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RESEARCH ARTICLE

FOOD HABITS OF RURAL PEOPLE IN IVORY COAST

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Abstract

The objective of this bibliographic synthesis is to reveal the work already done on the food habits of the rural populations of Côte d'Ivoire and to deduce in perspective what is to be studied in a context of climate change. It is based on secondary data sources such as: published or edited books, scientific journal articles, websites, magazines and annual reports. The eating habits of rural Ivorian people are influenced by several factors, including cultural identities, nutrition criteria, ways of preparing and consuming food, but also by disasters, crises (economic, war, etc.), climate change, etc. The food habits of rural people in Côte d'Ivoire are based on several foods, mostly local. Tubers (yam, taro), roots (cassava), plantain, cereals (rice, maize, millet, sorghum) are used as main dishes, prepared under various recipes (foutou, attiéké, toh, placali, etc.). These main courses are accompanied by sauces made of vegetables and fruits (okra, eggplant, peanuts, palm seeds, chili peppers, tomatoes...), vegetable leaves, meat, game, fish, insects... However, these peoples have many totems, taboos and food prohibitions of animal and vegetable origin which are likely to affect their nutritional state and even their health. All these researches did not provide details on food consumption frequencies nor on resilience or adaptation measures in the context of climate change affecting agricultural yields and related commodities.

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Introduction:-

Food security is one of the priorities of the African Union (AU) and this was clearly expressed by the Conference of Heads of State and Government of this high institution, in February 2022, at its headquarters in Ethiopia by inviting all member states to give priority to nutrition (AU, 2022).

In Côte d'Ivoire, the cultural and linguistic diversity of the people constitutes a real mosaic. However, within this diversity, each recipe is unique and is defined by the sauce and the accompaniment. It is also a means of identification. Many authors have studied the food habits of the peoples of Côte d'Ivoire. While some of them describe the different dishes of the peoples of Côte d'Ivoire (Adiko et al., 2019; Adiko et al., 2021; Kunindjani, 2021), others evoke the dietary prohibitions to which certain peoples were subjected (Anoua, 2017; Gogbeu, 2019), while several reveal the effects of dietary habits on the health of the populations (Coulibaly, 2017; Koné et al., 2018; Coulibaly et al., 2021).

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All of the above has led to the completion of our thesis work, the theme of which is: "Cultural identities and eating habits in the context of climate change in Adjoukrou country (Dabou department).

The general objective of this article is to highlight the work already carried out on the food habits of the rural populations of Côte d'Ivoire and to deduce in perspective what is to be studied in a context of climate change.

The present bibliographic synthesis is based on secondary data sources such as: published or edited books, articles from scientific journals, websites, magazines and annual reports. The keywords of this research are the titles of the different paragraphs discussed below. Thus, in what follows, we will successively develop (1) a definitional approach to eating habits, (2) the factors that influence eating habits, (3) the different foods available to the people of Côte d'Ivoire, (4) their eating habits, (5) their totems, taboos and dietary prohibitions and (6) the potential impact of these eating habits on their health.

Approach to defining eating habits:-

Eating habits are the recurrent choices that a person, or a group of people, makes about what foods to eat, how often to eat them and how much to eat each time (Office québécois of the French language, nd). According to Pillarella (2006), eating habits refer to the repetitive nature of practices acquired in a dynamic process that is both stable and predictable, while undergoing constant change. Eating habits are dictated by both nutrition and pleasure criteria and are strongly influenced by social traditions and cultures, which are based on ideals and identity (Pillarella, 2006). Thus, totems constitute peoples' food practices and reflect their cultural identities (Doukouré, 2013). This allows us to understand the logics, representations and construction of their identities.

The types of foods that make up a population's diet and the ways in which these foods are prepared, presented, and consumed all carry traditions, embodying the values of each culture, and in some contexts, even a religion (Counihan and Van Esterik, 2013; Denning and Fanzo, 2016). Because of the cultural charge of food systems among indigenous peoples, local food systems are critical to their collective identity and well-being (FAO, 2009 as cited in HLPE, 2018). Furthermore, while food practices and habits find their primary reason for existence in the biological need for food, they are also the object of a social and cultural construction. In this regard, De Garine (1996), cited by Pillarella (2006), reminds us that the field of food, which corresponds to the satisfaction of a vital primary need, is one of the sectors of choice where symbolic activity is exercised and in which food plays a role that is not exclusively nutritional. Thus, the symbolic value dominates, because man does not ingest nutrients, but dishes of complex composition that are based on both cultural and psychological requirements (Pillarella, 2006). And according to Halpern (2004) cited by Pillarella (2006), the family is the main place where children learn about food and culinary practices. The child learns to differentiate between what is consumable and what is not, according to the cultural norm. Food plays a central role in our societies. It is the foundation of our lives. For Mustafa Koc and Jennifer Welsh (2002), food is more than just a nutrient, it is a key component of our culture, of our sense of identity.

