



**KMAP CONSUMER INSIGHTS STUDY  
BY THE GRASS COMPANY - KENYA  
SEPTEMBER 2016**

*Developed for*



*In partnership with*



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## BACKGROUND OF THE STUDY

To conduct quantitative and qualitative research with end consumers as well as relevant key informants in target areas to understand perceptions, preferences and behaviours; related to fish consumption and specifically to Kenyan farmed catfish & tilapia fish.

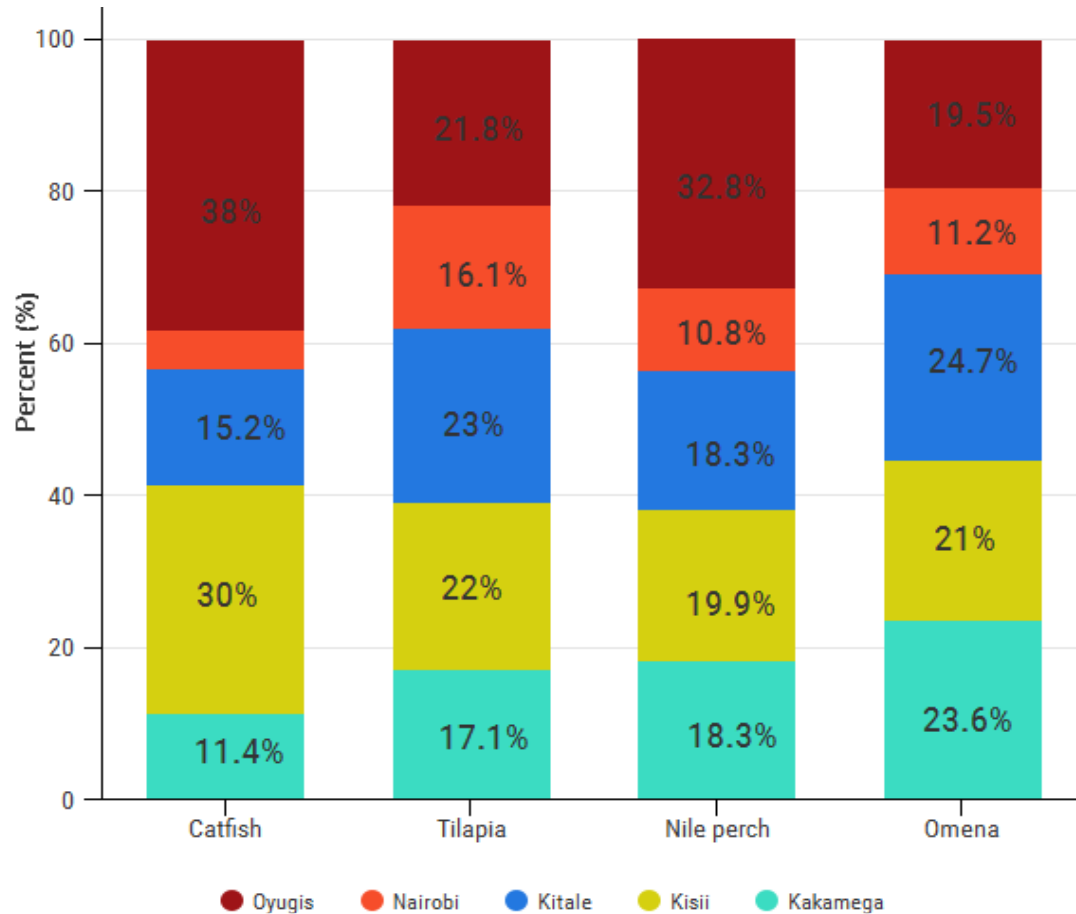
<b>Methodology</b>	<b>Sample Size</b>	<b>Analysis</b>	<b>Scope</b>
Quantitative data collected using an android powered software called ODK	544 Briefs	SPSS	Kisii, Oyugis, Kakamega, Nairobi & Kitale
Key Informant Interviews(Farmers, Vendors, Hotel owners)	15 interviews	Qualitative Analysis	Nairobi, Central, Western
Online briefs(Control Group)	20 Briefs	Qualitative Analysis	Machakos
Focus Group Discussion sessions	40 participants in the grass labs	Qualitative Analysis	Nairobi, Central, Western

## OVERVIEW OF DEMOGRAPHIC- QUANTITATIVE DATA

Characteristic	Frequency n (%)	Characteristic	Frequency n (%)
<b>Gender</b>		<b>Town</b>	
Male	246(45.2)	Kakamega	95(17.5)
Female	298(54.8)	Kisii	101(18.6)
<b>Age (Years)</b>		Kitale	122(22.4)
18 - 25	111(20.4)	Nairobi	103(18.9)
26 – 35	190(34.5)	Oyugis	123(22.6)
36 – 45	142(26.1)	<b>Income</b>	
46 – 55	58(10.7)	Less than Kshs 5000	141(25.9)
55 +	43(7.9)	Kshs 5001-10000	104(19.2)
<b>Level of education</b>		Kshs 10001-15000	40(7.4)
Primary	103(18.9)	Kshs 15001-20000	48(8.8)
Secondary	212(39)	Kshs 20001-25000	21(3.9)
Tertiary	216(39.7)	Kshs 25000+	189(34.8)
Other	13(2.4)	<b>Current occupation</b>	
<b>Residential area</b>		Working	200(36.8)
Urban	382(70.2)	Not Working	97(17.8)
Rural	162(29.8)	Student	45(8.3)
		Business	191(35.1)
		Other	11(2)

There was a slightly high proportion of female respondents (54.8%) in this study which is consistent with the culture in most parts of Africa where the principal shoppers of households are predominantly mature females

## REGIONAL REPRESENTATION



- Fish consumption by town shows that Oyugis had the highest consumption of catfish (38%) followed by Kisii (30%), Kitale (15.2%) and Kakamega (11.4%) while Nairobi (5.4%) had the least number of consumer.
- Tilapia consumption was almost the same across Kitale (23%), Kisii at (22%), Oyugis at (21.8%) on the other hand Kakamega (17.1%) and Nairobi (16.1%) had a similar range. The high consumption in Kitale is attributed to availability and affordability of farmed Tilapia (see slide 6)
- Throughout all regions visited, fish preference was based on price, taste and ease of access.
- Kakamega and Nairobi reported the lowest consumption of Tilapia Fish

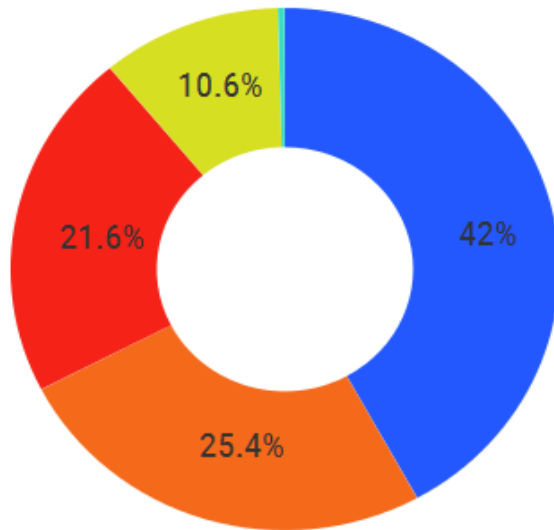
### Observation:

Fish consumption varies from one town to another, with the highest levels reported in towns from the larger Western Kenya region (i.e. Oyugis, Kitale, Kakamega and Kisii).

## RURAL vs URBAN REPRESENTATION

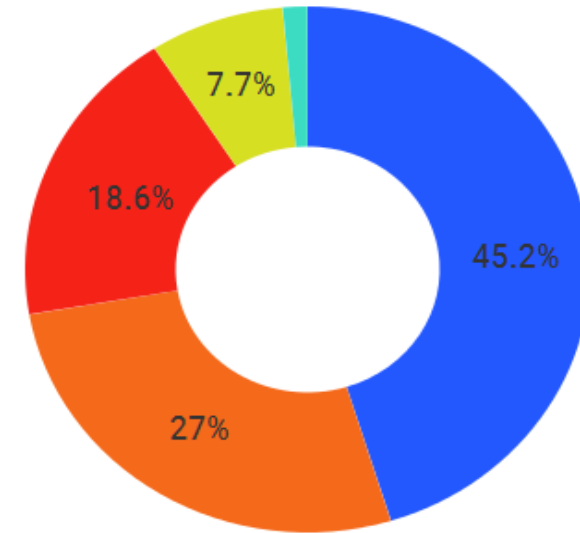
Tilapia fish was a favorite among both Urban and Rural consumers followed by Omena, Nile perch and finally Catfish. Urban area in this case refers to proximity to town centers with an average population of 2000 people while rural populations refers to the areas with low population density (KNBS,2010). In this study, 162 (29.8%) respondents were from rural areas while 382 (70.2%) were from urban areas.

