potential improvements)

A modified questionnaire will be sent out again to the relevant countries, asking for additional information or where significant parts are still missing (which will be highlighted in the questionnaire itself by the WG leader).

Remarks to the single questions:

Q1: Description of structure of national services to be added, complete incomplete replies.

Q2 : Pest and disease models to be showed in an extra category, to be completed and adapted in some cases

Q3 : Distinction between direct responses and calculated crop responses (also Q1) should be done

Q4 : To do some reassessments (e.g. literature survey)

Q7 : Limitations should be named

Q8 : Survey on EU-project results should be done.

2) Index for the planned report (Content of the report)

Established Subgroup responsibilities for WG1-Questions (Q):

Q1,Q3 : Pavel, Simone

Q2,Q4 : Valentin, Vucetic

Q5,Q6 : Tor, Dragutin

Q7,Q8 : Josef

4 parts (modules) recommended for the WG1 report :

1 Application of algorithms in Europe (pest and disease models included)

2 Application of process oriented models in Europe

3 Useful outputs and main limitations (considering spatial and temporal scale)

4 Application international and GIS, RS combination

Suggested time schedule :

Till end of June : Completion of original /adapted questionnaire

Till end of July : Send out Subgroup-Templates (specific additional information required for the report)

Till end of September : Deadline for the template replies

Till the next meeting : Writing the reports and put it together

Coordination with WG4 !

3) Next period working plan outline

- Comparison of (crop)models on regional basis (case studies), for detecting variabilities :
Application oriented use of models should be strengthened.
- Emphasizing case studies on pest/disease impact modelling (case studies for climate change impacts)
- Emphasizing phenological studies

4) General

Discussion requested on : Who is intending to do which case studies ?

Requests / recommendations for other groups :

- Definition of a reference climate scenario, additional recommendation for most reliable regional scenarios, including regional trends in climate variability (to be asked from WG3 !).
- Scale related view (spatial, time) and comparison of results (WG4, WG2 !)

Next Actions :

- Koop. with WG 2 RS of WG1 requested
- To send report on decisions to Simone/Pavel after the meeting

**COST 734
WG 2 2nd REPORT
May '2007**

During the 3rd MCM in Poznan, the WG2 discussed the results from the questionnaire on trends in agroclimatic indices and crop model outputs. The following major questions were included within the questionnaire:

1. Please provide information on long-term (preferably at least 30 years) meteorological and agrometeorological data applied in your country:
2. Please indicate any models (e.g., numerical weather models, regional climate models, weather generators) and/or their related outputs used in your country:
4. Please name and shortly describe any homogenization tests/procedures applied to meteorological and agricultural related time series in your country:
5. Please provide any information on the statistical methods for analyses of meteorological and simulation model output related time series
6. Please specify any additional data/information/problems/questions related to the implementation of the WG2 tasks and the achievement of the respective deliverables

V.Alexandrov presented the results from the survey first to the WG2 members. There was a broad discussion in the field among the WG2 members. Further steps for the WG2 work were suggested and agreed between the partners. The possible content of the publishing the obtained results from the WG2 questionnaire was also discussed. Finally the major WG2 actions for the next COST 734 year were considered (collection and control of climate data).

During the joint MCM V.Alexandrov gave a power point presentation (to be posted on the COST 734 web page) on the above-mentioned topics. His idea to publish the whole WG2 questionnaires as an Annex to the major publication was accepted by most of the national delegates.

COST 734 / WG 2 / RS / 2nd REPORT / May '07

During the 3rd MCM in Poznan, L. Toullos on behalf of WG2/RS subgroup, presented the results of the questionnaire for the satellite data records survey.

The result of this questionnaire is an inventory of the satellite data records used in each country of Europe (at least in those participating in COST Action 734) for the collection of climate and biophysical data for agrometeorological use. These WG2/RS questionnaire results are presented in ANNEX 1. In ANNEX 2 the processed WG2/RS questionnaire preliminary results are presented.

