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The coping strategies to fight against the food insecurity in the Republic of Niger

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Summary

During the last decade, the Niger's population has been affected by the food crisis (2001, 2004-2005, 2008, 2010-2011). Each year, she is subjected to many structural and temporary shocks. The structural shocks are caused by the chronicle difficulties (income) while the temporary shocks are tied at the "natural" disasters such as the hydrometeorological disasters, demographic crisis. The risk that the people fall in a state of food insecurity because of structural and temporary shocks is characterized by food vulnerability. The food vulnerability is defined as "the analysis of coping strategies and reactions faced with the structural or/and temporary shocks, if the coping strategies are not effectives, the people have in a temporary or structural food vulnerability" (Andres L. and Lebailly Ph., 2011). The target of this paper is to demonstrate the diversity of coping strategies in the different departments of Niger. The database is created as from an annual survey realized by the Early Alert System (EAS) and the Statistical National Institute of Niger (INS). This survey characterizes the state of food insecurity of households of Niger. The investigations of the household are based on stratified sampling. It exists two levels: region and enumeration areas. The investigations of the household are based from the database of the population census of 2001. This population census has determined the "enumeration areas". These "enumeration areas" are defined as a "geographical area of 200 households on average" (INS, 2007). The sample of this investigation is established from a significant sample a point of view of the departments of Niger. The time period studied is spread the 2008 at 2011. The results have demonstrated that the departments of Tchintarabaden, Abalak, Tessaoua and Magaria have weakest number of collective meals, and the highest percentage of household practicing of selling the goods and land. Furthermore, the Niger's population develops many strategies to struggle against the shocks.

Keywords: coping strategy, food vulnerability, Niger.

JEL Classification codes: D81

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1. INTRODUCTION

Since several decades, the Niger is a country who suffers of the food insecurity. Indeed, during the last decade, there was some food crisis: 2000-2001; 2004-2005; 2008-2009; 2010-2011. Furthermore, the recurrence of the crisis increases until two or three per year (Yayé A.D., Boureima A.G., 2006). The causes of the food insecurity are multiple and depend on structural and temporal characters of the shocks. The structural and temporal characters of the food insecurity are determined by the type of shocks. The structural shocks are caused by the chronicle difficulties (income, unfavorable environment ...) while the temporary shocks are tied at the "natural" disasters such as the hydrometeorological disasters, agricultural enemies, and demographic crisis. The risk that the people fall in a state of food insecurity because of structural and temporary shocks is characterized by food vulnerability. The food vulnerability is defined as "the analysis of coping strategies and reactions faced with the structural or/and temporary shocks, if the coping strategies are not effectives, the people are in a temporary or structural situation of food vulnerability" (Andres L., Lebailly Ph., 2011a; Andres L., Lebailly Ph., 2011b; Andres L., 2012). A large revue of literature over the coping strategies has identified three types of coping strategies: the insurance or reversible strategies (number of meal, migration); the crisis or irreversible strategies (selling production goods, selling the reproductive cattle); the distress or "exhaustion" strategies (selling land, migration of household, selling cattle, informal) (Maxwell D.M., 1996).

2. METHOD AND MATERIAL

The database is created as from an annual survey realized by the Early Alert System (EAS) and the Statistical National Institute of Niger (INS). This survey characterizes the state of food insecurity of households of Niger. The investigations of the household are based on stratified sampling. It exists two levels: region and enumeration areas. The investigations of the household are based from the database of the population census of 2001. This population census has determined the "enumeration areas". These "enumeration areas" are defined as a "geographical area of 200 households on average" (INS, 2007). The number of household of the investigation varies each year between 5.000 and 10.000 households. The sample of this investigation is established from a significant sample a point of view of the departments of Niger. The time period studied is spread the 2008 at 2011, either four years (Andres L., Lebailly Ph., 2011a, Andres L., Lebailly Ph., 2011b; Andres L., 2012).