### Fish preference (Rural)



■ Tilapia ■ Omena ■ Nile perch  
■ Catfish ■ Other

### Fish preference (Urban)



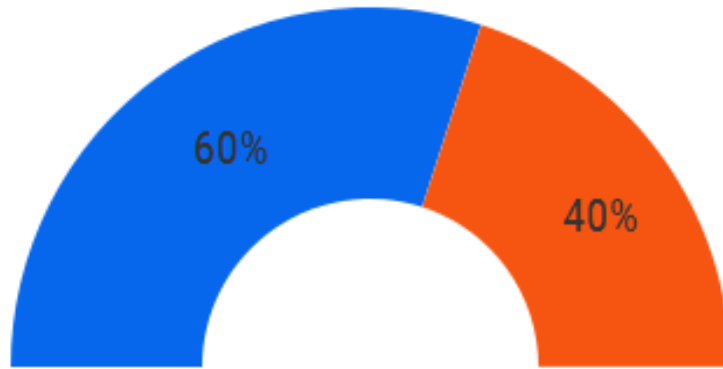
■ Tilapia ■ Omena ■ Nile perch  
■ Catfish ■ Other

### Observation:

Tilapia fish was a favorite among both Urban and Rural consumers followed by Omena, Nile perch and finally Catfish in that order. This is attributed to its availability and taste preference among consumers.

## CONSUMPTION PREFERENCE OF WILD Vs FARMED FISH

Exclusive consumption of wild fish consumption was reported to be at 60% while farmed fish was at 40%.



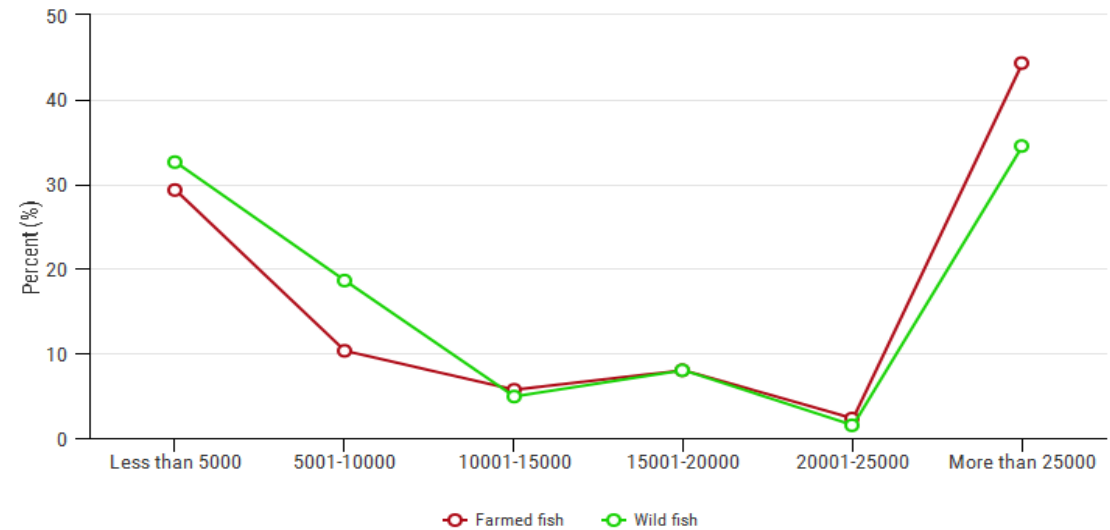
● Wild fish ● Farmed fish

*"WILD FISH IS BETTER BECAUSE IT REARS NATURALLY HENCE NO SIDE EFFECTS. MOSTLY IT'S NOT READILY AVAILABLE. FARMED FISH IS READILY AVAILABLE BUT SOMETIMES IT'S NOT HEALTHY LIKE WILD FISH."* -Kisii

*"FARMED FISH IS CHEAP AND READILY AVAILABLE BUT DOESN'T HAVE A PLEASANT TASTE."* -Kitale

A Chi square analysis was performed to determine if there was an association between consumption of farmed fish and wild fish with various demographic variables. For farmed fish, there was evidence of an association with residential area (region), town & income. For wild fish, there was evidence of an association with income, town, household size, residential area (region) and education level.

### Wild & Farmed fish consumption by income

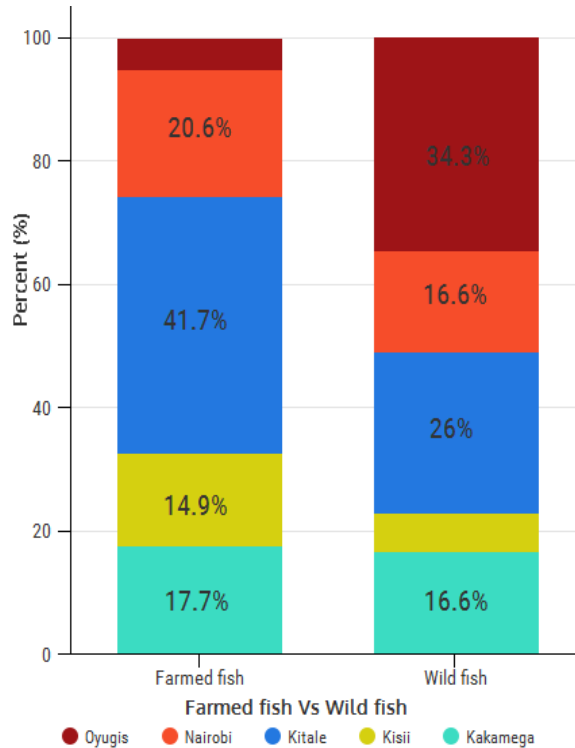


### Observation:

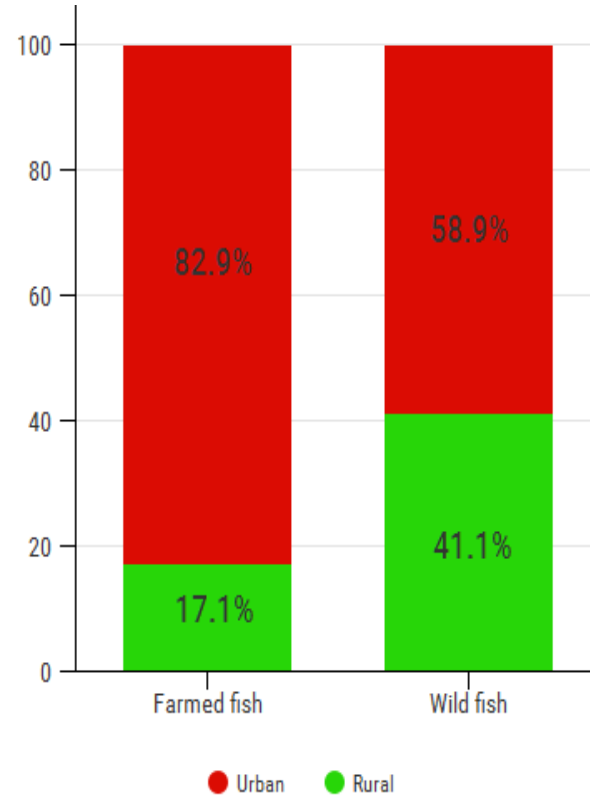
Respondents reported that farmers keeping farmed fish practiced poor feeding habits as a result the fish were small and consumers perceived them as less tasty as compared to wild fish.