Factors influencing eating habits:-

Cultural identities (of the peoples of Ivory Coast):-

Eating habits are dictated by both nutrition and pleasure criteria and are strongly influenced by social traditions and cultures, which are based on ideals and identity (Pillarella, 2006). Cultural identity is manifested through language, beliefs, knowledge and arts, traditions, institutions and lifestyles, and food through which a person or group expresses the meanings they give to their existence and development (Sow, 2009). According to Brière (2017), cultural identity is formed when a group shares a number of common characteristics. First, there are cultural products that include the most visible characteristics of cultural identity such as fashion, habitat, architecture, rhythms of life, artistic, industrial and agricultural productions, festivals and ceremonies. According to the definitions given by the Petit Robert (2020), it evokes similarity, "character of what is identical", unity, "character of what is one", permanence, "character of what remains identical to oneself", recognition and individualization, "the fact that a person is such an individual and can also be recognized as such without any confusion thanks to the elements that individualize it.

In Ivory Coast, the way in which women give birth to babies is a factor that differentiates the Akan people from the other ethno-cultural groups in the country, namely the Gur, the Malinke, the Mande of the south, the Mande of the north and the Krou. For example, according to the Ebrié, a lagoon-dwelling Akan ethnic group, the diet of women who have given birth in the north and west of Ivory Coast is strongly based on rice, which they consider to be

slimming and unable to make them fat. This state of affairs explains why positive perceptions of overweight among women giving birth in the north and west of the country are not widespread, according to the inhabitants of Ebrié villages on the outskirts of Abidjan (Adiko et al., 2016).

As has been noted in a number of studies on the food model, food and cooking remain one of the identity markers (Fischler, 2001; Poulain, 2002). Indeed, in rural and urban areas of Côte d'Ivoire, the socio-cultural variable or ethnicity remains a determining factor in food choices and influences the choice of cereal or starch-based dishes (Courade et al., 1989).

People of different religions live together peacefully in many families. This concerns all the major ethnic groups of the country: the Akan, whose historical presence is located in the center, east and southeast; the Krou, in the west and southwest; and the Gour, in the north and northeast; the Gour in the north and northeast, and the Mandé in the north and northwest and this, even though some ethnic groups are globally more marked by Islam (such as the Malinké, a northern Mandé subgroup) or more marked by Christianity (such as the Ebriés, a lagoon-dwelling Akan subgroup whose home and region is Abidjan) (OIR, 2018).

In Adjoukrou country, a predominance of Christianity. We have in particular, the Protestant Catholic, Harrist and Evangelical religious denominations (Kacou, 2005).

Nutritional criteria, food preparation, presentation and consumption:-

Eating habits are dictated by both nutritional and pleasurable criteria (Sobal et al., 1998; Peltó and Backstrand, 2003) as cited by Pillarella (2006). The types of foods that make up a population's diet and the manner in which these foods are prepared, presented, and consumed all carry traditions, embodying the values of each culture, and in some contexts, even a religion (Counihan and Van Esterik, 2013; Denning and Fanzo, 2016). Because of the cultural charge of food systems among indigenous peoples, local food systems are critical to their collective identity and well-being (FAO, 2009 as cited in HLPE, 2018).

Furthermore, while food practices and habits find their primary reason for existence in the biological need for food, they are also the object of a social and cultural construction. In this regard, De Garine (1996), cited by Pillarella (2006), reminds us that the field of food, which corresponds to the satisfaction of a vital primary need, is one of the sectors of choice where symbolic activity is exercised and in which food plays a role that is not exclusive. Eating habits are strongly influenced by social traditions and cultures, which are based on ideals and identity (Sobal et al., 1998; Peltó and Backstrand, 2003) cited by Pillarella (2006). According to Doukouré (2013), traditional prohibitions and totems constitute the food practices of social groups and reflect their cultural identities. This allows us to understand the logics, representations and construction of their identities.

In food habits, the symbolic value dominates, because man does not ingest nutrients, but dishes of complex composition that are based on both cultural and psychological requirements (Pillarella, 2006). And according to Halpern (2004) cited by Pillarella (2006), the family is the main place where children learn about food and culinary practices. The child learns to differentiate between what is consumable and what is not, according to the cultural norm. Food plays a central role in our societies. It constitutes a foundation of our life. For Koc and Welsh (2002), food is more than just a nutrient, it is a key component of our culture, of our sense of identity.

Food and nutritional resilience as a factor in changing or adapting eating habits:-

The links between "resilience" and "food security" have already been established by several authors (USAID, 2012; FAO, 2013a; Bouafou et al., 2021). Resilience is becoming institutionalized in the field of food insecurity and is thus imposed on all, as the ultimate weapon against hunger (Lallau, 2014). Thus, food resilience is not only a question of food security but also a question of economic, environmental and social sustainability of the local food model (Cap rural, 2021). It can be distinguished four groups, the different shocks and stressors that often overlap or interact, to lead to the increase of food and nutrition insecurity globally (Piters et al., 2021) and leading to changes in eating habits. These include (1) climate change, variability and extremes (e.g., erratic rainfall, droughts) (FAO, 2013a and 2013b, UNDP, 2017; FAO, 2018), (2) conflict and insecurity (e.g., displacement, civil unrest, terrorism), (3) economic downturns and market disruptions (e.g., 2008 food price spikes) (WHO, 2009, Torrens Resilience Institute, 2009), and (4) other unexpected shocks (e.g., sudden-onset locust outbreak, pandemic) such as COVID-19 (Faucher et al., 2020; Béné et al., 2021; National Council for Food Resilience, 2021).