The three types of coping strategies (insurance or reversible strategies; the crisis or irreversible strategies; the distress or "exhaustion" strategies) are illustrated per one coping strategy per class. The reversible strategies are represented by the number of collective meals in the household. The irreversible strategies are illustrated by number of household who practice selling the production goods. While, the distress strategies are defined by the percentage of household who practice selling the land. The average of number of collective meals per household is calculated per department in function of the survey realized in

2008, 2009, 2010 and 2011. On the other hand, the selling production good and land show the percentage of households in sample that experienced the both strategies. This classification in three groups of strategies is defined from the concept of resilience. Indeed, the resilience is “the capacity to resist hazard or shocks” (Dauphiné A. and Provitolo D., 2007). This capacity of the population to struggle against the shocks is characterized by the intensity of the people’s answers. Per example, the percentage of household practicing the selling production goods degrades irreversibly the capacity to struggle against the shocks. Whereas, the reduction of the number of collective meals is a temporal measure that can come back at a “normal situation”.

The results presented are calculated with the SPSS software and the figures are illustrated with ARCGIS software. The statistical results are average of the number of collective meals, frequency of the households selling production goods and land. A correlation with the three types of coping strategies is calculated from the Pearson test. Finally, the paper presents many limits and the most important is about the data of the survey because the statistical and the data collect are wrong and sometimes the data is not significant. The limits are methodological and depend on the human factor. The training of the investigator is very important and the setting up of the database can introduce some mistake. But this survey is the only method to characterize the food vulnerability and the resilience of the Niger's households. Furthermore, this study is supported and paid for many international institutions such as the food and agricultural organization, UNICEF, FEWSNET. This support accentuates the quality of the results even if the bias is always possible. In conclusion, the results presented illustrate the behavior of the Niger’s people compared to the coping strategies and temporal and chronicle shocks but the results aren’t the only truth.