# CONSUMPTION PREFERENCE OF WILD Vs FARMED FISH

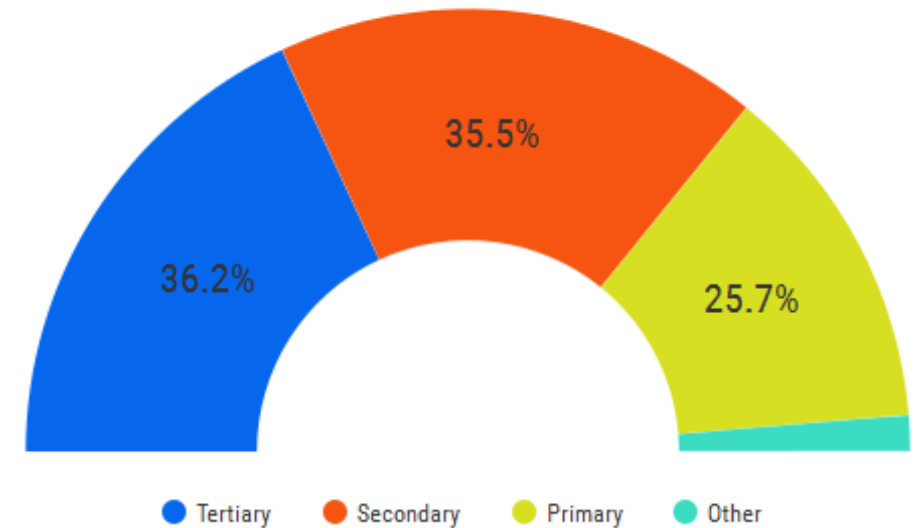
Farmed & wild fish consumption by town



Farmed & wild fish consumption by residential area/region



Wild fish consumption by education level



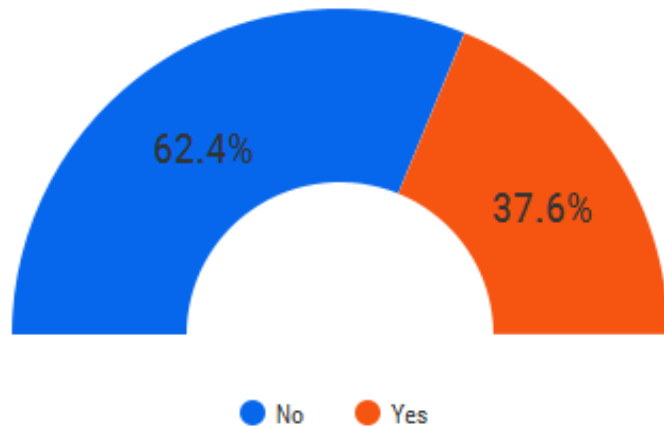
Education is assumed to enlighten consumers about the health and other benefits of wild fish hence, positively influences its consumption. Consumption of farmed & wild fish is high in urban areas due to increased demand.



## CHINESE FISH

62.4% of those interviewed were aware of Chinese fish.

Awareness of Chinese fish among sampled population



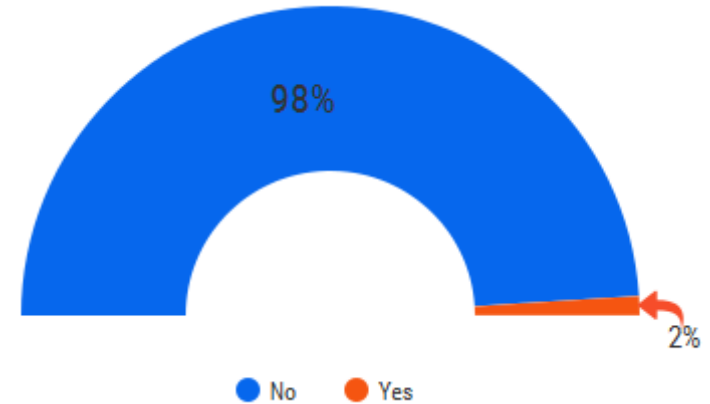
We probed on what they had heard about the fish and they shared with us some information including;

“It’s a certain type of fish brought by Chinese in lake Victoria and only found in Kisumu and is not as sweet as Kenyan fish”

“It is imported from China.”

“It’s poisonous and have drugs in them.”

Percentage of respondents who consume Chinese fish



Among those who recorded knowledge of Chinese fish, only 2% consume it because **it’s cheap** and **readily available** while 98% do not consume Chinese fish.

“I would eat Chinese fish If it has the same taste as local fish and if it will not affect me adversely .”

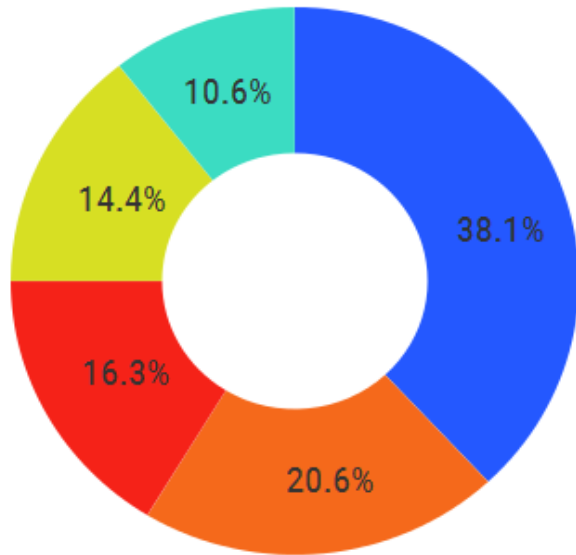
“ If more information about them is available.”

“If it’s approved by the ministry of health.”

## AWARENESS OF CHINESE FISH BY TOWN

A Chi square analysis was performed to determine if there was an association between awareness of Chinese fish and various demographic variables. There was evidence of an association with residential area(region) & town.

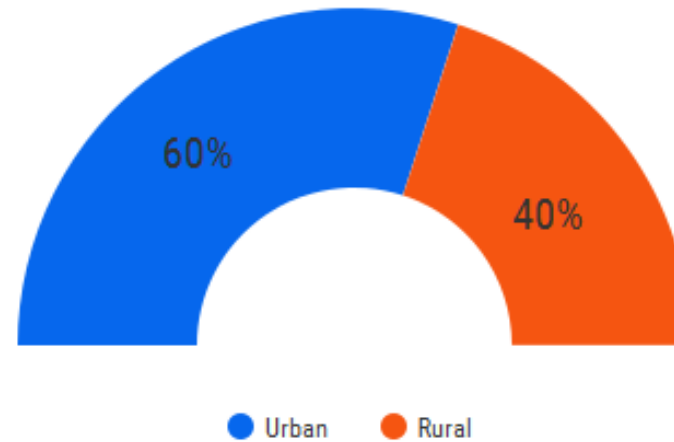
### Awareness of Chinese fish by town



Respondent from Oyugis's were early adopters and reported awareness of Chinese fish to be at 38.1% which was the highest among all regions sampled

■ Oyugis ■ Nairobi ■ Kisii  
■ Kakamega ■ Kitale

### Awareness of Chinese by region



Respondents from urban areas were more aware of Chinese fish (60%) compared to respondents from rural areas.