Food and nutrition resilience/adaptation can be achieved through several strategies: changing diets; increasing food supplies using short-term strategies that are not sustainable over a long period of time; if available food is still insufficient or inadequate to meet food needs, trying to reduce the number of people to be fed by sending some of them elsewhere; managing the deficit by reducing portions served or the number of meals, favoring certain family members, or fasting for entire days) (UNDP, 2017; Grain de sel, 2020; Mulumeoderhwa et al. , 2020).

In Ivory Coast, the Gouro peoples in the west of the country whose staple foods are yam and rice, exacerbated by the failure of the usual crops and the quest for food security has favored the integration of the consumption of cassava products in their eating habits (Adou, 2015). In the department of Divo, in the southwest of the country, reveals that the indigenous population, the Dida, whose staple food is plantain, is in the obligation to modify its food habit, nowadays to eat rice, cassava (Ahouyao, 2017).

Availability of food for the people of Ivory Coast:-

Cassava:-

In Ivory Coast, cassava is produced throughout the country but mainly in the south, west and center. Annual production reaches 5.608 million tons, with an average yield of 25 tons per hectare (FIRCA, 2018).

Cassava contributes to human and animal food and is then used in industries. There are more than twenty products derived from cassava: attiéké, cassava paste, placali, foutou, tôh, flour, starch, gari, bread, cake, etc. The first two are traded nationally and internationally. The most common preparations are "foutou", "attiéké" and "placali" (N'Zué et al., 2013; Rongead, 2015; Akpingny and Koulou, 2017).

Plantain banana:-

Plantain is a widely consumed product in West and Central Africa (Tetang, 2013). In Ivory Coast, it ranks third in food production after yam and cassava (Kouassi et al., 2006). With a production of 1.955 million tons, production is far from covering the food needs of the population, estimated at between 2 and 3 million tons per year (Thiémélé et al., 2016; FIRCA, 2018). It contributes in an essential way to food security, job creation, income diversification in rural and urban areas, to the gross domestic product (GDP) and, in so doing, to the fight against poverty (Nkendah, 2001).

Rice:-

In Ivory Coast, rice is a staple food for the population, particularly in urban areas (Tondel et al., 2020) due to the change in people's eating habits. Average consumption is 61 kilograms per capita per year. However, Ivory Coast is not self-sufficient. National rice production in Ivory Coast barely covers 60% of domestic consumption, which is estimated at nearly 2,000,000 tons. To make up for this deficit, the country resorted to massive imports of milled rice that amounted to 1,324,000 tons (ONDR, 2018; ADERIZ, 2018 cited by Yoboué, 2019).

Tubers (yam, taro, etc.):-

Yam occupies the 1st place in food production with an estimated contribution of 49% in 2008 and provides financial resources to a significant fringe of small producers (FIRCA 2018; Mahyao et al., 2019). Ivory Coast is the third largest producer of yam in the world with at least a dozen varieties grown (Ducroquet, et al., 2017). Yam is grown throughout the country precisely by order of importance in the following ten regions: (1st) "Gbèkè", (2nd) "San-Pédro", (3rd) "HautSassandra", (4th) "Worodougou", (5th) "Agneby-Tiassa", (6th) "Lagunes", (7th) "Gontougo", (8th) "Pôro", (9th) "Marahoué", and (10th) "Kabadougou" (Côte d'Ivoire Chamber of Agriculture, 2013).

Maize:-

Maize is the staple food of many Ivorian populations. It is also used in animal feed (poultry, pigs, cattle) and as a raw material in certain industries (brewery, soap factory and oil factory). Maize cobs are harvested fresh or dried according to taste and use (Akanvou et al., 2006).

In Côte d'Ivoire, maize is grown in various agro-ecological zones, alone or in association with most crops. With a national production of more than 840,000 tons in 2013, maize is the second most important cereal crop in Ivory Coast after rice. It is the most important raw material in the manufacture of livestock feed. The State then decided, in the National Strategy for the Development of Food Crops Other than Rice, to develop this crop (Yapi and Kouassi, 2017). Average yields of traditional varieties in the farming environment are around 0.8 tons per hectare; compared to 2 to 5 tons per hectare in controlled environments for varieties selected by research.

Vegetables and fruits:-

Vegetables (okra, eggplant, chili pepper, tomato, etc.) play an important role in the food supply in Ivory Coast, with production of 102,995 tons of eggplant, 176,055 tons of okra and 44,078 tons of tomato (Oudin, 2020). These are highly valued commodities whose consumption (leaves and fruits) increases daily with the need for basic foodstuffs (rice, banana, yam, etc.), due to the growing rate of the Ivorian population and especially that of large non-agricultural urban areas (FIRCA et al., 2019). Having become the most secure source of income, vegetable growing areas are found wherever cultivation is not a problem. The main production basins for market gardeners to supply urban markets are located in the perimeter or periphery of major urban centers (Abidjan, Yamoussoukro, and Bouaké), in the East, Center, and Center-West of the country commonly known as peri-urban agriculture (WFP, 2016). To meet this ever-increasing need for vegetables in the diet, it therefore appears necessary to increase vegetable production. This must be done by improving cropping systems and obtaining varieties adapted to different cropping systems (Djidji, 1992).

In Ivory Coast, fruit production is provided mainly by the pineapple (30,000 tons), dessert banana (350,000 tons), mango (32,000 tons) and papaya (12,000 tons) sectors. One of the major problems of the fruit sectors is the perishability of the fruits (FIRCA, 2018).

