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Assessment and limits of the existent seasonal forecasts as support for the decision making process in the Sahel

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The economy of West Africa sahelian countries is based on the primary sector and the population's food security is strictly linked to rainfed crops production. The sahelian countries constitute a belt from Senegal to Chad characterized by an unimodal rainfall distribution during the summer months. The rainfall spatial and time distribution are very variable: dry spells and shifts in the rainy season onset are very frequent. The famines that stroke the region in the past demonstrate that in these ecosystems drought represents a key factor for the food security. In particular, anomalies in precipitation amount and distribution represent the major cause of losses in rainfed agriculture.
The early availability of information on the development of the rainy season is essential for decision makers to assess the level of risk in terms of spatial extension and intensity, to take consequent decision on the mobilization of national/international stocks and to provide information for farmers orienting their choices for risk reduction. Addressing these needs, since late 90's the scientific community begins to develop long term meteorological forecast models. Nowadays, despite the general awareness on their potential role in food crises prevention, seasonal forecasts are still under exploited at regional/national level. Indeed, the major constraints to their operational use are (i) the reduced skill in intercepting key aspects of the agricultural season such as starting and ending date and presence of dry spells, and (ii) the difficulty of decision makers of understanding and consequently handling the level of uncertainty of the predictive information.
Today the growing demand for early information to support decision-making requires an improvement in the suitability of seasonal forecasts and in their tailoring to users.
The aim of this paper is contributing to the scientific debate on Seasonal Forecast proposing possible orientations for models further development and the production of new outputs translating climate forecast in impact forecast.
The paper provides an assessment of the existing seasonal forecast products available for West African and highlighting the relevance of information for decision-making process. Moreover, it underlines the actual limits of the seasonal forecast products and the improvements needed to achieve more useful information for the end-user.
The operational framework is the Food Crises Prevention Calendar (CPC) , which characterizes the crisis level in order to identify the appropriate information for decision makers in terms of timing, content and format. The study intend to differentiate Regional and National needs, evidencing that working at different scales is not only a resolution problem.