### Observation:

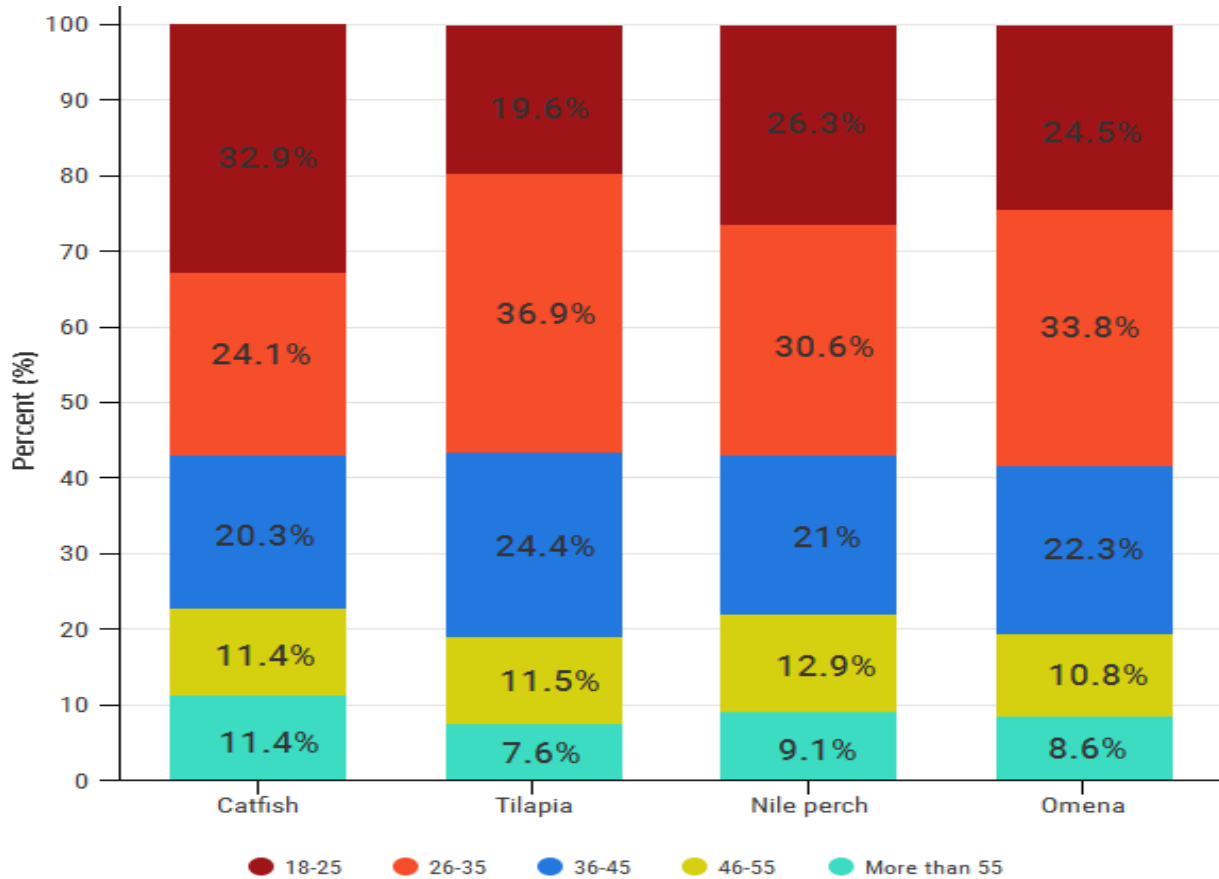
Respondents from Oyugis's were more aware of uncommon types of fish (as observed with catfish and Chinese fish) as compared to other regions hence would be a good entry point to pilot a new concept.



**FINDINGS BY REGION, AGE , GENDER AND INCOME**



## FISH CONSUMPTION BY AGE



- Catfish was highly consumed by respondents aged 18-25 (111) years than those older 46 years and above (58). Those aged 55 years of age and above (43) preferred catfish compared to other types of fish.

This was because catfish is affordable (KES 50/- to 170/-) and has larger bones hence easier to eat especially for non-fish communities.

- Tilapia, Nile perch and Omena were mostly consumed by respondents aged 26-35 (190). Catfish was their least consumed type of fish.

This is because they have a higher disposable income therefore can afford to buy tilapia. Also, as the family size increases the cost of feeding a family increases, therefore they opt for either Omena or Nile perch

### Observation:

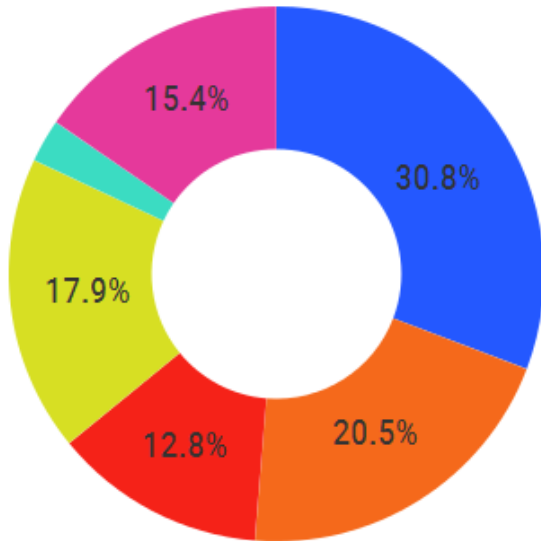
The assumption for consumption of catfish 18-25 year olds is because catfish is cheap (between 50/- to 170/-), easy to prepare in fillet form and easier to eat for non-fish communities.

The preference for tilapia, Nile perch and Omena was driven by income and size of family of respondents

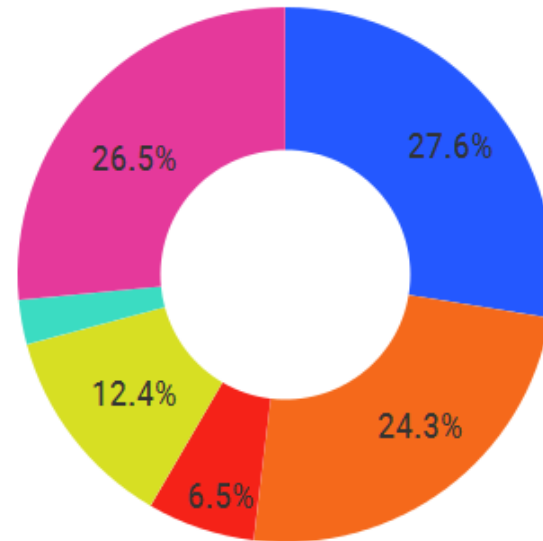
## INCOME DISTRIBUTION AND FISH CONSUMPTION

Respondents earning less than Kshs 5,000 had a high preference for catfish while tilapia and Nile perch were mainly consumed by those earning more than Ksh. 25,000. Catfish was mainly preferred by respondents earning less than KES 5000, while Tilapia was mainly preferred by respondents who earned more than KES 25,000.