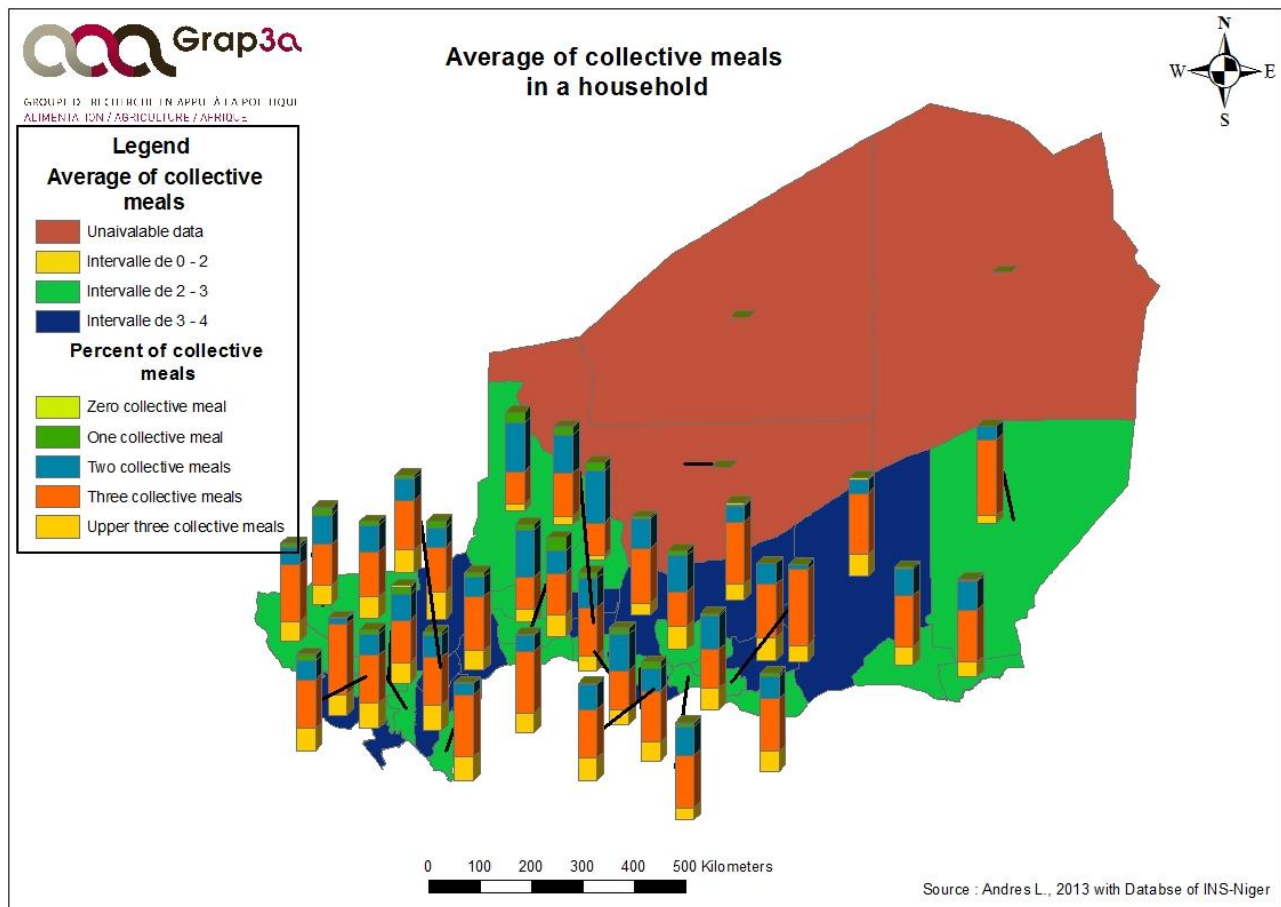
3. RESULT AND DISCUSSION

The results are presented in function of the three types of coping strategies. The first coping strategy (collective meals) represents the reversible strategy. This strategy is a minor strategy because the household can return quickly at a “normal situation”. The analysis of the average of collective meals in the Niger’s household isn’t possible for the three departments of Agadez (Arlit, Bilma and Tchirozérine). This unavailable data doesn’t show a global picture of the different strategies to struggle against of the food insecurity.

The collective meals of the population of the departments of Tahoua (Abalak, Madaoua, Tchintarabaden, Birnin Konni, Tahoua, and Illéla) are weaker than the rest of the departments of Niger. However, some departments (Tessaoua, Magaria, Mayahi, Kollo, Boboye, Mainé Soroa, and Tillabéri) present a similar data with the department of Tahoua. On the other hand, five departments (Say, Gouré, Dogondoutchi, Mirriah, and Tanout) have an average of collective meals higher than the other departments. Finally, the area along the Niger River (Tera, Niamey, Dosso, Kollo, Say, Gay) has a percentage of collective meals per household upper three. The percentage of household who has three collective meals or more is spread between 64 per cent and 93 per cent (Figure 1).

Figure 1: The average of number of collective meals per household

Source : Andres L., 2013 according to INS-Niger, database of the survey between 2008 and 2011

