

Multifunctionality of the Fish Industry in Tillabéri's Municipality

Hassoumi DJIBO

Docteur en socio-économie du développement, Maitre-Assistant, Enseignant chercheur à l'université Boubacar BA de Tillabéri/Niger

Correspondence Author: dhassoumi@yahoo.fr

Accepted 2018-07-20, Published 2018-09-02

Abstract:

The objective of this study is to show the multi-functionality of the Tillabéri fish industry. Known as a network of social integration, the fish industry plays an economic and food role for the key players. The marketing of fresh fish consisted of two medium circuits (simple average circuit and integrated average circuit). However, this activity, carried out by different categories of people faces enormous problems. The research hypothesis is to consider the fish business as a tool for local development. This study was undertaken through a survey of the various activities covering the marketing chain. Therefore, given the complexity of this study, we divided it into three phases: the first phase consists in identifying the actors who constitute the pillar of the chain. The second phase was devoted to bibliographic research. As for the third phase, it corresponds to the actual survey, that is to say the elaboration of the questionnaire, the collection and the processing of the data.

Key Words: chain, marketing, multifunctionality, channels, city, Tillabéri

Introduction

Tillabéri is a town in northwest Niger. It is located in the heart of Sakoiria Township and 113 km northwest of the capital Niamey on the River Niger. It is capital of the department of Tillabéri and Tillabéri Region. Our present study focused on this part of Niger where we are trying to study the fish sector defined as a succession of economic activities carried out by people of different categories, in order to develop the fishing industry and the marketing of fresh fish. This sector is composed of different networks, formed by groups of homogeneous actors. Therefore, we will present the methodology applied to the study, the results obtained and discuss our results with previous studies.

Problematic:

In Niger, the fishery resources are mainly concentrated in the Niger River and its tributaries, such as Komadougou Yobé, Lake Chad and some ponds. However, for more than a decade, fishing has been conducted everywhere, due to the construction of sixty-nine (69) artificial reservoirs of water and mini hydropower plants. The actual area of surface water is now estimated at four hundred thousand (400,000) hectares and the annual production of fish at twenty-five thousand (25,000) tons (Adamou

SALISSOU, 2013). Fishing is a source of income and contributes in the employment of nearly five hundred thousand (500,000) people, including fishers, fishmongers and processors. As for Tillabéri region, the fishing activity constitutes a sub-sector and provide a large number of resources for the actors involved. However, the annual production of fish varies in time and space. It increases from 435 tons in 2013 to 607 tons in 2014 and falls to 203 tons in 2015 (DSCN / ME / DRE / Ti, 2018). Climate change and weather fluctuations could have explained the variation in fish production. The Niger River, which is now the main watercourse in the region, is facing severe silting and a rapid recession, thus reducing the quantity of fish. However, it should be mentioned that humans are very likely at the center of this climate change, particularly through their production and consumption activities.

Study context:

The economic context of Niger is characterized by a recession leading to the adoption of the 2018 Finance Act, which is disputed, by civil society advocates and some political opponents, in addition to the eviction of shopkeepers from the big city boulevards and around the public buildings. The decline in the Nigerian currency (Naira) is another

major obstacle to Niger's economic growth. As a result, trade between the giant of Africa (Nigeria) and Niger is falling sharply. Thus, Niger's trade balance remains negative, leading the country into an impoverishment of its population and an increase in prices of necessities. These economic situations are even worst in the region of Tillabéri, ranked among the poorest. From a social viewpoint, the population of Tillabéri is growing at a considerable rate. Its annual population growth is around 3.3%. This increase is certainly the consequence of societal practice such as polygamy involving 14% of the population (DSCN, ISN-Niger, 2012). The 2012 census reveals that the department of Tillabéri had a population of 227,352 inhabitants and represents 8.4% (8.4 percent) of the region's demography. Religious beliefs and the low literacy rate (23.8%) of the population are the essential factors contributing to polygamy. The social context of Tillabéri is also characterized by growing insecurity due to the crisis in Mali, Libya and the presence of road cutters. These insecurity situations lead to the decrease in activities such as fishing, agriculture and livestock farming. Another factor is the recurrent conflict between pastoralists and farmers in the region, which continues to divide communities. From an environmental viewpoint, the Tillabéri Region is full of enormous water and environmental potential. It has a large tourist site where live several hippopotamuses (department of Ayerou). Nevertheless, the presence of these animals creates conflicts between residents and officials of the Ministry of the Environment. This situation is a result of the poor perception of the environment and the collective representation of local populations in