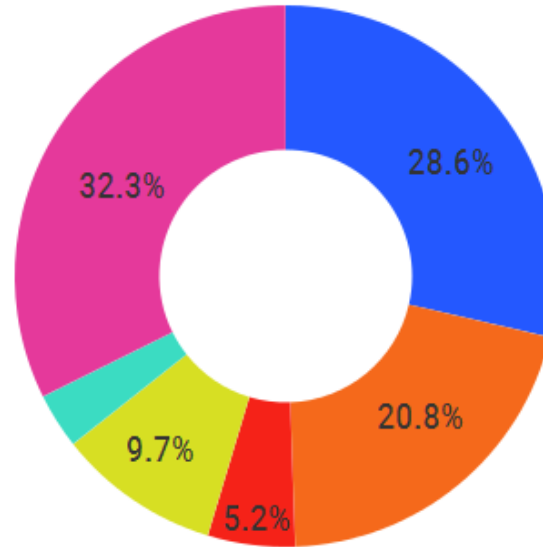
### Catfish



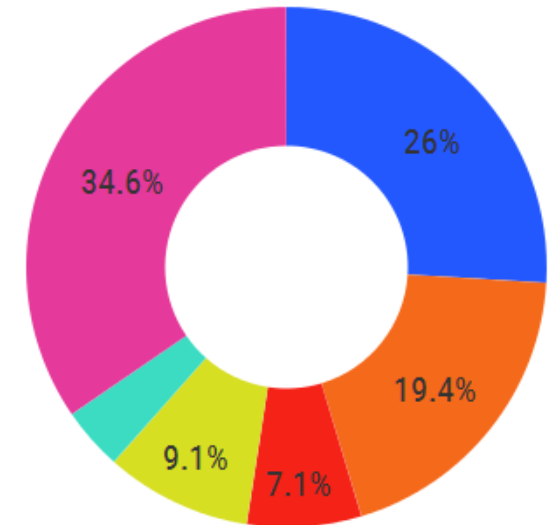
### Nile perch



### Omena



### Tilapia

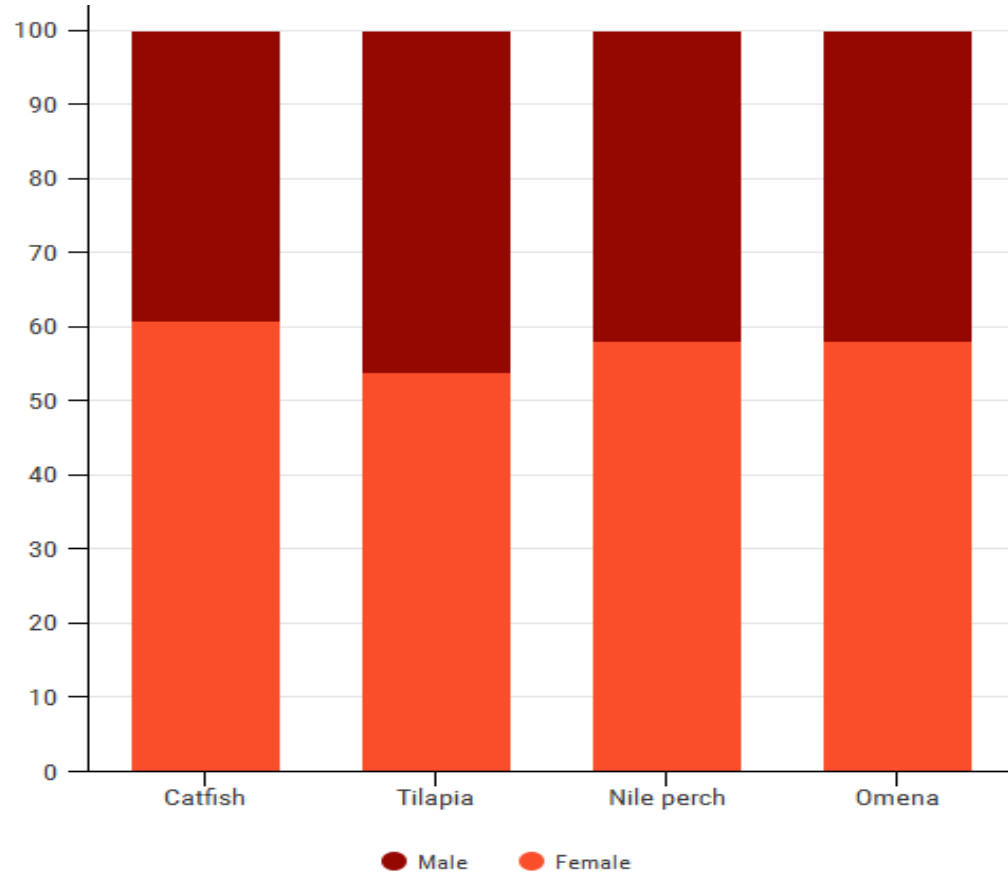


### Observations:

Catfish was preferred by low income earners due to the assumption that it is inexpensive, while Tilapia was preferred by high income earners since it is expensive compared to other types of fish.

## FISH CONSUMPTION BY GENDER

Women consumed more of each type of fish than men. However, men prefer Tilapia when compared to other types of fish.



- Based on qualitative feedback from the grasslabs, online briefs and KIs, women were the main purchasers of fish for the home. They were also very particular about the quality of fish and the vendor that sold the product.
- Due to health consciousness and known benefits of fish such as omega 3, less fats and increase in intelligence.  
“ I prefer fish because it doesn't have a lot of fats.”  
“Its a lean source of protein.”  
“You become clever when you eat fish”

Women and some men shifted from eating red meat and focused mainly on fish and chicken.

Feeding habits among Kenyans (men & women) is changing as they move towards healthier living, with more emphasis being given to white lean meat (Chicken & fish)

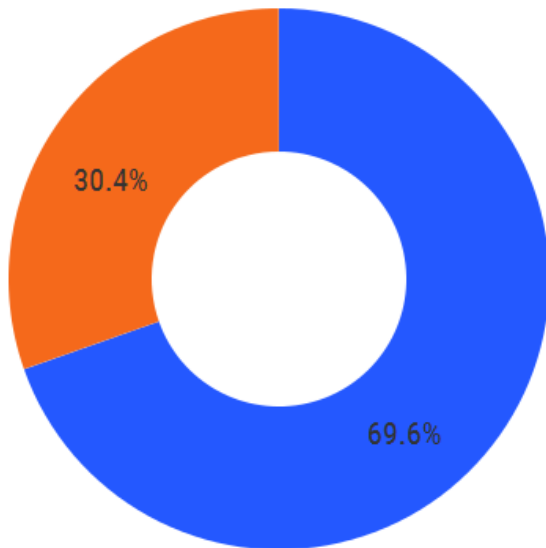


**FINDINGS & RECOMMENDATIONS FOR CATFISH AND TILAPIA**

## CATFISH AND TILAPIA CONSUMPTION

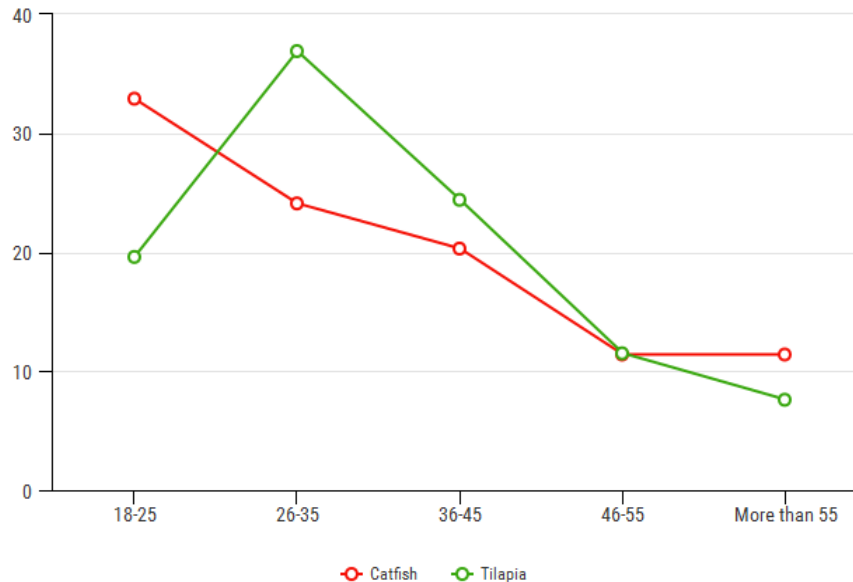
In general, Tilapia (69.6%) was consumed more than catfish (30.4%). A Chi square analysis was performed to determine if there was an association between consumption of catfish and tilapia with various demographic variables. For catfish, there was evidence of an association with age, income and town. For tilapia, there was evidence of an association with town.

### Tilapia & catfish consumption



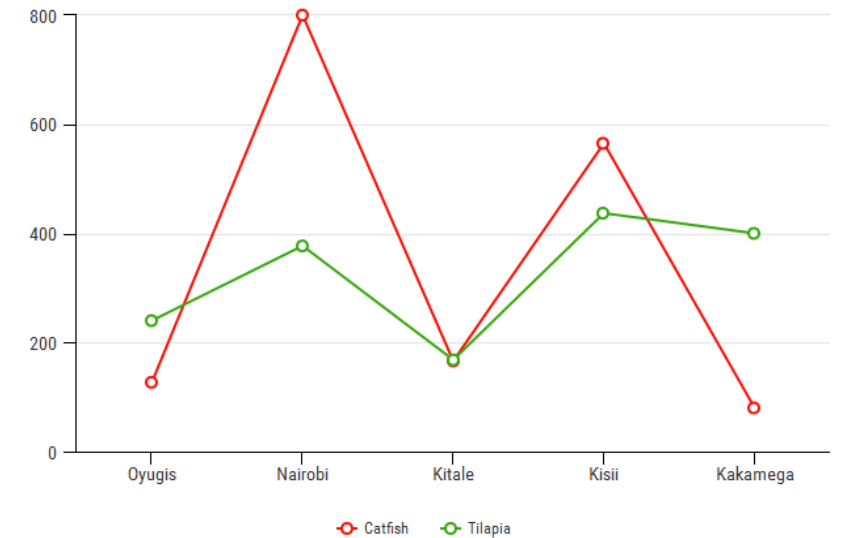
■ Tilapia ■ Catfish

### Catfish & Tilapia consumption by age



It is observed, If you introduced catfish to consumers at an early age, i.e. 18-25 years, there is a higher probability of sustaining them as an active consumer of catfish, as opposed to introducing it to consumers aged 46 years and above.