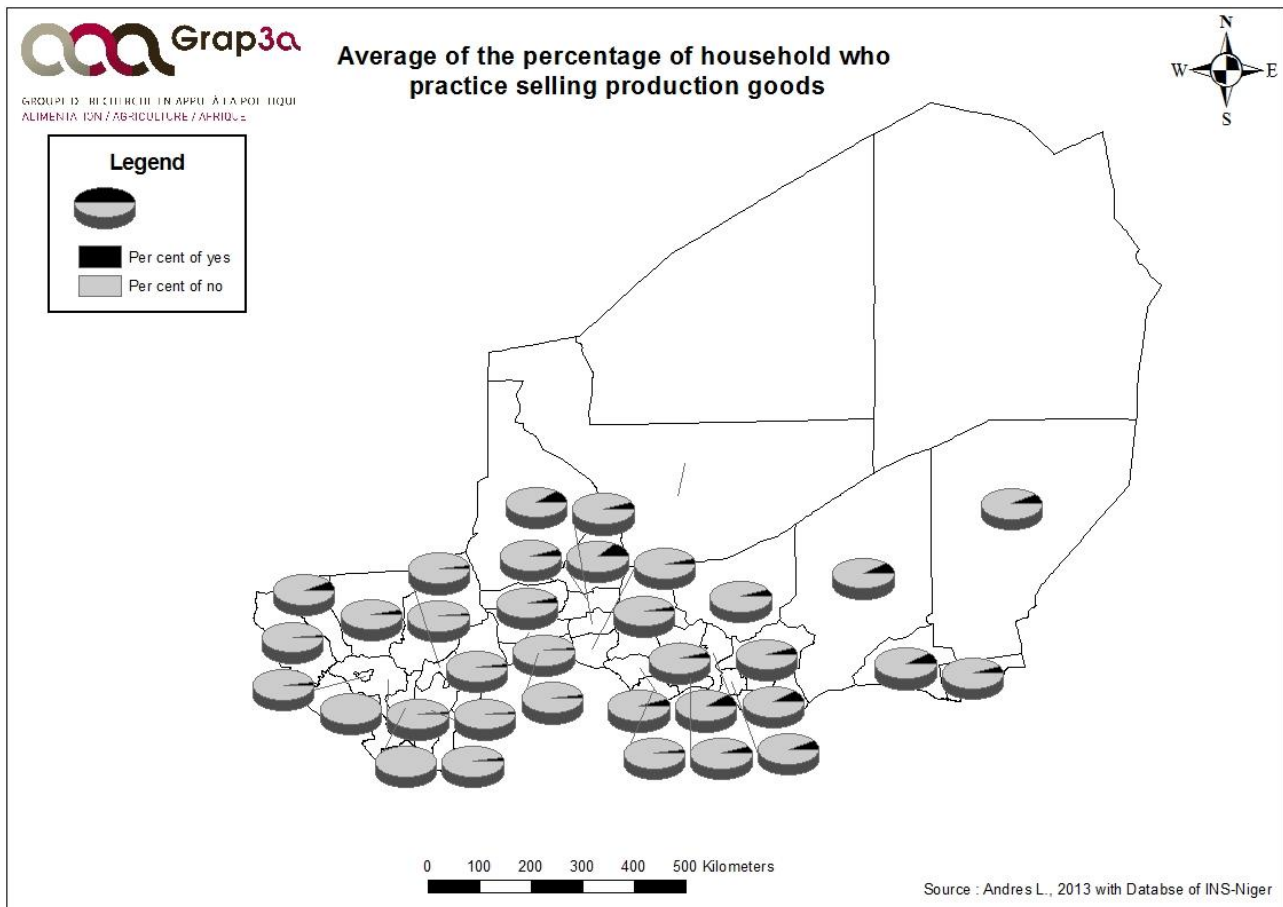


The average of collective meals is equal to 3 but it is very important to indicate that there is an inequality within the Niger's households. Indeed, a study of Diarra M. and Monimart M. (2006) indicates that it exists much inequality inside a household. The children haven't access at all collective meal. If the food is insufficient, the children are the first to suffer of the reduction of the collective meals. Furthermore, the women should take care of the preparation of the meals. For some women, the preparation of the collective meals is very difficult because they haven't access to food reserve of their husbands (Diarra M. and Monimart M., 2006).

The second class of coping strategy is characterized by selling production goods. It leads to irreversible damage than the Niger's households cannot come back at a "normal situation". The average percentage of household who practice the irreversible coping strategy doesn't exceed ten per cent of the household. The national average is equal to five per cent and the standard deviation is equal to three per cent. As the first coping strategy, the average percentage of households who practice selling production goods is higher in the department of Abalak (13%), Tchintarabaden (11%), Tessaoua and Magaria (10%). This coping strategy isn't used in the department of Say and very little used in the department of Boboye. Nevertheless, the Eastern (region of Diffa) and the middle department (region of Zinder and Maradi) present a percentage upper at the south-west departments. Indeed, the departments along the Niger River in exception of Tillabéri (Téra, Niamey, Kollo, Say, and Boboye) present a weakly percentage. They have two per cent or less of the households using this coping strategy (Figure 2).