Eating habits of the Ivorian people:-**General information on the eating habits of rural Ivorian people:-**

There are 60 ethnic groups in Ivory Coast, grouped into 4 main groups: the Mande of the North in the Northwest (20%) and the Mande of the South in part of the South (10%), the Krou in the Southwest and West (15%), the Voltaic or Gour (23%) in the Northeast, and the Akan (32%) in the Center, East and Southeast (Nausica et al., 2018; Soro et al., 2022). In Côte d'Ivoire, each cultural group can be associated with one main and one secondary crop (Table 1) (Kouadio, 2001).

Table I:- Distribution of staple foods of the Ivorian ethno-cultural groups according to the regions of Ivory Coast.

Region	Northwest	north	Northeast	Central	Southeast	Southwest
Ethno-cultural group	Malinke	Voltaïque ou Gour	Voltaïque ou Gour	Akan	Akan	Krou
Primary culture	Corn	Corn	yam	yam	Plantain banana	rice
Secondary culture	Millet, Sorghum	yam Millet	Corn Sorghum	Cassava	Cassava	Plantain banana Cassava

Source: Kouadio, 2001

The most common staples are foutou (refined yam, plantain or cassava paste), toh (maize, millet, or sorghum flour cooked in boiling water), rice, attiéké (fermented cassava semolina cooked in steam), and placali (cassava paste cooked in water over fire). Also, according to Yoboué et al (2021), cereals and tubers are dominant in the foods consumed by most rural households. Cassava, yam, plantain, rice, and maize are the most consumed foods in Ivory Coast. Nationally, rice is the most consumed cereal. Sauces accompany these basic foods and are the key element in the nutritional balance of the individual because of the variety of nutrients they provide (Kouadio, 2001). This is confirmed by Kunindjani (2021). According to him, the traditional dishes of the various regions of Ivory Coast are presented in the form of: main dishes with accompanying sauce.

There is a wide variety of Ivorian sauces: eggplant, palm seed, okra, peanut, tomato, "kedjénou" or stewed chicken sauce, vegetable leaf sauces "namoukou or baobab leaf", "dah or sorrel leaf"... (Courade et al., 1989; Koffi, 1996 and Koffi et al., 2009, Kunindjani, 2021)

Fish has organoleptic qualities that are appreciated by Ivorian consumers and is part of their eating habits (Akindès, 1995).

Thiémélé et al (2010) found that 76% of the population consumes sweetened beverages on a daily basis, mostly locally produced beverages: "bissap" or sorrel juice, ginger juice, passion fruit juice and "tamarind" juice.

According to PAM, FAO, MAI (2013), 77% of rural household expenditures are spent on food. The food habits of rural households have not changed despite the income from the sale of perennial crops because the basic diet still remains traditional with very low frequency of consumption of refined foods throughout the year.

Somé et al (2011) and Yao et al (2013) have shown that July, August and September are the months of the year when many households in western Côte d'Ivoire suffer from food shortages in rural areas, and cassava is the lean food that comes into play when rice, plantain or maize are no longer available. The number of family meals and the staple food therefore vary according to different periods and the availability of food reserves (Ministry of Agriculture, FAO and PAM, 2012; Sanginga and Mbabu, 2015; Yobouet et al., 2018). Among these peoples, unlike cereals and tubers, sugar and sweet products, milk and dairy products, meat (beef and poultry), and eggs are consumed at low levels. The market being the main mode of access to these foods would justify this low consumption (Ministry of Agriculture et al., (2013); Workicho et al. (2016) and Khalid et al. (2017).

Eating habits of the peoples of the East, Centre and South-East: the Akan:-

Dietary habits of the Akan populations: adolescents, adults and the elderly:-

In the regions of origin of the Akan, the populations of the Baoulé and Agni ethnic groups have particularly built specific dietary patterns based on the consumption of yams, cassava, plantains and their derived forms in their villages of origin (Becker and N'Guessan, 2004; Atsé, 2017). For these populations traditionally attached to yam, its highly ritualized consumption represents a factor of ethnic identification, distinction and social cohesion (Bricas and Attaie, 1997).

a. Food Habits of the Akan of Eastern Ivory Coast: Agni:-

They regularly consume yam foutou, taro foutou mixed with cassava, unripe plantain foutou mixed with cassava, taro foutou and ripe banana foutou mixed with cassava as starchy main courses. Accompanying sauces are eggplant sauce, fresh okra sauce, dry okra sauce (or "djouglé"), palm seed sauce, clear sauce, pistachio sauce, peanut sauce and vegetable leaf sauces. The main sources of protein are meat, fish, champions, and shellfish (Kunindjani, 2021).

b. Food habits of the Akan of Central Ivory Coast: Baoulé:-

They regularly consume yam foutou, banana foutou mixed with cassava, placali, rice, yam foutou mixed with cassava, or taro foutou mixed with cassava as starchy main courses. They consumed gouagouassou sauce, eggplant sauce, dry okra sauce, fresh okra sauce, namoukou sauce and peanut sauce. Meat, fish and game are the main sources of protein consumed (Kunindjani, 2021).

c. Food Habits of the Akan of Southeast Ivory Coast Lagoon:-

As for cassava, it is mainly consumed by Ivoirians, in this case individuals of the N'Zima ethnic group belonging to the Akan lagoon group. They use it to make attiéké, a highly prized food product in Côte d'Ivoire. Thus, given the socio-cultural importance of these starchy foods, but also because of their quality as a nutrient providing a large proportion of the calories necessary for human development, yams and cassava are culturally valued for the basic diet of the Akan nurse. It is clear that cassava foutou, which is the pounded and elastic form of the mixture of boiled cassava and plantain pieces, is part of the staple diet of households in the southern regions, and particularly the coastal regions of Ivory Coast (Adiko et al., 2019).