### Catfish & Tilapia price by town



Nairobi and Kisii had a high cost of catfish and Tilapia



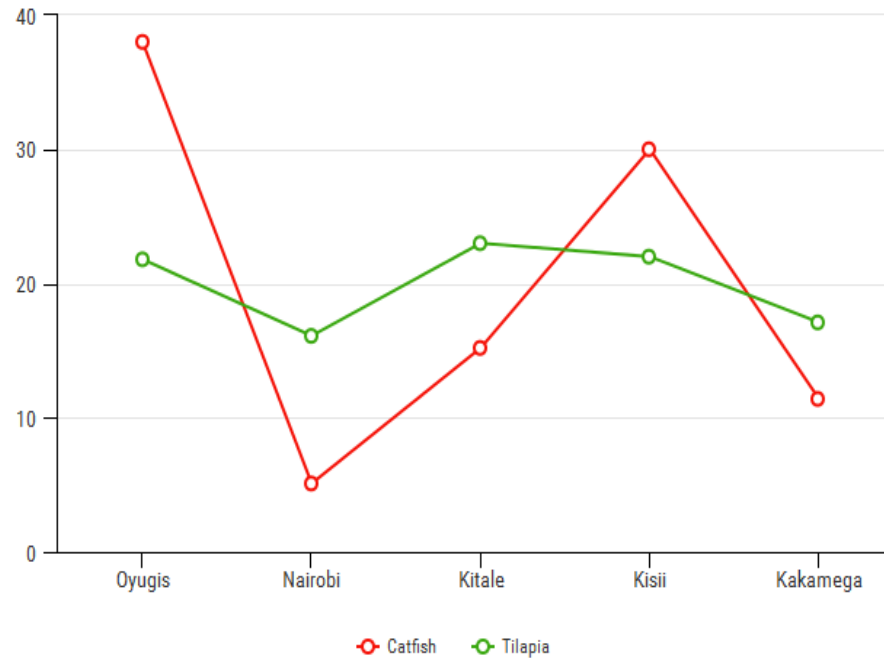
# CATFISH AND TILAPIA CONSUMPTION

## Catfish & Tilapia consumption by income

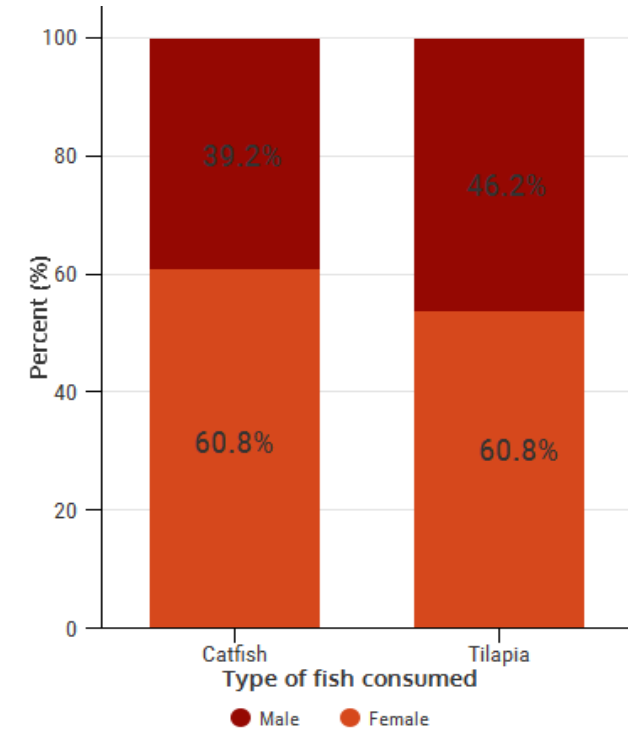


Tilapia was more preferred for high income earners while catfish was more preferred for low income earners

## Catfish & Tilapia consumption by town

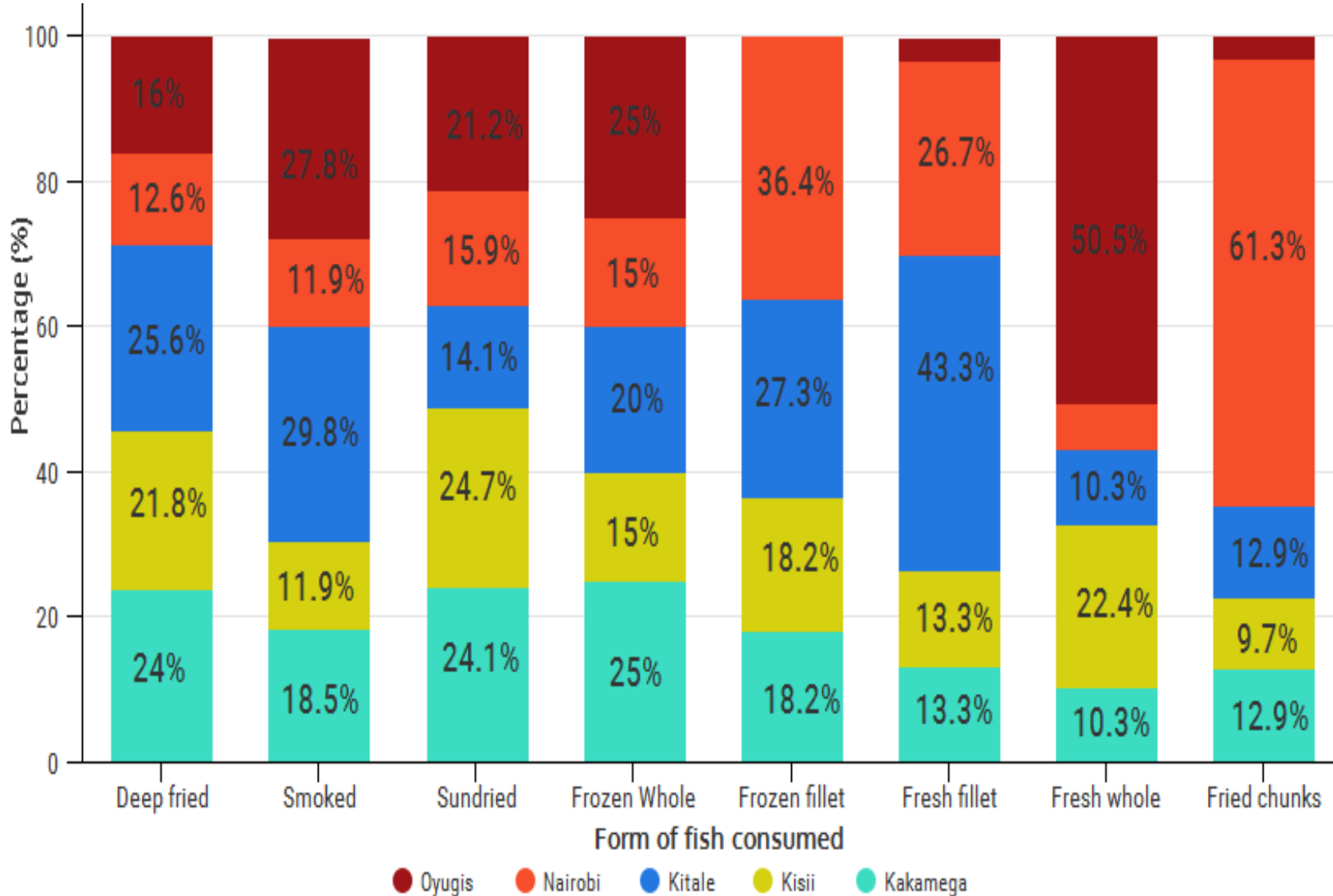


Catfish consumption was more varied than tilapia in different towns. Tilapia on the other hand was more evenly distributed across the regions. This can be attributed to supply, as towns close to the lakeside region (Oyugis & Kisii) had a high consumption for Catfish.



Tilapia and catfish was more consumed by females as compared to their male counterparts

## FORM IN WHICH FISH WAS PURCHASED



- Fried chunks were highly preferred among Nairobi respondents while those in Oyugis had a high preference for Fresh whole fish.
- Kitale had a high preference for fresh fillet while sundried fish was highly preferred by respondents from Kisii.
- Kakamega respondents on the other relatively preferred frozen whole fish, sundried and deep fried fish.

## PREFERRED MEAT AND ITS DETERMINANTS

### Preferred Meat for Kshs 200

#### Nairobi:

- All the respondents except one choose fish or pork as their go to meat.
- The one individual who did not pick fish, did so because they had not had beef and in particular minced meat in a long time.

#### Central:

- Pork meat was highly popular in the area. Other alternatives included goat meat and beef.
- There was little fish eating culture among the respondents. Some of the reasons they highlighted for not picking fish included; fish being expensive and fish is perceived to be meant for communities from the western region

### Determinants of choice of meat

#### Nairobi:

- Meat preference in the household was mainly influenced by; Accessibility and availability, family, religious practices and traditions.
- Preferred meats in restaurants; fish and chicken.

#### Western:

- Meat preference in the household was mainly influenced by; availability and cost, size of family and occasion.
- Preferred meats in restaurants; beef and goat meat

#### Central:

- Meat preference in the household was mainly influenced by; cash at hand, family, availability of the meat, ease and knowledge of meat preparation.

