Establishing a wildland fire early warning system at National Level in Bolivia

Paolo Fiorucci[1*], Mirko D'Andrea[1], Alessandro Masoero[1], Lauro Rossi[1], Santos Quispe[2], Leo Erick Pereyra Rodriguez[3], Susan Cinthia Donaire[4], Davide Bocchi[5], Oscar Mendoza[5], Sergio Ledezma[5]

ABSTRACT – FAO Bolivia in collaboration with Fondazione CIMA is carrying out an initiative, funded by Italian Ministry of Foreign Affairs (MAE), aimed at strengthening the technical and operational Risk Management capacities of Bolivian Institutions involved in DRM, at national and local level (Departmental, Municipalities and Communities), in addition to implementing actions to promote families, communities and municipalities resilience to protect agricultural production and thus food security. The technical-scientific component of this initiative is based on the development of tools and the strengthening of involved institutions capacities with the aim of a better understanding of impact scenarios. The ultimate objective is to allow decision-makers to take informed actions, based on increasingly accurate data. In this framework, the extension of forecasting capabilities of the National Early Warning System, until today mainly focused on hydro-meteorological risk, has been extended to wildland fire. To this end the RISICO model, operationally used by the Italian Civil Protection Department since 2003, has been implemented in Bolivia using high resolution up to date land use land cover maps and integrated into the existing DEWETRA platform for the use of national institutions in charge of monitoring and warning. The model receives daily in input the 3h meteorological forecasts of rainfall, air temperature, relative humidity, wind speed and direction, provided by the operational WRF model (10km resolution) in use at SENAMHI, implemented locally for Bolivia in 2013 by CIMA in the framework of a FAO project funded by MAE. In addition, the model is fed by the WRF model provided by CPTEC. Because of the objective of the project is to strengthen the technical and operational Risk Management capacities of Bolivian Institutions involved in DRM, a great effort has been dedicated to make the DEWETRA platform interoperable with the already existing platforms mainly dedicated to monitoring hot spot and burned areas from remote sensing. A wildland fire danger bulletin will be issued daily during the incoming dry season. The results of the first testing phase will be presented starting from the issue of the bulletin from VIDECI to the local communication of alerts and the regulation of agricultural burning.

Keywords: Wildfire risk forecasting, early warning system, wildfire risk alerts, fire danger index, fire prevention

[1]Fondazione CIMA (Cima Research Foundation), Savona, Italy; [2]Viceministerio de Defensa Civil, La Paz, Bolivia; [3]Servicio Nacional de Meteorologia e Hidrologia, La Paz, Bolivia; [4]Dirección General de Gestión y Desarrollo Forestal (MMAyA), La Paz, Bolivia; [5]FAO Bolivia, La Paz, Bolivia.
*Corresponding author: paolo.fiorucci@cimafoundation.org