Mexico is the center of origin and diversity of maize (Zea mays L.) and its wild relatives. That country is the 5th producer in the world for this crop, but it is the 2nd largest importer of this grain. New technologies are available that potentially could help or protect to increase yield such as Genetically Modified Maize. Recently the Mexican Regulatory agencies initiate the implementation of the Biosafety Law establishing the process and procedures to move GM maize through the regulatory process towards commercialization in certain regions in Mexico. The aim of this study was to update the actual and potential distribution of Mexican landraces of maize and to generate a dynamic map to identify the current geographical distribution of maize races and their potential areas of distribution. A database of 24,146 cultivated maize accessions belonging to 59 races and 1,106 accessions of wild relatives was compiled from different sources and it also included geographic data. To generate the maize distribution layer, the data information was loaded into a Geographic Information System and modulation programs. In addition, several layers of interest (production systems, land use, vegetation types, climate database, etc.) were added; the superposition of those layers with the maize distribution allowed a dynamic interaction among the components, which we name "Dynamic Map". This map allows: a) the generation of plans for directed collection of under-represented races in gene banks, b) the identification of genetic richness areas of landraces, c) the prediction of changes in climatic conditions through time in areas where particular races or species are currently present and d) the support in the definition of potential areas for GM maize with minimum or no interference with native races.

Keywords: Maize, Dynamic map, Maize distribution, Regulation of GMOs