Figure 2: Percentage of households who practice selling production goods

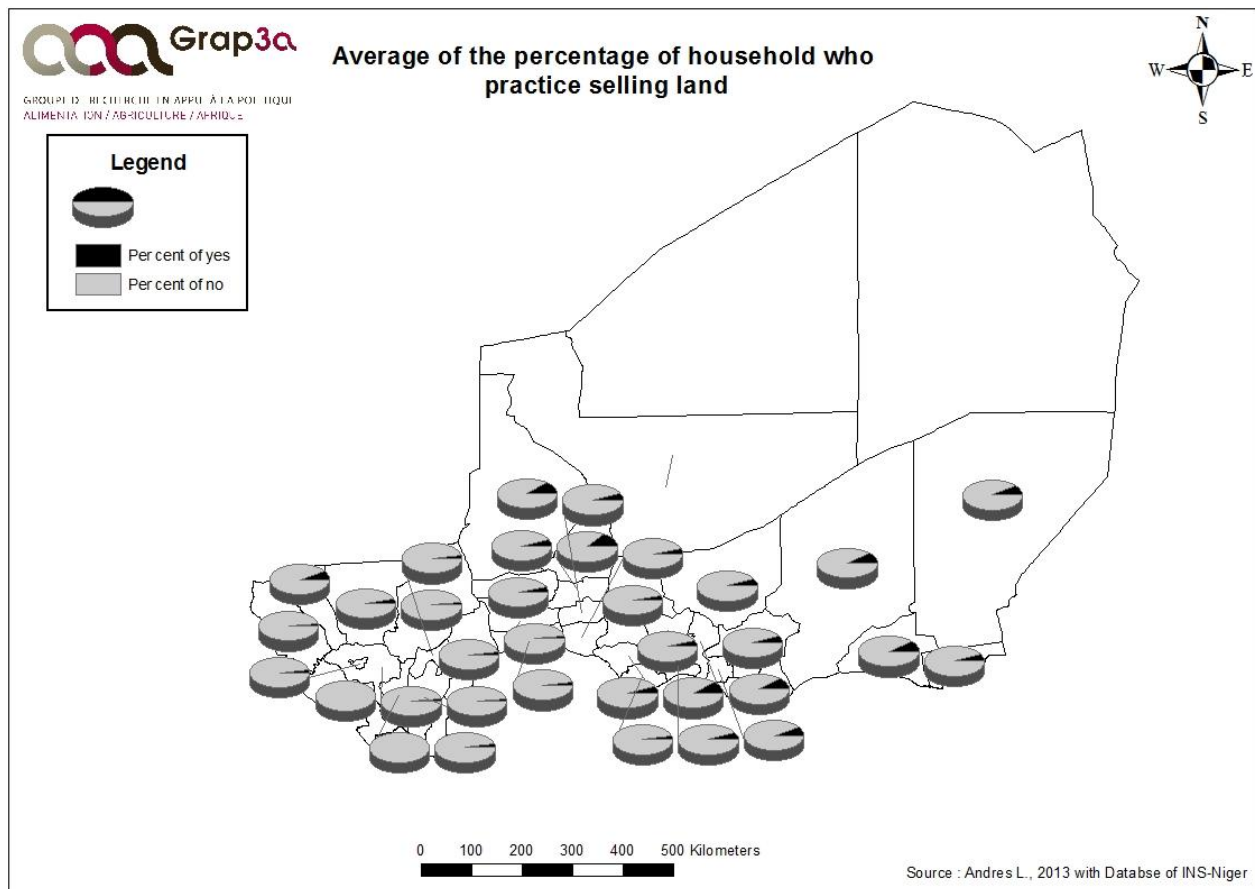
Source : Andres L., 2013 according to INS-Niger, database of the survey between 2008 and 2011



Finally, the distress strategy is characterized by selling land. The selling land is the strategy used as a last resort. This coping strategy leads a major exodus of the same household. The average is very weakly. Indeed, only 2% of the Niger's households practice the selling land. Furthermore, the variation is higher for the percentage of households who practice the selling land. The standard deviation is higher (2%) because the minimum and the maximum are equal to 0% in the department of Say and 8% in the department of Illela. The average percentage of households who practice the selling land is highest for the department of Illela (8%), Matameye (5%), Tessaoua (4%), Guidan Roumdji (4%), and Keita (4%). In the other hand, seven departments present a percentage equal to 0%, it is: Ouallam, Kollo, Tera, Dosso, Loga, Boboye, Say. These departments are generally located along the Niger River (Figure 3).

Figure 3: Percentage of households who practice selling land

Source : Andres L., 2013 according to INS-Niger, database of the survey between 2008 and 2011

