



Rice crop risk map in Babahoyo canton (Ecuador)

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It is widely known that extreme climatic phenomena occur with more intensity and frequency. This fact has put more pressure over farming, making agricultural and livestock production riskier. In order to reduce hazards and economic losses that could jeopardize farmer's incomes and even its business continuity, it is very important to implement agriculture risk management plans by governments and institutions.

One of the main strategies is transfer risk by agriculture insurance. Agriculture insurance based in indexes has a significant growth in the last decade. And consist in a comparison between measured index values with a defined threshold that triggers damage losses. However, based index insurance could not be based on an isolated measurement. It is necessary to be integrated in a complete monitoring system that uses many sources of information and tools. For example, index influence areas, crop production risk maps, crop yields, claim statistics, and so on.

Crop production risk is related with yield variation of crops and livestock, due to weather, pests, diseases, and other factors that affect both the quantity and quality of commodities produced. This is the risk which farmers invest more time managing, and it is completely under their control. The aim of this study is generate a crop risk map of rice that can provide risk manager important information about the status of crop facing production risks. Then, based on this information, it will be possible to make best decisions to deal with production risk.

The rice crop risk map was generated qualifying a 1:25000 scale soil and climatic map of Babahoyo canton, which is located in coast region of Ecuador, where rice is one of the main crops.

The methodology to obtain crop risk map starts by establishing rice crop requirements and indentifying the risks associated with this crop. A second step is to evaluate soil and climatic conditions of the study area related to optimal crop requirements. Based on it, we can determinate which level of rice crop requirement is met. Finally we have established rice crop zones classified as: suitable, moderate suitable, marginal suitable and unsuitable.

Several methods have been used to estimate the degree with which crop requirements are satisfied, pondering weights of limiting factors to adequate crop conditions. Better conditions for cropping in a specific area imply less risk in production. In this case, crop will be less affected by pests and disease, although this closely depends on crop management. Farmers have to invest less money to produce and could increase their benefit.

Results are showed and discussed with the aim to study the efficiency and potential of this risk map.