The peoples of southern Ivory Coast eat very regularly with ripe banana foutou mixed with cassava, unripe banana foutou mixed with cassava, plantain foutou, attiéké, attiéké with red oil, rice, and placali as a starchy main course. The accompanying sauces are seed sauce, eggplant sauce, tchètchra sauce (banana-based), biokosseu sauce (spicy sauce), dry okra sauce, fresh okra sauce, clear sauce, midichelé sauce potato leaf sauce, peanut sauce and other sauces made from edible planted or spontaneous leaves such as cassava leaves, spinach leaves, mamissou leaves (*talium paniculatum*). Meat, fish and snails are their main sources of protein. They also regularly eat starchy main courses such as conkodé (dry cassava flour cooked in water over a fire), corn tôh and cassava paste (Kunindjani, 2021). Attiéké originated among the peoples of southern Côte d'Ivoire (Ebrié, Adjoukrou, Alladian) (Djeni et al., 2011 as cited by Trazié, 2019). Originally, attiéké was prepared and consumed exclusively within a restricted ethnocultural framework of the southern peoples occupying the Ivorian lagoon border. These are the Adjoukrou, Ebrié, Alladjan, Avikam, Ahizi ethnic groups (Egnankou, 2020).

In Adjoukrou country, for example, the dietary importance of cassava among the populations is attested by Akmel (2005) cited by (Akmel, 2018). Indeed, before and during all age-group ceremonies such as the low, agbadji, Ebeb, the bulk of the dishes are based on cassava, food particularly based on cassava are consumed (Akmel, 2018).

Food habits of Agni, N'Zima and Baoulé women:-

Among the Akan of the east (the Agni), the lagoon-dwelling Akan (N'Zima) and the Akan of the center (Baoulé) of Côte d'Ivoire, a specific term designates the woman who has given birth: it is "ta" in Baoulé, "éta" in Agni and "danin" in N'Zima. The word translates the idea of removing, educating, caring for someone. The importance given to food and sanitary norms during the post-partum period can be explained by the aesthetic and therapeutic logics governing the diet of women in childbirth, as in many so-called traditional societies. The results reveal an identical construction of the sanitary and dietary components of the "ritual of childbirth" in the villages of origin of the Akan in Ivory Coast (Adiko et al., 2019).

In the three groups visited, the mother takes her first light meal based on maize, millet or rice porridge considered to promote the rise of breast milk, in the morning (from 7:00 to 8:00 am). At noon (from 12:00 to 1:00 pm) and in the evening (from 7:00 to 8:00 pm), yam, banana or cassava foutous are on the menu in order to help the mother recover her strength. The main sauce is a hot pepper-based sauce that, according to those interviewed, helps to alleviate the "belly sores" (internal pains) caused by childbirth. Seed, eggplant, taro leaf and spinach sauces are also consumed. Among the Baule and Agni, "bush meat", beef, mutton and chicken are offered to the mother to give her strength, demonstrating in this context the idea of energy and strength linked to bush meat and meat in general. Among the N'Zima, it is rather fish that is given as an energizing resource and hot foods that are considered to heal "stomach wounds" (Adiko et al., 2019). New varieties of food were introduced in all three groups: to help the mother produce breast milk, "quaker" (or oatmeal) and coffee (with milk) with bread are consumed in the mornings. This demonstrates the adaptation to non-traditional foods that are nevertheless considered beneficial. When the birthing woman is well fed, she recovers and grows quickly and the baby also grows" (Adiko et al., 2019). Among the Lagoon Akan, cassava foutou with ripe banana, accompanied by palm seed sauce commonly referred to as "seed sauce," is usually served to the birthing woman because it is perceived as an overweight and lactation-inducing food (Adiko et al., 2019). Ultimately, the variability and sustainability of daily diets are considered necessary for meeting the nutritional needs of rural Akan birth attendants (Adiko et al., 2021).

Dietary Habits of Adjoukrou Nannies:-

Among the Adjoukrou (Akan people, lagoon-dwelling in the Department of Dabou, in the southern coast), the wet nurse or "wawôyow" in the Adjoukrou language, is subjected to special treatment. In the care of her family, she is fed with the mythical Adjoukrou dishes: (1) fougou (or cooked plantain paste, roughly pounded) in red oil with well-spiced sauce and shark and (2) "mamissou" (vegetable leaf sauce), accompanied by attiéké in red oil (Nomel, 2017).

Food habits of rural people in western Ivory Coast:-

They consume rice (Bognon, 1987), cassava foutou, unripe banana foutou mixed with cassava, ripe banana foutou mixed with cassava, ripe banana foutou, banana fougou as a starchy main course. They mainly consume clear sauce, seed sauce, baouin sauce, sinco sauce, eggplant sauce, fresh okra sauce and peanut sauce. To these sauces are added the protidic foods such as frogs, meat or fish (Kunindjani, 2021).