relation to biodiversity. Homemakers practice the breeding of small ruminants, and the fish sector is also developed in this context and constituted an important sub-sector for income generation.

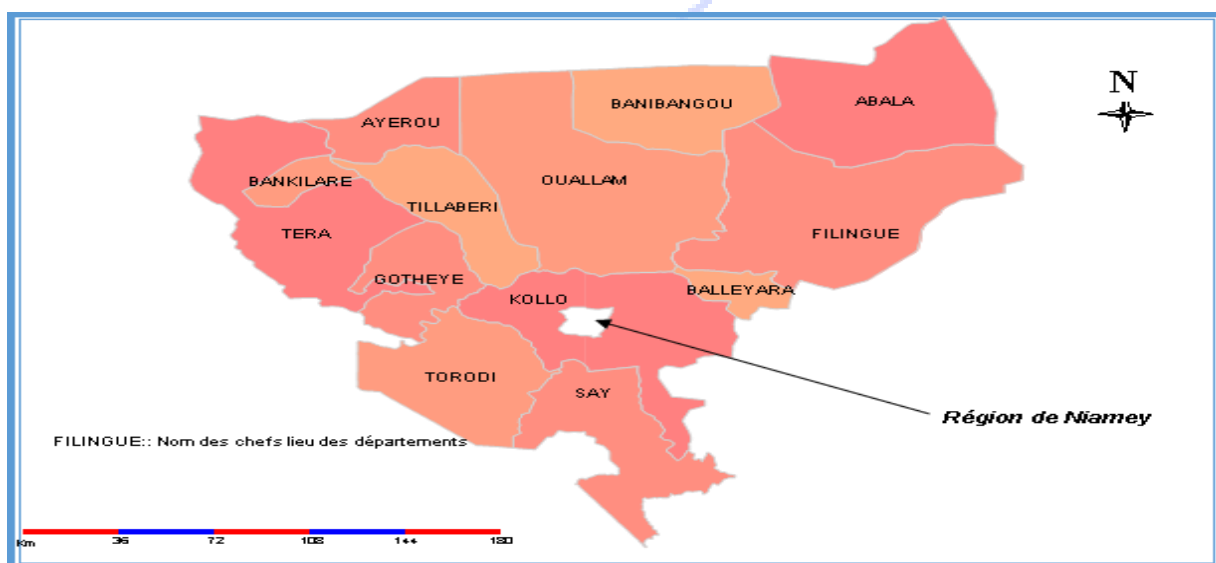
Materials and Methods:

This part of the study is devoted to the methodology used. Thus, we will first present the materials, then the methods used.

Materials:

Created first as a department by Order n ° 88-20 of 07 April 1988, Tillabéri becomes a region with the Law n ° 58-31 of September 14, 2002. It covers an area of 91 119 km², about 7.7% of the national territory (Tillabéri Regional Statistical Yearbook, 2013). The region of Tillabéri is bounded to the north by the Republic of Mali, to the east by the regions of Tahoua and Dosso, to the south by Benin and to the west by Burkina Faso. The department has an area of 8,715 km², corresponding to 9.6% of the region. It is limited to the east by the department of Ouallam, to the west by the departments of Gotheye and Tera, to the north by the department of Ayerou, to the northwest by the department of Bankilare and to the south by the department of Kollo surrounding Niamey (Figure 1). The department of Tillabéri has an urban commune (Tillabéri) and six rural communes (Anzourou, Bibiyergou, Dessa, Sakoirra, Kourthey and Sinder). It is crossed from north to south by the Niger River where fishers live. The commune of Tillabéri is located in the township of Sakoirra. Since the creation of the university in 2014, the city continues to expand with the emergence of new districts.

