

Data Sheet on the Potential Impacts of Climate Changes on Consumption Patterns of Plantain Based Foods most consumed in Urban Area of Abidjan, Côte d'Ivoire

Data Sheet: Potential Impacts of Climate Changes on Consumption Patterns of Plantain

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Abstract— Until recently, most assessments of the impact of climate changes on the food and agriculture sector have focused on the implications for production and global food supply, with less consideration of other components of the food chain. This paper examines how climate changes could effect on plantain food systems in Cote d'Ivoire and food security. Thus, our study was carried out in order to list the varieties of banana and plantain mostly used by housewives and restaurant dealers and to describe the various culinary preparations used for their transformation. It suggests that on the Ivorian market and availability in production volume, there is first the Afoto (Musa AAB, Horn) variety, followed varieties Agnrin (Musa AAB, French horn) and Ameletiha (Musa AAB, French) and finally Kpatregnon (Musa AAB, True Horn) variety which are popular plantain cultivars in Ivorian marketing system. Yet, overall preference of plantain cultivars according to the ripeness and food uses are Afoto (Musa AAB, Horn) variety, followed varieties Agnrin (Musa AAB, French Horn) and Ameletiha (Musa AAB, French) and according to consumer preference, eleven (11) food preparations containing plantain were identified.

Keywords— climate change, banana variety, plantain, food security, global environmental change.

I. INTRODUCTION

It has been noted that today Ivorian agriculture continues to suffer from severe climatic hazards that negatively affect the productivity of an agriculture that has until now been almost rain-fed. This phenomenon, combined with strong demographic pressure, constitutes a major threat to food and nutritional security [1]. Plantain (Musa AAB) is one of the most important food crops in tropical regions of the world and is a major source of energy carbohydrates for human consumption. This paper shows how

climate change could affect plantain food systems in Côte d'Ivoire. This work was carried out in a changing climate context in an urban environment in the Abidjan region.

Objectives

The aim of this paper is to identify plantain (*Musa* spp., AAB genome) cultivar preference, local processing technics and consumption patterns of plantain based food most consumed in urban area of Abidjan district, economic capital of Côte d'Ivoire.

II. METHODOLOGICAL ASPECTS

The survey was conducted on the markets (Fig. 1) and the households of five (5) urban councils of Abidjan, the economical capital city of Côte d'Ivoire, using focus group discussion (FGD) and household interviews (HHIs) respectively during the month of November 2012 (Fig. 2). Abobo, Cocody, Adjamé, Yopougon and Treichville urban councils were selected based on the high intensity of plantain consumption [2].



Fig. 1. Visit to a "wholesale" plantain market in the commune of Adjamé (Abidjan-Côte d'Ivoire) [3].



Fig. 2. Family photograph after the Focus Group [3].

III. RESULTS AND DISCUSSION

In the marketing channel and distribution of plantain (Fig. 3), the most popular cultivars identified included four (4) *Musa* cultivars merchandized by women trader's plantain on the market (Fig. 4) among so many varieties identified in Côte d'Ivoire [4].

Among varieties existing, only three plantain (*Musa* sp) varieties are available because they are resisting to the increase of temperature due to climate changes. And in the food system of Côte d'Ivoire, preparation and consumption of plantain causing greater instability in the food supply. According to ripening stage, the preference of plantains differs from one cultivar to another Ameletiha is the most preferred cultivar, followed by Agnrin, Afoto and Kpatregonn respectively (Fig. 5).

Thus, according to consumer preference, eleven (11) food preparations of plantain were identified (Table 1, Fig. 5). In Côte d'Ivoire, climate changes have a direct impact on plantain (*Musa* sp) production, through temperatures rising and changing rainfall patterns and seasons. Plantain yields, however, have been seriously declining, threatening food security and the livelihoods of millions of subsistence farmers and their families.



Fig. 3: Marketing channels and distribution for plantains in Abidjan (Côte d'Ivoire) [3].

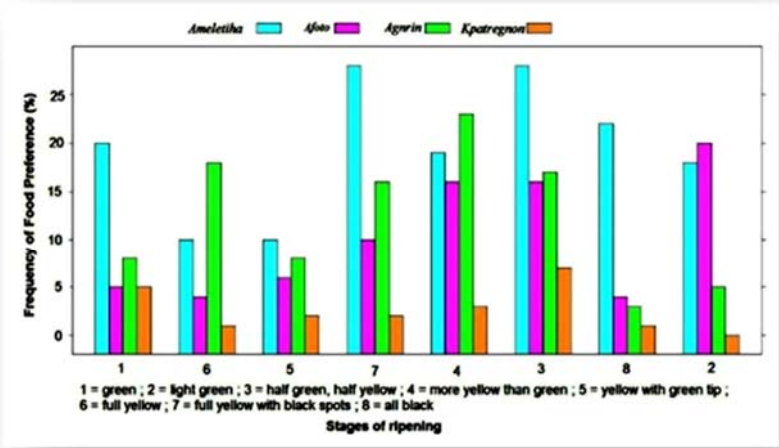


Fig. 4: Overall preference of plantain varieties according to ripeness stage [3]