Dally et al (2018) showed that the Dida, the constitious people of the Krou, use spontaneous food plants to make typical sauces, including "Tchitechri-devio" (*Heterotisrotundifolia*), "kaklou" (*Irvingiagabonensis*), "wawayo" (*Abrusprecatorius* Linn.) etc. In Côte d'Ivoire, the Krou (Gouro, YacoubaGuéré) are among the largest consumers of edible insects (*Cirinabutyrospermi*, *Imbrasiaoyemensis*, *Rhyncophorusphoenicis*, *Macrotermessubhyalinus*, etc.) (Ehounou et al., 2018). This is part of their feeding habits (Moussa, 2002).

In the villages of the department of Man (in the mountainous west of Côte d'Ivoire), rural people also consume cassava toh and rice accompanied by sauces made from vegetable leaves (*Byttneriacatalpifolia*, *Beilschimidiamannii*, *Sesamum radiatum*, *Beilschimidiamannii*) (Yéo et al., 2021).

Food habits of rural peoples in northern Ivory Coast:-

The Abron and the Koulango, the Gour (or Gur), place great importance on yams. However, among the Abron, plantain (bôdié) was the basis of their diet. They also eat taro (Sié and Ibo, 1990). The Abron were "foutou eaters" in their Ashanti homeland (Koby, 1974). Maize was originally part of the Koulango diet. Abron and Koulango eat

game and meat as part of their meals because they hunt ("agouti," rats, deer, etc.) and sometimes fish (Sié and Ibo, 1990).

The staple food of the Koulango and Lobi populations (from the eastern periphery of the Comoé National Park, Côte d'Ivoire) consists mainly of products from the processing of yam (*Dioscorea* spp.) and cassava (*Manihot esculenta* Crantz.) tubers and flour from cereals such as millet (*Pennisetum americanum* L.), sorghum (*Sorghum bicolor* L.) and maize (*Zea mays* L.) (Kouakou et al, 2020).

In the north, people regularly consume foutou (of yam, foutou of taro, foutou of taro mixed with cassava, t \hat{o} h (of maize or millet. They eat eggplant sauce, clear sauce (soup or vegetable sauce), peanut sauce, peanut sauce with "dah", fresh okra sauce, pistachio sauce, "dah" sauce. The main sources of protein are fish, meat and poultry (Kunindjani, 2021).

According to Soro et al. (2019), edible mushrooms are not part of Malinke culinary habits.

In northern Côte d'Ivoire, the Mandé and Gur (Senoufo, Tagbanan, Malinké etc.) are among the largest sellers and consumers of edible insects (Ehounou et al., 2018). This is part of their dietary habits (Moussa, 2002).

In Dabakala and Niakara, two localities in north-central Côte d'Ivoire, 97%, 93%, 96% of the population consume yam, cassava, and groundnut, respectively, and this consumption does not vary according to the town. Similarly, 79% of the population prefers yam foutou and 57% prefers boiled yam. Cassava is consumed more in the form of attiéké (86%) and placali (46%). Groundnuts are consumed by 83%, 55% and 35% of the population respectively in sauce, roasted with the shell and fresh (Camara et al., 2018).

Note that the Abron are part of the Akan group, the Koulango, on the other hand, are part of the Gour group. However, they have the same eating habits because they are neighbors.

Totems, taboos and traditional food prohibitions of the rural peoples of Ivory Coast:-

Background on traditional food totems, taboos, and prohibitions of rural peoples in Ivory Coast:-

Asi and Teri (2016) note that food practices that consist of prohibiting oneself from eating a food, exist in all African cultures and societies and vary from one community to another. The existence of these totems, taboos and food prohibitions is a general phenomenon in Black Africa. They may be specific to an ethnic group or a village, or even a family lineage (Tanumihardjo et al., 2007). These beliefs, for the most part, were created by the "great men" of the past (the ancestors) (Razafimpahanana, 1970). Bisogni et al (2002) conclude that the food repertoire is linked to a culture. For, although nature offers a multitude of edible foods, only a small proportion of these foods are accepted by the culture. Indeed, some foods are rejected or considered sacred because of totems, taboos, and food prohibitions, even though these foods may provide necessary nutrients to different peoples (Walsh, 2002). But at the same time, these forbidden, totemic, and taboo foods could be feeding the population that is malnourished. Thus, due to a lack of knowledge and means of verification, populations prefer to impose a food as forbidden or totemic to prevent it from poisoning other people (Walsh, 2002).

In Ivory Coast, there are either totems, taboos or food prohibitions. The totemic fact is attested among the populations of the main ethnic groups of the country: Akan, Gour, Krou and Mande. Several considerations are at the origin of a food ban. The adoption of a ban corresponds in most cases to an attitude of gratitude towards an animal or sometimes a plant which, according to the original myths, would have rendered an appreciable service to an ancestor in difficulty in the early days of the group's life (Zézé, 1989). Thus, totems and prohibitions constitute food practices and reflect the cultural identities of a group. This allows us to understand the logics, representations and construction of their identities (Doukouré, 2013).