A WG2/RS Meeting was organised in Poznan, during the 3rd MCM (21 May 2007, 11:00'-13:00'). The participants in this meeting were: L.Toullos (GR, WG2/RS leader), G. Stancalie (RO, delegate), V. Kazanjiev (BG, delegate), P. Struzik (PL, expert), C. Domenikiotis (GR, expert). During this separate meeting L. Toullos and the WG2/RS participants discussed the questionnaire results. After discussions the participants concluded to the following decisions:

1. Ask all delegates to update the questionnaire data with emphasis on climate and biophysical data for warning purposes for agriculture, and definitions which products are prepared by individual institutions internally but also which are available globally from the main satellite operators, as well as the purpose of the models referred on the questionnaire.
2. Ask all delegates to send examples of satellite images, comments and references for the questionnaires.
3. Write an introductory paper describing the difficulties (limitations) of the use of satellite data in the study of the impact of climate change on agriculture (WG2/RS members).
4. Write a paper based on the processing of the results of the updated questionnaires (WG2/RS members).
5. Collaborate with WG1 regarding Question Nr 8 (RS and GIS).

Minutes of COST 734, WG3 meeting, Poznan, 21.05.2007

- Participants: Demetrios Bampzelis, Pierluigi Calanca, Emmanuel Cloppet, Tomas Halenka, Janos Mika, Simone Orlandini
- Agenda: evaluation of WG3 questionnaires; definition of further steps necessary for the preparation of a written report; working plan for the next period.
- Evaluation of the WG3 questionnaires. Due to the absence of the WG3 leader (Prof. Lucka Kajfez Bogataj) it is not clear how many questionnaires have been returned to the WG3 leader as of the 20th of May 2007. Simone Orlandini has received a copy of 13 questionnaires from: Bulgaria, Croatia, Czech Republic (2x), France, Germany, Italy, Poland, Romania, Serbia, Slovenia, Spain, Switzerland). The available questionnaires are screened in the available time, to provide at least an overview to the MC. A PowerPoint presentation with the results of the screening is prepared by Pierluigi Calanca, and will be made available to the MC. A concise summary is attached to the minutes.
- Preparation of a summary of the WG3 survey: Pierluigi Calanca is asked to get in contact with the WG3 leader, to decide upon further steps necessary for the preparation of the written report. A mail has been sent to Lucka Kajfez Bogataj on Thursday, May 24 2007.
- Working plan for the next period: It is decided to basically adhere to the schedule proposed by WG1, i.e. final evaluation of the questionnaires by the end of June 2007, and first draft of the report by the next MC meeting (possibly November 2007). It is further decided to: (i) evaluate scenarios used for the preparation of the IPCC AR4 with respect to the needs of COST 734; (ii) to establish links to ENSEMBLES and concretize links to CECILIA in order to assess the availability of regional scenarios and downscaling tools from these projects; (iii) to envisage the preparation of 1 or 2 case studies (future trends of agroclimatic indices in Europe). The responsibilities for (i) to (iii) need to be discussed with the WG3 leader.
- Actions for the immediate future: (i) Pierluigi Calanca is asked to contact the WG3 leader concerning the working plan; (ii) Pierluigi Calanca send a mail to all MC members, prompting for WG3 questionnaires not yet returned to the WG. Copies of the questionnaires should be sent to the WG3 leader (lucka.kajfez.bogataj@bf.uni-lj.si), Pierluigi Calanca (pierluigi.calanca@art.admin.ch) and Simone Orlandini (Simone Orlandini (simone.orlandini@unifi.it)).

Pierluigi Calanca, May 30, 2007

WG3 survey on “Climate change scenarios”

Short summary of the answers to the questionnaires returned as of 20.05.2007 to WG3

Q1: Which types of climate change scenarios were used so far for research and operational purposes? Which strength and weaknesses were found?

- Scenarios: incremental scenarios (prescribed temperature and precipitation anomalies); global scenarios from the IPCC Data Distribution Centre; global scenarios from specific model runs (ARPEGE, HadAM3, ECHAM4, ECHAM5, CGCM, CSIRO, GFDL, CCM, GISS); regional scenarios from specific model runs (HadCM3, PRECIS, ...); regional scenarios from either the STARDEX or PRUDENCE data bases; regional scenarios constructed by statistical methods from the output of global simulations. In a few cases, even analogue scenarios were used.
- Weaknesses: insufficient temporal and spatial resolution, making the use of downscaling techniques a necessity in many instances.