## PREFERRED TYPES OF FISH AND FORMS

### **Nairobi:**

- Omena
- Tilapia
- Catfish

### **Kakamega:**

- Tilapia
- Fish fillet
- Sundried Tilapia (Obambla)
- Catfish

### **Central:**

- Tilapia
- Omena
- Catfish
- Fillet/Fish fingers

### **Oyugis:**

- Tilapia
- Mudfish
- Catfish
- Nile perch
- Omena/Fulu/Okoko

## **Fish fillet**

### **Nairobi:**

Majority had consumed fillet before however they stated that they would only identify what type of fish the fillet was from through taste or the label on the packaging. They prefer whole fish.

### **Western:**

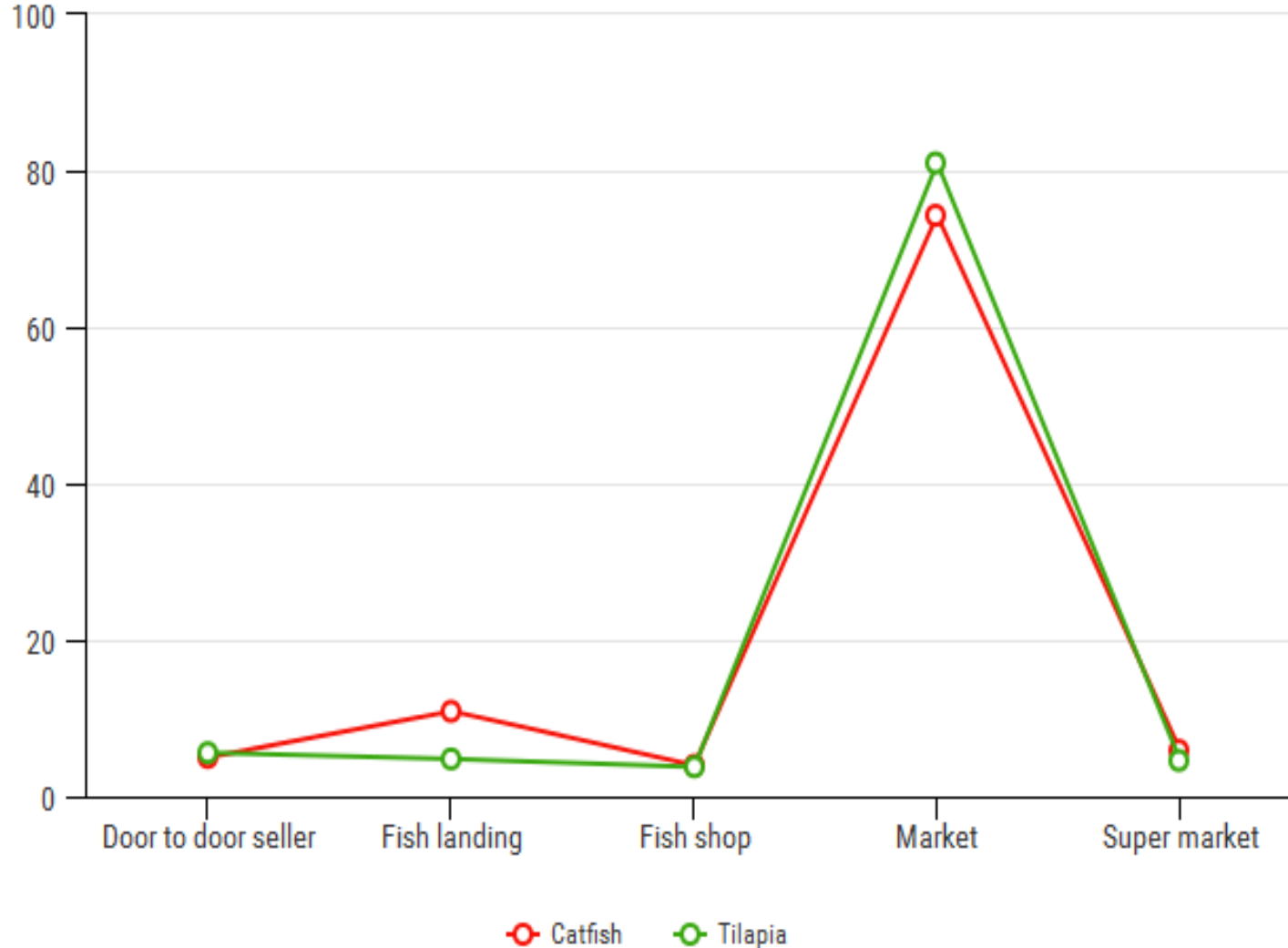
In this region, majority highlighted that Fillet was very different from the fish with bones (Tilapia) they are used to.

In Oyugis, preference of fillet depends on what type of fish the fillet came from. Majority perceived fillet to be from Nile Perch.

### **Central:**

Fillet was the most preferred as many found fish with bones to be too cumbersome to eat. However, some would in equal measure prefer whole fish at a restaurant due to the difficulty in cooking fish.

## PLACE OF PURCHASE FOR CATFISH AND TILAPIA



- Place of purchase for Catfish and Tilapia followed a similar trend with the market being the most preferred location.
- Since majority of the consumers did not have access to the fishermen or farmers, their main source, whether in the urban or rural setting was the market vendor.
- The pull to the vendors is due to the fact that the fresh fish is fried at the location and a customer has the opportunity to pick their preferred size of fish and prepared before them.
- Door to door sellers were infrequent and supermarket fish was viewed as not being fresh unless a consumer was interested in fillet.

## PLACE

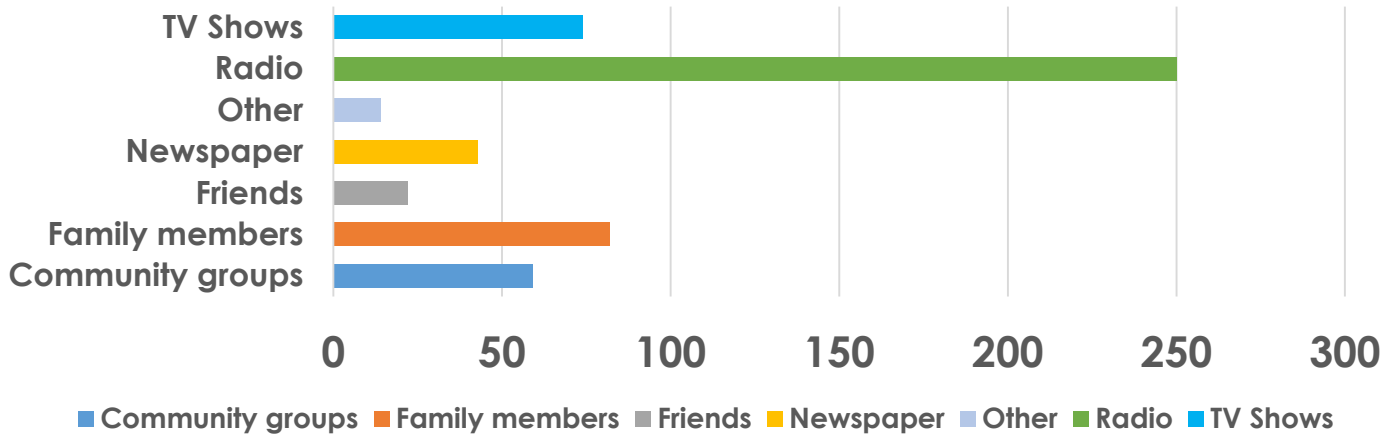
	VENDORS	HOTELS	CONSUMERS
<b>Oyugis</b>	Lake Victoria-Kenya	Lake Victoria	Market Vendors/Door to door vendors
<b>Kakamega</b>	Busia-Uganda	Lake Victoria/Busia Uganda	Market Vendors
<b>Nairobi</b>	Lake Victoria/Gikomba Market	Lake Victoria	Vendors/Supermarkets
<b>Thika</b>	Gikomba Market	Gikomba Market	Supermarkets/Restaurants
<b>Machakos</b>	-	-	Supermarket/market vendor
<b>Kisii</b>	Lake Victoria/Local farmers	-	-

