FAO AgroMetShell – Context and Perspectives

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Since 1976 FAO has been involved in crop monitoring and crop forecasting for food security. Resulting from now 30 years of experience AgroMetShell (AMS) transforms pure meteorological observations into value-added indices (like the Water Satisfaction Index, WSI) for crop yield forecasting. Its kernel is a crop specific soil water balance model. This model has to fulfil several constraints to meet the requirements and demands of a wide range of users in different countries and climates. Therefore AMS must be applicable even with limited data of poor quality. AMS is a regional crop forecasting toolbox applied mostly in developing countries: it is normally applied over large administrative units, it is inexpensive to implement and to adapt to local conditions.

About the context in which AMS was developed, it is stressed that national crop-yield forecasts are of crucial importance for food security in countries with limited infrastructure and low national buffer food stocks. In order to strengthen the national capacity in planning food security issue, AMS is now part of the Crop Monitoring Box (CM Box) which includes not only additional FAO tools (like New_LocClim and WinDisp) but also remote on-line support, training, and input and auxiliary data. The CM Box is therefore a nationalized version of AMS. It is customized by national staff itself during an intensive training phase. In this way, AMS becomes a tool for capacity building within the countries. It constitutes a central part of the chain of information processing that leads from data gathering to the decision makers.

Current perspectives focus mainly on two issues: (1) since AMS is a user-friendly software it is an ideal tool for the investigation of the effect of possible future climate changes. With the help of a random weather generator (RWG), ensembles of weather records can be generated which are meeting a changed climate state. AMS can be driven with these ensembles in order to investigate how the probability density function of crop yields is affected by a changed climate. (2) as with other FAO software, the current philosophy is to strengthen internal (FAO-wide) and external compatibility with other software tools by the adoption of common file standards and of open-source and multi-platform approaches. This is a long-term and sometimes painful effort, but it is the price of long-term sustainability in an diverse international development environment.