Q2: Which downscaling techniques (spatial and temporal) were used so far?

- Spatial downscaling via statistical procedures mostly by canonical correlation analysis (CCA) or multiple regression (MR). Application of GIS in a few cases (e.g. Poland);
- Dynamical downscaling with RCM used only in a few countries (e.g. Greece and Germany);
- Temporal downscaling with stochastic weather generators: LARS-WG, WETTREG, WeathGEN;
- Spatial resolution achieved in regional scenarios ranging from ~ 1 km x 1 km to ~ 50 km x 50 km.

Q3: Name which regional climate scenarios models (if any) were used so far

- RegCM2, RegCM3, RegCM25, RegCM50, REMO, ARPEGE, ALADDIN, BOLAM, PRECIS, RAMS, MM5, CHRM, PROMES.

Q4: Name which sea-level rise scenarios (if any) were used so far

- None.

Q5: Were there any attempts in your country to analyse the risk of weather and climate extremes?

- About half of the countries represented at the meeting had research done for assessing climate change impacts on the occurrence of: heat waves, dry spells and droughts; frost; wind storms.
- A detailed study (INFREX) as been conducted in France
- Two European projects have dealt with extremes in a changing climate: STARDEX (www.cru.uea.ac.uk/projects/stardex/) and MICE (www.cru.uea.ac.uk/projects/mice/)

Q6: Was your country involved in in EU PRUDENCE, ENSEMBLES or similar projects?

- Most countries were/are involved in at least one of the following projects: PRUDENCE (<http://prudence.dmi.dk/>); ENSEMBLES (<http://ensembles-eu.metoffice.com>); STARDEX; MICE; CECILIA (<http://www.cecilia-eu.org>); CLAVIER (<http://www.clavier-eu.org/clavier/>); ACCELERATES (<http://www.geo.ucl.ac.be/accelerates/>).

Q7: List main problems encountered in the generation of climate change scenarios in your country

- Specific problems: bias in GCM/RCM output; insufficient temporal/spatial resolution; unavailability of meteorological data; incorrect use of meteorological data; unavailability of uncertainty estimates; no standard set of downscaling techniques;
- Other technical problems: unavailability of economic/social scenarios needed to conduct regional impact studies;
- Structural problems: lack of human or technical resources; lack of regional organizations providing support with respect to data storage and supply, development of analysis techniques, ...

Q8: How can COST 734 (specifically WG3) help in addressing critical research needs in relation to the development and use of climate change scenarios?

- In view of the structural problems mentioned under Q7, COST 734 can provide a platform for the coordination of impact studies, and the definition of common scenarios and analysis approaches.

Report of COST 734 WG-4 meeting, Poznan, 21 May 2007

Participants: Jørgen E. Olesen, Mirek Trnka, Kurt Christian Kersebaum, Pirjo Peltonen-Sainio, Raimond Rötter, Jerzy Kozyne

Questionnaires

Questionnaires have been collected from 16 countries, but only 13 responses provide good information. An overview of the questionnaires suggest that more specific information needs to be collected within the following areas:

- Limitation of specific crops to present climate conditions
- Projected climate impacts (for 2050)
- Adaptation to climate change (for 2050)
- Observed adaptation
- Warning systems and decision support
- National adaptation strategy, awareness and dissemination

As far as possible these information should be specified for each of the crops considered in COST734 and for environmental regions within each country. The environmental division of Metzger will be used.

A revised questionnaire (in the form of a spreadsheet) will be circulated to COST734 participants, but only after comments to the spreadsheet from the WG4 partners. All WG4 partners should fill out the questionnaire during June and submit the result and comments for improvement on the questionnaire to Jørgen E. Olesen.

Future work plan

Completion of survey

The revised questionnaire will be distributed to COST734 partners in late June with request to submit the responses by mid-September. The questionnaires will be summarised in a paper during October and November for a COST734 report. This paper will form the basis for drafting a journal paper during spring 2008.