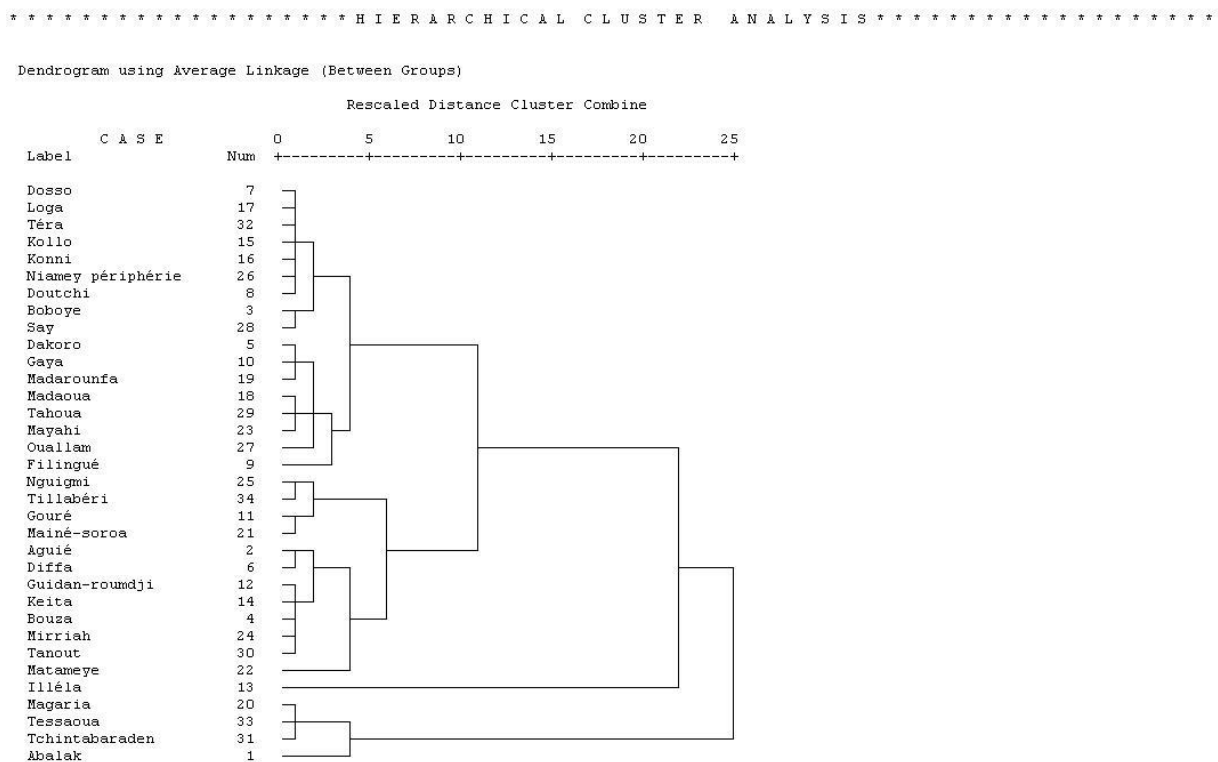


There is not any correlation in exception of the correlation between the first coping strategy (reversible) and the second strategy (irreversible). This correlation is significant with a correlation equal to -0.417. The relation between the two strategies is inversely proportional i.e. than if the number of collective meal decreases the percentage of the households who selling production goods increases. The intensification of food crisis increases the food vulnerability and leads to a new behaviour and the practice of the irreversible strategies.

The hierarchization confirms the illustration of the coping strategies with the help of one strategy per class. Indeed, the departments of Abalak, Tchintarabaden, Tessaoua, Magaria, and Illela practice many strategies and have a highest percentage of households who use selling production goods and land. Whereas, the group presenting the weakest rate of the three strategies is composed by Dosso, Loga, Tera, Kollo, Birnin Konni, Niamey, Boboye, and Say (Figure 4).

Figure 4: Hierarchization of the department in function of the three coping strategies

Source : Andres L., 2013 according to INS-Niger, database of the survey between 2008 and 2011:



4. CONCLUSIONS

In conclusion, the result and the discussion demonstrate that the coping strategies are multiple and complex for the Niger's households. Each strategy per class has illustrated the disparity between the departments of Niger. Indeed, the results have showed that the departments of the region of Tahoua use many strategies and present a high percentage. The households of Illéla practice the selling land even though the other departments present weak results. The departments along the Niger River, in exception of the department of Tillabéri, present the weakest percentages and the highest number of collective meals than the other departments. In relation to the resilience, the departments of Tahoua practice more coping strategies than the other but they practice irreversible and distress coping strategies. However, the irreversible and distress coping strategies indicate that the insecurity is very high in the department of Tahoua. The question of the diversity of coping strategies should do the purpose of a study with the other strategies (food loan, consumption of less favourite food, consumption of shortfall food, request near to family or other household, selling non-production goods, exodus of a part of household or the all members of household, selling reproduction cattle, remove the children of the school, etc.).

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