Figure 1: Administrative map of Tillabéri region



Source: DR/INS/Ti – Tillabéri database

To conduct this study, we have elaborated a questionnaire containing variables such as the marital status, origin, age, ethnicity, family size, nationality of the fishers, etc. The questionnaire was submitted to a random sample of thirty-six (36) people, divided equally among fishers, fishmongers and scalers. The Excel software was used to analyze the data. The target population consisted of men and women who consider the fish sector as a means of combating poverty and promoting food security.

Methods:

The study starts with the collection of quantitative data, and qualitative data resulting from a fine observation of the activity. Therefore, we first carried out a field survey allowing us to grasp the reality of the field. This approach took us a year of questioning and reappropriation on the frequency of the customers, the abundance, the type of actors and sometimes the shortage of fish on the market. After grasping all these factors, we then went through the second stage of our investigation. During this survey, we included three seasons of the fish trade in the questionnaire: cold season, hot season and rainy season. Thus, we have obtained the revenues realized each day by the various actors of the sector. Finally, the third step is consisted of the data analysis. The fish sector is expressed as follow: $F(x) = f_1(x, y_1) + f_2(x, y_2) + f_3(x, y_3) + f_n(x, y_n)$, where x is the product (fish) and y is the link. Each action plays a vital role in the marketing. Therefore, all the actions carried out by the links ensure this marketing.

- For fishers, Gain = Gross Revenue = Quantity \times Unit Price, Where Revenue = $Q \times P_u$
- For fishmongers, Gain = Gross Revenue = Quantity \times Benefit. Profit = Sale price - Purchase price, costs are minimized
- Thus, average income equal to: ΣR_n over N , R_n = total income and N = number of people

The field survey was completed by a bibliographic approach. It led us first to the Institute of Research in Human Sciences (IRSH) of Niamey where we had the opportunity to discuss with researchers who have already worked on the fish activity. Secondly, to the National Institute of Statistics (ISN-Niger) and the Regional Office of Environment in Tillabéri where we respectively obtained data on the population of Tillabéri and fishing activities. Additionally, other data have been obtained through the internet.

Results:

The results of the survey are presented as follow: the social function of the fish sector, the economic and food aspect of the sector, the marketing of fresh fish and finally, the different problems the sector faces.

Social function:

The results of our survey reveal that the fish trade is carried out in a logic of social division of labor confining each actor in its corresponding sphere. The fish sector, which is a sub-sector, is a role specialization channel. Thus, fishing remains a male activity and the fish trade, a task reserved only for women, with the majority being housewives. There are also widows with dependent children (5 children for fishmongers and 3 children for scalers). In addition to these three groups, the class of scalers composed mainly of women residing in the city of Tillabéri without any other opportunity. Their main task is to remove the scales and clean the inside of the fish. This logic of labor division is in conformity with a society like that of Tillabéri, which is of patriarchal type and where men are heads of families. The social realities of the city kept women into a situation of housewives and limit their activities. The social division also leads to a specialization of tasks and a specificity of activities. The sector highlights a logic of identity construction, cultural and a vertical type of social hierarchy (that is to say, a fisher family can enrich itself through the activity and have a consideration in society). This trend of modernization of the society guarantees a social rise of the actors of the sector without social discrimination. However, this study revealed that the activities in the fish sector constitute a network of cultural appropriations, meaning that culture plays an important role in their daily practices. Indeed, the transmission of culture is done with the logic of social reproduction where the sons of fishers become fishers. This fact is demonstrated by our results showing that all the fishers inherited the activity of their parents (Table 1). Furthermore, the same goes for some fishmongers and scalers. In these cases (fishmongers and scalers), the proportion of heirs is the same (58.33% of the surveyed population). However, we can notice that of full-time workers varies from level to another. For example, if all the scalers work full-time, some fishers and fishmongers work only part-time (25% and 8.33% respectively). Polygamy, which is a social reality in African societies, also occupies a central place in fishers' practices. Thus, the results of our study show that the proportion of polygamous fishers is 83.33% compared to only 16.67% monogamous. These