The consumption of certain fish species is regulated or even prohibited in some Ivorian communities: among the Worodougou of the Centre-North (Madoba site in Oussougoula by Séguéla), the Abron and Koulango of the North-East (Transi site in Bondoukou) or among the Agni of the Centre-East (Socotè site in Bongouanou) (Akindès, 1995; Koné et al., 2018).

d. Totems, taboos and traditional food prohibitions among the Akan:-

In Akan country, specifically among the Agni in the southeast of the country, a pregnant woman must not eat the potato to prevent the child in the womb from entangling with the umbilical cord. As this food is considered to be creeping, the umbilical cord could become entwined with its stems. In addition, to avoid miscarriage or severe bleeding during delivery, a pregnant woman should avoid eating taro (Yoro et al., 2015) (Yoro et al., 2015). This is also seen among pregnant women in the Baule culture of Kongodékro, who are forbidden to consume certain edible fruits, vegetables or legumes, and animal and fish species during the entire pregnancy period at the risk of bleeding, swelling of the feet or breasts, or loss of the pregnancy (Anoua, 2017). Among the Ebríés, in the south of Ivory Coast, belonging to the greater Abidjan area, when a woman is pregnant, there are dietary prohibitions to which, she must adhere. For example, the pregnant woman must comply with the prohibition of consuming the cat so as not to have children who are turbulent and/or who, when crying, produce cries resembling the cat's meow (Coulibaly and Gbété, 2017). According to Doukouré (2013), traditional prohibitions and totems are values that have an impact on the health of actors coming from a social group. This is notably the case among the Agni of the Center-East whose prohibition of consumption of fish from Lake "Socotè" and by extension to the taboo of catfish for members of the entire community. The ban on catfish is perceived as a resource for the preservation of identity and social integration. As such, breaking this dietary norm is seen as a source of social disintegration and denial of one's identity (Koné et al., 2018). Inherent in all cultures, these provisions are often a set of beliefs, myths, and medical norms, passed down through generations.

e. Totems, taboos and traditional food prohibitions among the peoples of the Southwest:-

In the southwest, among the Dan, when a woman is pregnant, she must not eat eggs, palm rat meat, agouti and squirrel at the risk of frequent illnesses that will strike the unborn child when it is born (Ehui and Kané, 2017). Among the Nyabwa, a people of the southwest of the country, according to the story, two enemy brothers had been fighting to the death for several hours. Neither of them wanted to admit defeat, but towards evening, a warthog came between them. He charged each of the two brothers in turn, until they dispersed. Later, recognizing the service they had rendered, they decided not to eat any more of this animal with its fraternal behavior (Zézé, 1989).

Totems, taboos and traditional food prohibitions related to pregnancy among the peoples of Ivory Coast:-**f. Among pregnant Akan women:-**

Pregnant women in the Baule culture of Kongodékro (Bouaké, 2nd largest city in Ivory Coast) are forbidden to consume certain edible fruits, vegetables or legumes, and animal and fish species throughout the pregnancy period at the risk of bleeding, swelling of the feet or breasts, or loss of the pregnancy (Anoua, 2017).

Among pregnant and lactating Ébriéakouai women in Bingerville, the dietary prohibitions consist of papaya, pineapple, and sugarcane, orange (Coulibaly, 2017).

Among the Akan of the east, the Akan lagoon and the Akan of central Ivory Coast, regarding the dietary prohibitions that the birthing mother must respect, the consumption of rice is prohibited among the Agni for one month because "rice stings in the wound of the birthing mother's belly," according to the interviewees. Furthermore, in the early postpartum period, it is not recommended to consume peanut sauce because it "sticks in the wound of the belly and causes belly pain" (Adiko et al., 2019).

g. Pregnant women in the North (Gur or Malinké):-

In the north of the country, pregnant women in the Malinké country of Odienné have food taboos associated with pregnancy. These food taboos can be classified into four categories: the animal kingdom, the vegetable kingdom, prepared foods and salt.

The consumption of alloco (fried plantain cut into slices) is said to cause an illness in the unborn child called begnan, characterized by abdominal pain and greenish or yellowish stools. Moreover, alloco is a sweet food. Yet, excessive consumption of sugar is said to cause abundant bleeding during childbirth (Kouadio, 2017).

Cashew is also a food ban. It is said to contain the acid "koumou". In view of this acidity, during childbirth, the parturient would have excruciating pain in her feet. The contractions would be strong. The acid would cause an abundance of amniotic fluid "dji". The child would remain thin. This liquid eats the child "a hédédomi nan" (Kouadio, 2017).

Like cashew nuts, mango, especially unripe mango, is a forbidden food. It is said to have acidic properties. As a result, these two foods would have similar effects. Moreover, according to Ivorian Malinke tradition, the abundant

consumption of ripe mango would have the same effects as those of ripe food, such as a loco (delivery hemorrhages) (Kouadio, 2017).

If a pregnant woman consumes lying down food, especially lying down rice, at delivery, she would pass stool in bed. This would be a sign of humiliation. The lying down food would make the woman heavy. The fetus would therefore no longer be lively; it would sleep a lot in the womb (Kouadio, 2017). As a result, lying down foods, as well as any type of cooked food that is not consumed entirely on the same day, constitute food prohibitions or taboos.

It is considered in Malinke country that catfish are very slippery. It is said to be slimy "nongo" and to drool a lot "a dadjéjébonan". If the pregnant woman consumes this fish, the unborn child will salivate a lot. Moreover, the catfish would symbolize impurity, nongo dirtiness and bad luck "yéridjéguédjougou". From this point of view, the child's future would be mortgaged or dirty. That is to say, he would have difficulty thriving (Kouadio, 2017).

