SPECIAL PROJECT INTERIM REPORT

Interim Reports should be 2 to 10 pages in length, depending on importance of the project. All the following mandatory information needs to be provided.

Reporting year 2015

Project Title: Land surface interaction and climate change over Africa by means of a coupled Regional climate Model to a biogeochemical land-surface scheme.

Computer Project Account: SPJRCFIR

Principal Investigator(s): Alessandro Dosio
Abdulla Sakalli

Affiliation: European Commission – DG Joint Research Centre,
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Name of ECMWF scientist(s) collaborating to the project (if applicable) ……

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Start date of the project: 2014

Expected end date: 2016

Computer resources allocated/used for the current year and the previous one (if applicable)

Please answer for all project resources

		Previous year		Current year	
		Allocated	Used	Allocated	Used
High Performance Computing Facility	(units)	300000	300000	400000	0 Expect to use full allocation
Data storage capacity	(Gbytes)	100	100	100	~40 Gb Expect to use full allocation

Summary of project objectives
(10 lines max)

The main objective of the project is to couple the regional model COSMO-CLM to the biogeophyscal land surface scheme CLM4.0 and to assess the performances of the new coupled model over Africa.
The main objective of the first phase of the project is the technical implementation of the models (both COSMO-CLM and CLM4.0) and the coupler OASIS.
In addition, before running climate simulations, a long spin-up needs to be run in order to get the biospheric carbon pools in in equilibrium.
Planned simulations include a 20 year evaluation run with perfect boundary conditions (ERA-Interim) over the period 1989-2008, following the CORDEX guidelines.
Focus will be on the analysis of the differences between the new coupled model and the standard COSMO-CLM, on the reproduction of the present African climate.

Summary of problems encountered (if any)
(20 lines max)

The main problem encountered this year was the porting of the code on the new Cray machine.
Despite many tests have been run in order to find the optimal configuration in terms of nodes/memory, the code does not run properly and stops with an 'out of memory' error code, which has never been a problem on the older IBM.
This issue needs to be investigated further; however, due to the lack of human resources (as Abdulla Sakalli left the JRC), no further runs have been run in the last months.
Due to this serious issue, the planned work has substantially delayed and the future work had to be reschedule/rethought.

Summary of results of the current year (from July of previous year to June of current year)

See point above (problems encountered)

List of publications/reports from the project with complete references

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Summary of plans for the continuation of the project
(10 lines max)

Planned runs and validation:

We plan to use the allocated SBUs to fully implement CCLM and CLM4.0 on the new Cray, solving the compilation and running problems encountered so far.
This will necessarily include a series of tests by running both codes separately, first.
The coupler interface OASIS needs to be ported and compiled on the Cray, still.
Plans include the completion of the tests and the running of a working version of the full CCLM-OASIS-CLM chain within the end of 2015.
2016 will be then used for production runs.