practices are certainly influenced by the financial nature of the sector, placing the fishers in a position

of obvious covetousness in a population whose majority is hit by poverty.

Table 1: Characteristics of the actors

Characteristics Actors	Average age	Marital status			Work time		Sex		Family size		Heritage	Children number
		Mar	Di	Ve	TP	TC	Fe	Mas	poly	mono		
Fishers	44	12	----		3	9		12	10	2	12	6
Fishmongers	45	10	---	2	1	11	12	---	----	----	7	5
Scalers	49					12	12		----	-----	7	3
Total		10		2	4	30	24	12	10	2		

Source: survey, 2018.

Economic function:

The results of the study show the existence of three seasons of the fish trade (cold season, hot season and rainy season). The income varies according to the season and the category of the actors. However, the industry is permanently generating significant revenue (Table 2); it allows people engaged in the activity to make consistent savings. For example, fishers and fishmongers can save 171,250 and 433,330 FCFA per year respectively. Our findings show that female fishmongers benefit more from the industry than fishers do. However, Table 2 reveals the opposite. The gross income of the fishers amounted to 53,900F and 55,300 FCFA, while those of the fishmongers are 45,500F and 40,690F, respectively in hot season and rainy season. Despite the importance of fishers' income, the fact is that they save less than fishmongers do. This can have explained by the fact that fishing expenses are higher comparing to fishmongers' expenses. Fishing is more profitable in the rainy season compared the rest of the year; while the income earned by the fishmongers varies in the opposite direction, (the revenues of the hot season are slightly higher compared those of the rainy season). The increase in their incomes could be explained by the increase in demand, which is influenced by the fall in price (the price of the kilogram decreases from 2500 to 1500 FCFA). Indeed, from the finding of this study, we

can state that the difference between the incomes from the different seasons is not as high as it may seem (table no?). The rainy season coincides with the increase in the income of the scalers, because of the decrease in their number. Indeed, during this period of the year most of the scalers give up the activity for farm works. Our results also reveal that the cold season corresponds to the off-season for the whole industry. The gross and average income drops to 17,520 FCFA for the fishers, 23,890 FCFA for the fishmongers and 1,260 FCFA for the scalers.

Food function of the sector:

The fish industry plays an important role in promoting food and nutrition security in Tillabéri. The fishers we met reported to us that their primarily motivation was related to the food function of the activity. However, the imposition of taxes and the control of the fishing by the officers of the Ministry of the Environment, push them to work full time. Considered as a complete and nutritious food, fish consumption is encouraged by nutritionists. Our results reveal that fishers and fishmongers consume a significant amount of fish per day. This daily consumption is 4.5 kilograms for fishers and 5.75 kilograms for fishmongers. On the other hand, the income generated allows the actors to obtain other foods (cereals and condiments) guaranteeing a healthy and nutritious diet.