The wild cat or bush cat "gbingninwara" would be the totem of a family bearing the surname "Doumbia". If this surname is carried by a pregnant woman or the father of her child, she should not consume the flesh of this animal. In case of transgression of this prohibition, they would have oral lesions, swelling of the lips of the pregnant woman or the unborn child (Kouadio, 2017).

Impact of the food habits of the peoples of Ivory Coast on their health:-

Spontaneous food plants, used by the Dida, a constituent people of the Krou, to make typical sauces, provide them not only with nutrients but also physiological well-being (Dally et al., 2018). According to Kunindjani (2021), Ivorian traditional dishes have nutritional values that can guarantee their health.

However, the traditional food totems, taboos, and prohibitions inherent in the eating habits of the people of Ivory Coast can impact their health.

Pagezy (2006) notes that in many African societies, dietary prohibitions particularly concern animal species, rich in good quality proteins such as game. This undeniably impacts, in some way, the quality of the diet of these societies. According to Doukouré (2013), traditional prohibitions and totems are values that affect the health of actors coming from a social group. Gittelsohn and Vastine (2003), Legwegoh and Riley (2014) abound in the same vein: several socio-cultural factors, such as food beliefs, can also influence the quality of food. This is corroborated by Yoro et al. (2015) who found that the dietary practices and choices of certain ethnicities or tribes are one of the cultural causes of malnutrition.

Despite all their nutritional interests, the consumption of certain fish species is regulated or even prohibited in some Ivorian communities (Akindès, 1995; Koné et al., 2018). This is harmful in terms of nutritional intake for the populations targeted by these dietary bans.

Food taboos, in the Malinké country of Odienné, concerning animals, prepared foods, and salt, affect pregnant women (Pagezy 2006). As well as breastfeeding women and young children. They constitute biologically vulnerable social categories because they have increased protein needs for gestation, lactation or growth (Pagezy and de Garine 1990). Among the EbriéAkouai of Bingerville, pregnant women must respect traditional dietary standards. This is not without effects on nutritional advice. These effects are multiple and result in non-compliance with nutritional recommendations. At the same time, they show the limits of nutrition education for Ebrié gestating women (Coulibaly, 2017). When faced with nutritional advice, pregnant women sometimes choose to refer to traditional dietary norms (Coulibaly, 2017).

Nutritionists believe that individuals who have the right information will be led to comply with it. "However, it is not enough for information to be considered correct to be able to rectify dietary behaviour" (Kaufmann, 2006, 29). The possession of knowledge does not necessarily modify "risk behaviors" (Peretti-Watel, 2001).

It is also known that in all traditional societies, there is lay dietetics that provides a body of knowledge in the preventive and curative perspective (Apfelbaum and Romon, 2004).

Adequate nutrition is first and foremost the body's first line of defense against disease and provides it with the energy necessary to lead an active life. Diseases due to poor nutrition and malnutrition are diverse: obesity, diabetes, cardiovascular disease, kidney disease, gastrointestinal disease, etc. (UNICEF, 2019; FAO et al., 2020)

In tropical areas, anemia is mainly due to iron and folic acid deficiency. It is of particular interest to pregnant women and children under the age of five (DIIS, 2019).

In Ivory Coast, malnutrition has consequences on child mortality (RCI, 2015). It contributes to 33% of child mortality, resulting in an estimated 128,354 under-five deaths each year. Malnutrition negatively impacts intellectual development and learning abilities. Malnutrition has an impact on maternal mortality. Iron deficiency contributes to increased risk of postpartum hemorrhage and anemia in pregnant women (RCI, 2015)

Conclusion:-

The aim was to summarize the work already done on the eating habits of the rural populations of Ivory Coast and to deduce in perspective what needs to be studied in a context of climate change.

The eating habits of rural Ivorian people are influenced by several factors, notably cultural identities, nutrition criteria, ways of preparing and consuming food, but could also be influenced by disasters, crises (economic, war, etc.), climate change, etc.

The food habits of rural people in Côte d'Ivoire are based on several foods, mostly local. Tubers (yam, taro), roots (cassava), plantain, cereals (rice, maize, millet, sorghum) are used as main dishes, prepared under various recipes (foutou, attiéké, toh, placali, etc.). These main courses are accompanied by sauces made of vegetables and fruits (okra, eggplant, peanuts, palm seeds, chili peppers, tomatoes, etc.), vegetable leaves, meat, game, fish, insects, etc. The Akan people identify themselves through dishes such as foutou of yam, foutou of banana mixed with manioc, fofou and attiéké while those of the North (the Malinké and Gour) of the country identify themselves by the toh of corn or millet, foutou of yam while those of the West (the Krou) identify themselves by dishes such as rice, foutou of manioc, placali. In addition, they are all subject to dietary restrictions of one kind or another, most of which are focused on proteins such as fish and game.

However, these peoples have many totems, taboos and food prohibitions of animal and vegetable origin, rich in protein and energy for children, pregnant and lactating women good at providing energy. This deprivation of nutrients and energy is likely to affect their nutritional status and even their health (malnutrition, stunted growth, anemia, etc.).

All the research carried out on the eating habits of rural Ivorians is not correlated with a global context, notably climate change, which is capable of affecting agricultural production and, consequently, eating habits.

In perspective, we plan to study the impact of climate change on the dietary habits of the people of Ivory Coast, more precisely on the Adjoukrou, a people located in the southwest of Abidjan.

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