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# **ADAPTED CGMS MODEL FOR ANHUI**

**Reference:** *E-AGRI\_D23.3\_Adapted\_CGMS\_model*

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## DOCUMENT CONTROL

### Signatures

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### Change record

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|---------|------------|-------|-----------------------------------------------------------------------|-----------------------|
| 1.0     | 21/03/2014 | 4     |                                                                       |                       |
| 2.0     | 09/04/2014 | 4     | Added some notes and reflection for further development of CGMS Anhui |                       |

## EXECUTIVE SUMMARY

This document has been provided as a replacement for the actual adapted CGMS model for Anhui. The CGMS Anhui processing comprises several executables, databases and scripts and it is not possible to upload (an export of) this system on the EC Research Participant Portal. This PDF is uploaded instead. A full description of the adapted CGMS model for Anhui can be found in the deliverable D24.1\_CGMS\_piloting\_report\_Anhui. Moreover, different components of the system and its adaptations have already been in several other deliverables including D23.1, D23.2 and D23.4.

The CGMS processing chain has been successfully implemented in Anhui, however it was demonstrated that the performance for yield forecasting was low. Therefore, several improvements to the CGMS Anhui suggested that were not carried out in E-Agri because our focus was on solving the difficulties that were existing with the implementation of the basic CGMS processing chain in Anhui.

First of all, given the results presented in the deliverable D23.2, more attention could have been given to the integration of meteorological indicators into the CGMS Statistical Toolbox for direct yield prediction. The results presented in D23.2 demonstrated a strong impact of frost and humid rainy weather, indicators representing these phenomena could be added to the CST. This could also compensate for the fact that yield variability in Anhui is probably driven by factors (disease) that are not included in the crop biophysical simulations of CGMS. Fortunately, this is still possible and can be realized by partner AIFER with relatively little effort.

Second, results from calibration of WOFOST demonstrate that the results are not yet satisfactory. Particularly the yield level in Anhui is still underestimated by WOFOST. Additional attention should be paid to the calibration of WOFOST for Anhui, particularly looking at the partitioning function to storage organs. This will require an additional calibration effort and possible collection of new data for recent wheat cultivars in Anhui.

Finally, as remote sensing based approach gave very good results, it is worthwhile to investigate the wheat growth patterns as derived from satellite time-series to identify the inter-annual variability and its causes. This could provide important clues on processes that are missing in CGMS. Additionally, the satellite time-series could be integrated into CGMS for adjustment of the simulations during the growing season.