Model inter-comparison of adaptation options

There is large need to improve the understanding of adaptation to climate change. Much of the research on adaptation is based on results of simulation models. However, there is very little knowledge on the ability of models to properly simulate responses to adaptation options. Therefore the group agreed to set up a concerted effort to compare the ability of various crop models to simulate adaptation responses. This would be done for selected regions in Europe over the next 2-3 years. During the period up to and including the next meeting in autumn the following activities will be conducted concerning this issue:

- Overview of which models can and should be used for the intermodel comparison
- Description of regions, which can be used for studying the adaptation and for providing soil and climate data
- List of adaptation options, which and should be compared with the models

- A description of the methodology to be used for intermodel comparison of adaptation options



European Cooperation in the Field of Scientific and Technical Research

***COST Office Overview & News
and
Managing Your COST Action in 2007-8***

E. Paola de Rose

Science Officer

Earth Systems Science & Environmental Management
COST Office, Brussels

Annex 10

Financial plan for COST734 for Sept. 2007- June 2008.

Event	Date	Nb. of participants	Comment	Money
Expert meeting	4-5/10/2007	10	Action's members who come to EMS conf. with presentations on the topics related to 734. COST does not pay conference fee.	8000
MCM4	Autumn 2007	41*		35000
MCM5	Spring 2008	41*		35000
WGs/Core Group	Spring 2008	6	Possible extra WG/Core group meeting not connected to MCM5	5000
STSM	2007-2008	6		12000
Publication	Spring 2008	1		19000
Workshop support	Spring 2008	1	Larisa	3000
GASG				2000
Total				119000

*41 participants considered as there are 41 MC members at the moment.

Notice: 800 Euro calculated per event per person

Calibration and Verification of WOFOST simulation crop model
Results after STSM of Dr. V. Kazandjiev and V. Georgieva-Milanova, NIMH-BAS, Sofia
Bulgaria

Aim of the visit is to increase and elaborate knowledge applying the WOFOST model, part of the Crop Growth Monitoring System (CGMS) in Europe. In the process of training the applicants is expected to tune, calibrate and verify the WOFOST_model parameters connected with limiting factors such as water and nutrients, soil type, rain conditions, crop parameters etc.

In the last fifteen years more and more extreme values of temperatures and rainfalls as well as related hydro-thermal conditions have been observed. Droughts and floods in large regions of Europe are important and limitation factors for growth, development and yield formation of main crops. From this point of view different unfavorable weather conditions will be simulated and then the obtained results will be analyzed. An attempt for establishment of relationships between some climatic and hydro-thermal indices and the phenological development of winter wheat, barley, maize, sunflower and soybean will be done. The influence of sowing dates to the harvest results will be also investigated. Climate variability and climate change are important conditions for building of a new strategy for agriculture. In connection with this peculiarity climatic scenarios will be applied to various simulations analyzing their effects.

Subject of the investigation was next parameters of the WOFOST model

EFFTB	Initial light-use efficiency of CO ₂ assimilation of single leaves as function of daily temperature ((kg•ha ⁻¹ •hr ⁻¹)/(J•m ⁻² •s ⁻¹); °C).
TBASEM	Lower threshold temperature for emergence (°C).
TEFFMX	Maximum effective temperature for emergence (°C).
TDWI	Initial total crop dry weight (kg•ha ⁻¹).
TSUMEM	Thermal time from sowing to emergence (°C•d ⁻¹).
TSUM1	Thermal time from emergence to anthesis (°C•d ⁻¹).
TSUM2	Thermal time from anthesis to maturity (°C•d ⁻¹).

Main results

- Established a common research methodology and selected models and empirical relations for estimation of growth and drought impact on productivity of different agricultural crops in agriculture - both in Austria and Bulgaria;
- Get knowledge on available publications and related to agrometeorological forecasts and applications of simulation models and indices;
- Evaluated and adopted of research methods and approaches recommendations for structure of agricultural production and use agroclimatic and biological resources zoning preparing.

Future collaboration

Two partners achieve to understanding to continue joint research in the frame of bilateral scientific project with working title “**Agroclimatic Resources for Field Cultures Cultivation under Natural Conditions in Austria and Bulgaria**”.

Projected publications/articles

It is expected results from STSM to be published in few scientific papers/ publications