Table 2: Economic and food aspect of the sector

Income Actors	Average gross income cold season / day	Average gross income hot season / day	Average gross income rainy season / day	Savings / year	Self- consumed quantity in kg / day
Fishers	17 520	53 900	55 300	171 250	4,5
Fishmongers	23 890	45 500	40 690	433 330	5,75
Scalers	1 260	1 900	2 165	-----	-----

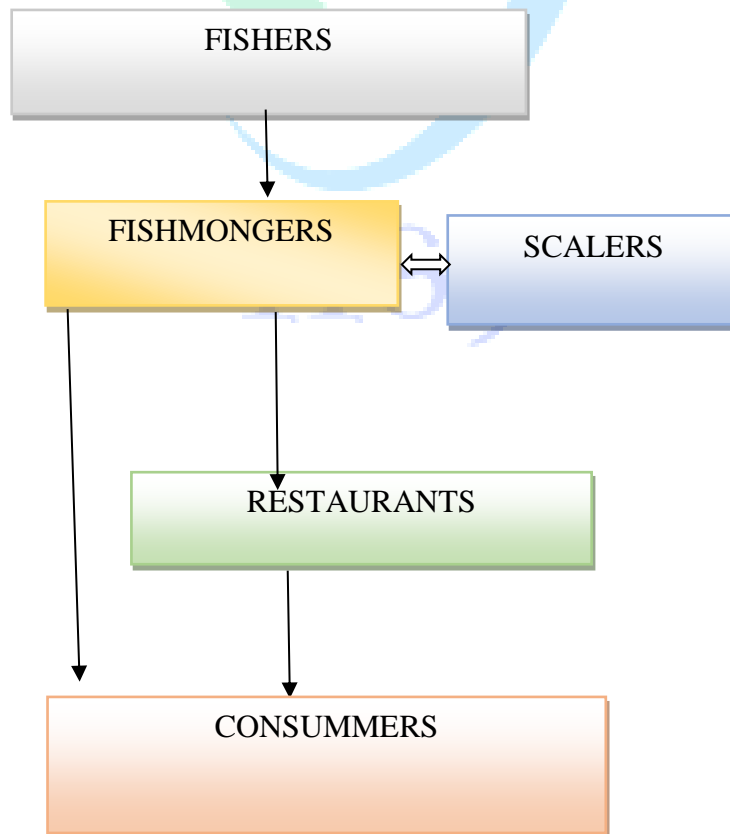
Source: Survey 2018

Two average channels:

The fish industry of Tillabéri is composed of four levels: fishers, fishmongers, restaurants and consumers. These levels are in perpetual interaction to ensure the fish supply. Fig. 1 shows the first level of the sector, fishers. The fishers market the fish directly with the fishmongers, assisted by the scalers. The relationships between these two levels are based on trust and conviviality. In addition, fidelity is the fundamental basis of the sustainability of their relationships. Thus, the freshly caught fish are handed to the fishmongers who hold the customers. Another important factor in this sector is that fishers do not sell directly to consumers, so they are in a way forced to settle for the price set by the

fishmongers. The figure below (figure n ° 1) shows that the fishing sector has two average channels: the simple average channel and the integrated average channel. The first consists of fishers, fishmongers, scalers as well as consumers. As for the integrated average channel, it consists the fish delivery from the fishers to the consumers via the fishmongers, the scalers and the restaurants. The second level of the sector corresponds to that of fishmongers. As previously stated, scalers assisted the fishmongers in chipping, skinning and cutting the fish into pieces. The third level of the sector concerns the restaurants in the city. Finally, the fourth level is that of consumers, composed of Tillabéri residents and travelers.

Figure 1: Average channels



Source: Survey, 2018

Fishing constraints:

Nowadays, one of the recurring problems fisheries are facing is climate change, which remains a key factor in the decrease in precipitation, responsible for the decline in surface water flow. In addition, the persistence of silting, leads to a decrease in the water level. These environmental problems are becoming more and more serious, and are causing a decrease in the amount of fish. The presence of hippos in the area is another major problem. That is why the population of Tillabéri are reluctant to practice the activity. From a purely administrative viewpoint, paperwork is another problem faced by actors (fishers and fishmongers) in the industry. Because, the behaviors of some officers of the ministry in charge of the fishing constitute an obstacle for the development of the sector. Although the actors pay their annual fee (20,000 FCFA), they still face administrative problems such as the confiscation of fish by officers and the delay for the renewal of authorizations. The lack of training of actors is also an obstacle that needed to be mentioned in this work. Additionally, the fish sector encounters fresh fish conservation problems.