Fig. 5: Popular plantain cultivars (*Musa* spp., AAB genome) in Côte d'Ivoire [3]

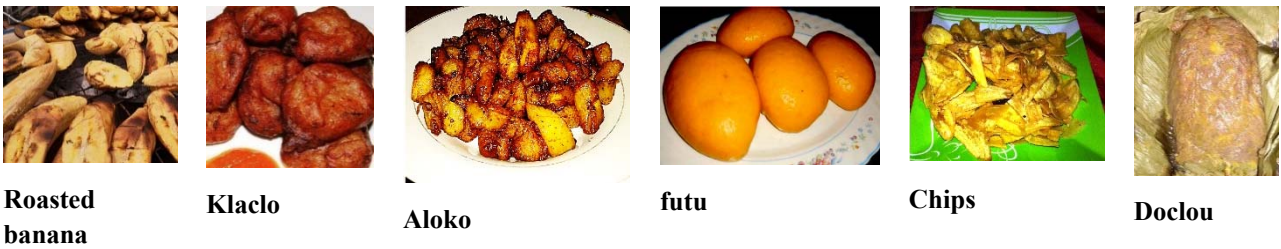


Fig. 3: food preparations containing plantain were identified [3]

Table 1: Local cooking/processing methods applied to Musa cultivars selected [3]

Designation Foods	Cultivar local Name (Genomic group)	Ripening stage at use	Traditional culinary preparations	Cooking method	Cooking ingredients	Common accompaniments
faf5	Afoto (AAB, False Horn)	yellow with green tip (stage 5)	futu	Boiling	Water, cassava	Various sauces (peanut sauce, palm nut sauce...)
faf2	Afoto (AAB, False Horn)	light green (stage 2)	futu	Boiling	Water, cassava	Various sauces (peanut sauce, palm nut sauce...)
raf2	Afoto (AAB, False Horn)	light green (stage 2)	Roasted banana	Roasting	-	Peanut
fag4	Agnrin (AAB, French)	more yellow than green (stage 4)	futu	Boiling	Water, cassava	Various sauces (peanut sauce, palm nut sauce...)
fag1	Agnrin (AAB, French)	green (stage 1)	futu	Boiling	Water, cassava	Various sauces (peanut sauce, palm nut sauce...)
aag6	Agnrin (AAB, French)	full yellow (stage 6)	aloko	Deep frying	Salt, Palm oil	Meat, fish, egg, sauce, attiéké,
aag7	Agnrin (AAB, French)	full yellow with black spots (stage 7)	aloko	Deep frying	Salt, Palm oil	Meat, fish, egg, sauce, attiéké,
fam3	Ameletiha (AAB, French)	half green, half yellow (stage 3)	futu	Boiling	Water, cassava	Various sauces (peanut sauce, palm nut sauce...)
kam8	Ameletiha (AAB, French)	all black (stage 8)	klaclo	Deep frying	Salt, Palm oil	Meat, fish, egg, sauce, attiéké,
cam1	Ameletiha (AAB, French)	green (stage 1)	chips	Deep frying	Salt, Palm oil	-
dam8	Ameletiha (AAB, French)	all black (stage 8)	Doclou	Boiling	Salt, Palm oil,	-

faf5: futu, Afoto, yellow with green tip (stage 5); faf2: futu, Afoto, light green (stage 2); raf2: Roasted banana, Afoto, light green (stage 2); fag4: futu, Agnrin, more yellow than green (stage 4); fag1: futu, Agnrin, green (stage 1); aag6: aloko, Agnrin, full yellow (stage 6); aag7: aloko, Agnrin, full yellow with black spots (stage 7); fam3: futu, Ameletiha, half green, half yellow (stage 3); kam8: klaclo, Ameletiha, all black (stage 8); cam1: chips, Ameletiha, green (stage 1); dam8: Doclou, Ameletiha, all black (stage 8)

IV. CONCLUSION

Climate changes affect all dimensions of food security: marketing channels and distribution for plantains in Abidjan, cultural preference variety of plantain, overall preference of plantain varieties according to ripeness stage and food preparations containing plantain. It will have an impact on human health, livelihood assets, as well as changing purchasing power and market flows.

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