

# The characterization of the food insecurity risk through the vulnerability assessment in Republic of Niger

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## The concept of food insecurity

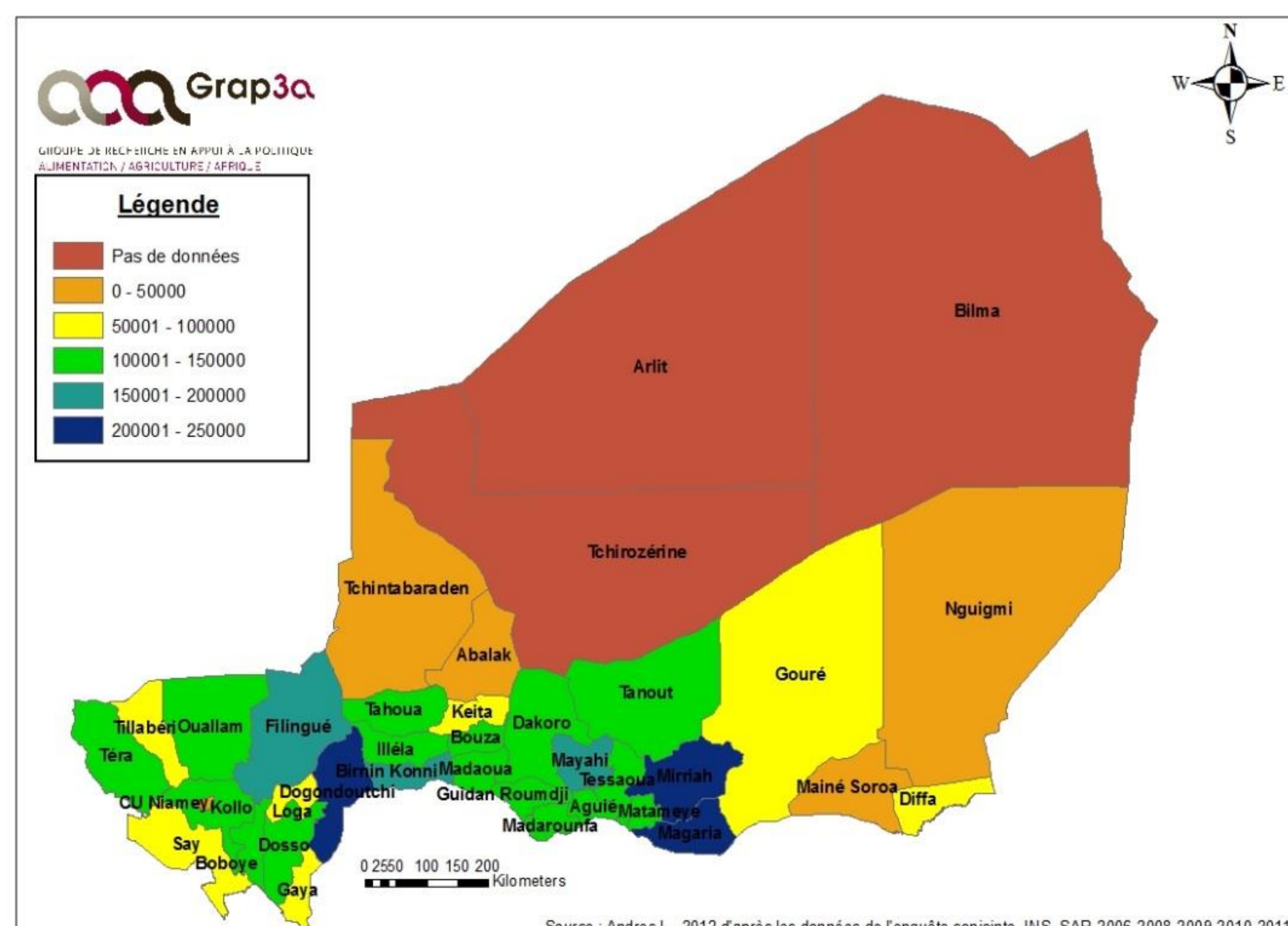
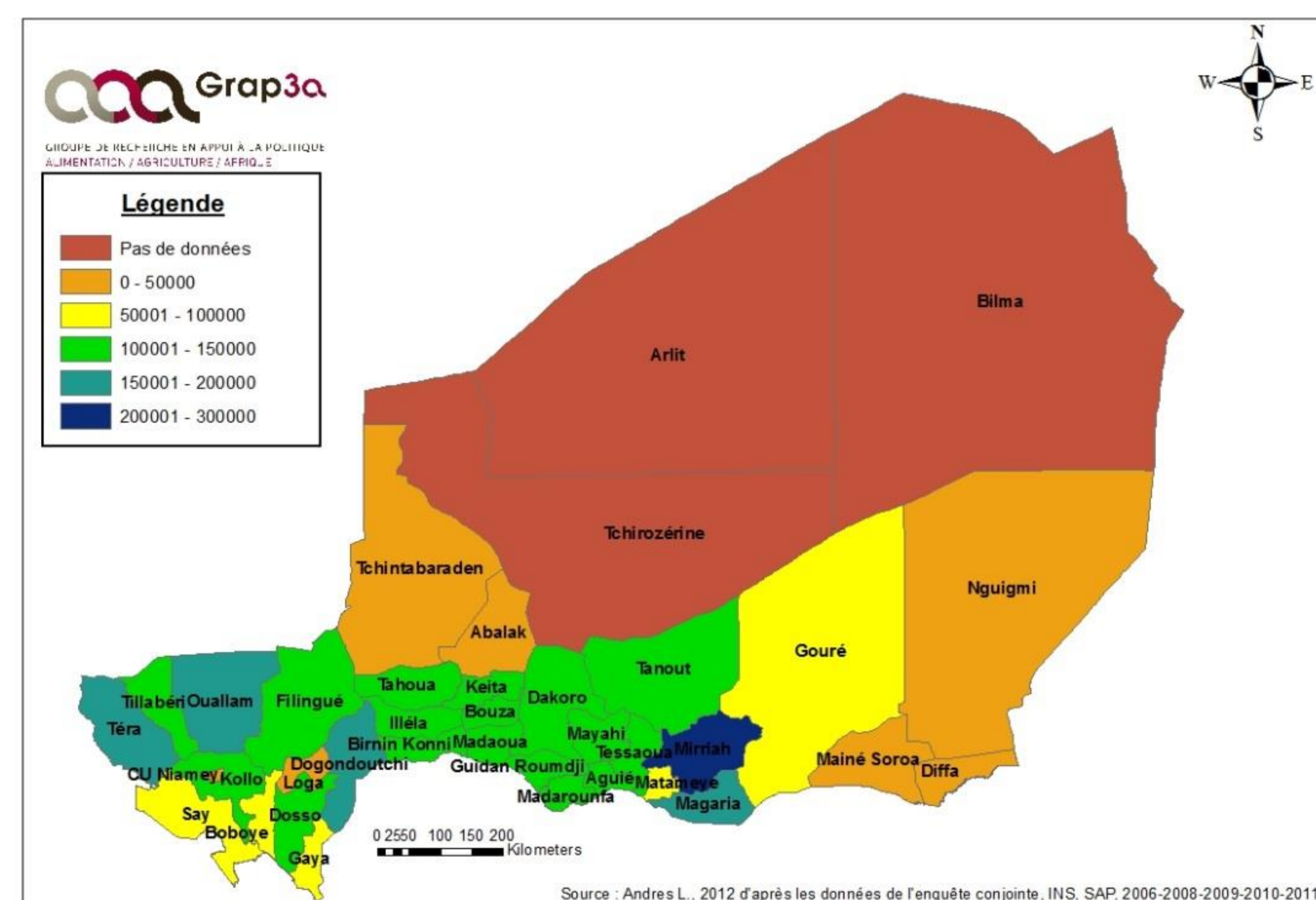
The food insecurity is defined as the incapacity to resist at some disruptions. It is not enough to consider the people in a state of food insecurity, but he must take into account people who may fall in this food insecurity (risk). The food vulnerability has been introduced to characterize the risk that a population was in the incapability to fight against of structural or/and cyclical disruption. Since 2006, the EAS and the INS lead an annual investigation to estimate the number of people suffering from the food insecurity. The food insecure population is classified in four groups: the population in a state of severe food insecurity; the population in a state of moderate food insecurity; the population at risk; the population in state of food security. The originality of this survey is based on the assessment of economics access of households and the coping strategies that the households develop to fight against the food insecurity. This paper describes a new methodology to classify the food insecurity of a population at the departments of Republic of Niger. The target of this study is to illustrate an original approach who characterizes the state of food insecurity in Niger's population. It answers at the following questions: What are the most vulnerable departments of Republic of Niger and what is the link between the population in a state of food insecurity and the population at risk to fall in this insecurity?