Discussion:

The results of our survey are close to those reported by Oumarou ALI ABDOU (2014) who conducted a study on the marketing of fresh fish in the urban community of Niamey. The results of his study show, unlike of our study, that households of which 95% are married and only 5% single practice fishing. This shows a slight difference with our results which reveal that fishers are all household heads with 83.33% polygamous and 16.67% monogamous. This is an undeniable reality because of the different social characteristics of the fishers living in these two cities, opposed by the size, urbanization and lifestyle of their respective populations. Thus, it is easier to feed and house a family in Tillabéri than in the Niger capital where the price of housing and food increases exponentially. The sector studied by the author (O.A. ABDOU, 2014) is composed of fishers, fishmongers, restaurants, wholesalers, retailers and consumers. This chain is longer than the sector of our current study composed of fishers, fishmongers, restaurants and consumers. Indeed, the biggest difference between these two studies concerns the existence of wholesalers and retailers on one hand, and of scalers in the sector, on the other hand. However, Oumarou ALI ABDOU (2014) has also focused on tools vendors, which are not included in our study. And, while the Tillabéri sector is fed by local fish, that of Niamey is supplied by imported fish from Asia. Among the issues discussed in our

study, climate change seems to be the most relevant. Thus, we find this same problem in ADAMOU SALISSOU (2013) study. The author has been able to show the link existing between the variation of the precipitations and the decrease of the quantity of the fish in the Niger River. He also highlighted the link between silting and the decrease of fish. Therefore, results are consistent with those of his research. In addition, the results of our study reveal the presence of hippopotamuses and the administrative hassles, which constitute a big obstacle for the development of the sector. The protection of biodiversity is a serious problem in the region because; the local populations do not have a favorable conscience with the blooming of hippopotamuses. Our results are similar to those of DNP's annual report on fisheries in Mali, which shows the importance of supporting the actors by strengthening their fishing and marketing capacities. The study was carried out on the regions of Timbuktu and Gao, crossed by the Niger River and where fishing has a remarkable importance, even though it faces since 2012 the problem of insecurity due to the presence of jihadists. The populations of Tillabéri and those of this part of Mali are experiencing similar problems.

Conclusion:

This study showed that fishers, fishmongers, restaurants and scalers are the main players in the Tillabéri fish industry. Each of these actors plays an important role in the marketing of fresh fish. The study also demonstrated the existence of two medium channels (integrated simple and medium channels) and the multifunctionality of the sector. However, it faces multiple constraints (climate, taxes, and environment).

References:

- 1) ABDOU ADAMOU SALISSOU, (2013), impacts du changement climatique sur la pêche au Niger : quel avenir pour les gens de l'eau ? éditions RESEAU CLIMAT ET DEVELOPPEMENT, Tillabéri, Niger.28 pages.
- 2) DCSN, ISN-Niger, (2012), Recensement Général de la Population et de l'Habitat, Niamey, Niger.37 pages.
- 3) DCSN, ISN-Niger, (2013), Annuaire Statistique Régional Tillabéri, 2013, Niamey, Niger.50 pages
- 4) DR/INS/Ti -Base de données Tillabéri (2013), Carte de la Région de Tillabéri, Tillabéri, Niger
- 5) DIRECTION NATIONALE DE LA PECHE (2015), rapport annuel sur la pêche, Mali, 56 pages.

- 6) OUMAROU ALI ABDOU (2014), Etude de la commercialisation du poisson frais dans la communauté urbaine de Niamey (Niger), Mémoire de Master, Ecole Inter-Etats des Sciences et Médecine Vétérinaires (EISMV) de Dakar, Sénégal, 48 pages.
- 7) REPULIQUE du Niger (1988), Ordonnance n° 88-20 du 07 avril 1988 portant création du département de Tillabéri, Niamey, Niger.