## Material and method

This paper is developed as from of the results of five investigations realized between 2006 and 2011. The mean is calculated from the number of people in state of food insecurity between 2006 and 2011. The investigations of the household are based from the database of the population census of 2001. This population census has determined of the "enumeration areas". These "enumeration areas" are defined as a "geographical area of 200 households on average" (INS, 2007). The state of food insecurity is obtained while calculating a principal component analysis (PCA) of several variables. The principal variables used to estimate the food insecurity are the following: food consumption score; the proportion of food expenditure in total expenditure; the duration of stocks; the livestock ownership expressed in tropical livestock unit; the index survival strategy (Andres L. and Lebailly Ph., 2011)

## Result and discussion

The most vulnerable departments are Mirriah, Magaria, Dogondoutchi, Ouallam and Tera. The population at risk is higher in three departments: Magaria, Mirriah and Dogondoutchi. Furthermore, the same departments (Mirriah, Dogondoutchi, ...) have a high food insecurity and a high risk for than their population fall in this insecurity. The correlation between the population in a state of severe and moderate food insecurity and the population at risk to fall in the insecurity is very highly significant and demonstrates the link between these two groups. The correlation is estimated with Pearson method at 0,803.



## Conclusion

Mirriah has the highest number of people in food insecurity in function of the rest of the Niger. The analysis demonstrates that the departments of the region of Tillabéri, Maradi and Tahoua are the most vulnerable in function of the food accessibility. These departments are located in agricultural and agro-pastoral areas and located in the middle and south-western of the Niger. The illustration of the people in a state of food insecurity is not complete because the departments of the region of Agadez (Arlit, Tchirozérine, and Bilma) aren't assessed. The non-assessment of the state of food insecurity in the Agadez departments creates a false opinion of the food insecurity per department. But the population and density of their departments are weak and the causes of the food insecurity is very different between the three departments of Agadez and the rest of Niger.