## PURCHASE PRICE

	<b>FARMERS</b> Cost of fingerlings Tilapia/Catfish	<b>VENDORS</b>	<b>HOTELS</b> One serving	<b>CONSUMERS</b> Per
<b>Oyugis</b>	Kshs 80-100	Catfish Kshs 200-250 Tilapia Kshs 200- 500	Tilapia Kshs 450	Tilapia Kshs 400 Catfish Kshs 170
<b>Kakamega</b>	Kshs 100-150	Tilapia Kshs 100- 400	Tilapia Kshs 400	Tilapia Kshs 250-350 Catfish Kshs 50 per piece Tilapia quantity 1 kg
<b>Nairobi</b>	Kshs 150-200	Tilapia Kshs	Tilapia Kshs 250-450	Tilapia Kshs 150-700 Catfish quantity 7kgs Tilapia quantity 2.5 kgs
<b>Thika</b>	Kshs 100-150	Tilapia- Kshs 400-550	Tilapia Kshs 450-550 Fillet Kshs 250	Catfish Kshs 150 Tilapia Kshs 350-450
<b>Kisii</b>	Kshs 150-200	Tilapia Kshs 200-400	-	Catfish Kshs 150 Tilapia Kshs 350-450

## PROMOTION OF CATFISH AND TILAPIA

Effective Communication Channels



250 (46%) respondents found **radio** to be the most effective mode of information source. 82 (15%) said receiving information from family members was most effective, 74 (14%) from TV shows, 59 (11%) said community groups.

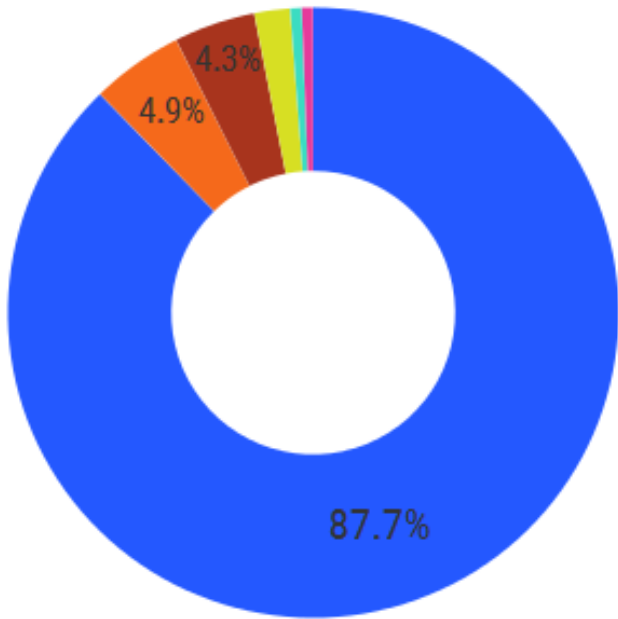
The radio played a major part on how information is received as well as trusted. Vernacular stations were most preferred as they were relatable and talked about issues that they experienced in their daily lives.

Word of mouth, through family, friends and community groups were viewed as reliable and fast in spread. Currently, all the perceptions that most consumers have about Chinese fish were based on heresy as well as some of the cultural myths. As such, these two channels could prove to be invaluable in activating interest and uptake of catfish in regions that mainly eat tilapia and also in non traditionally eating areas.



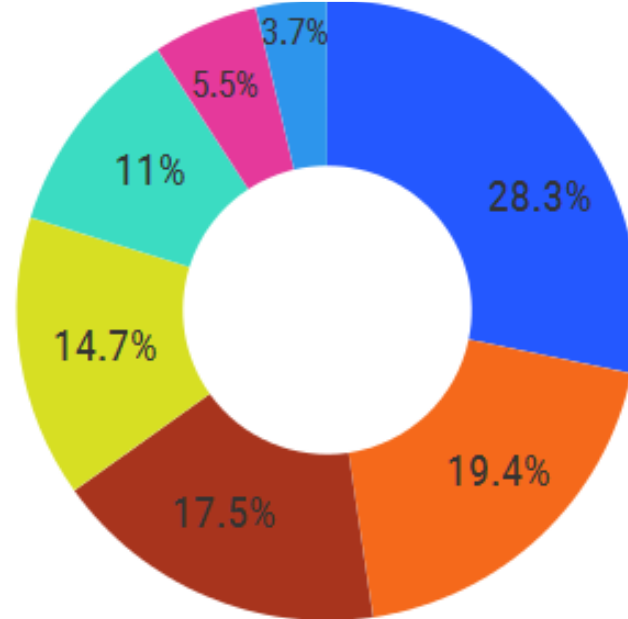
# PROMOTION PREFERENCES

## Rural



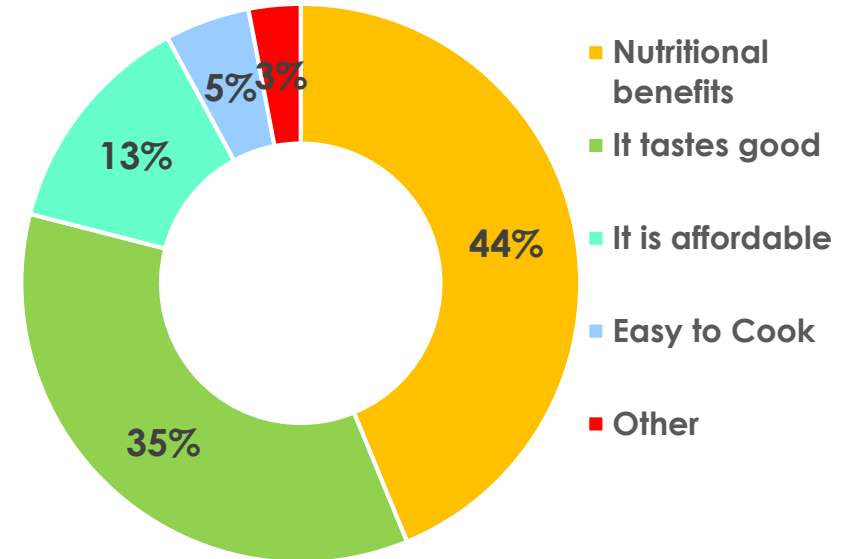
- Radio
- Family member
- TV shows
- Community groups
- Friends
- Newspaper

## Urban



- Radio
- Family member
- TV shows
- Community groups
- Newspaper
- Friends
- Other

## Motives for fish consumption



- Nutritional benefits
- It tastes good
- It is affordable
- Easy to Cook
- Other

Fish is mostly consumed for its nutritional value, closely followed by taste as a major determinant for consuming fish.

Radio plays a major part on how information is received as well as trusted in both rural and urban areas. In rural areas, vernacular radio stations such as radio ramogi, Lolwe were most preferred as they were relatable and talked about issues that they experienced in their daily lives.

In urban areas, family members, TV shows, Community groups and Newspapers were also preferred.

## **OBSERVATIONS**

### **PLACE**

Vendors and hotels sourced fish from wholesale facilities and the Lake (Lake Victoria and Gikomba). Farmers sourced fish from other farms. Consumers bought their fish from the Market which was highly preferred among majority of the consumers, door to door and supermarkets.

### **PRICE**

Majority of the farmers were farming small sized tilapia and sold them between KES 80- 200. Vendors bought whole Catfish between KES 200-250 while tilapia was bought between KES 150-450 depending on the size. Hotels bought Tilapia between KES 250-550. Consumers bought tilapia between KES150- 450 while catfish among consumers was bought at KES (50-170) in fillet form.

### **FORMS CONSUMED**

Farmers sold mainly whole fish to their clients who are mostly vendors.

Vendors inturn sell to customers who mainly consume whole deep fried fish and deep fried chunks.

## RECOMMENDATIONS FOR CATFISH AND TILAPIA

### CATFISH

**PRODUCT**-Availability of catfish is limited in the regions that farm the fish. There is need to encourage consumption through sensitization and outlining the benefits of the product to drive demand of options such as fillet.

**PRICE**- The price of Catfish is relatively low and could drive uptake. However from the results it is evident that price in itself is not a determining factor for preference. There are other factors such as myths that play a key role in consumption hence the need for sensitization.

**PLACEMENT**- Market vendors are well trusted by consumers of fish as portrayed in the results. They are therefore a key channel of distribution within the regions.

**PROMOTION**-Rural consumers would be much more comfortable receiving information from people they have a relationship with i.e. family and friends through word of mouth as well as local vernacular radio stations. The urban consumer information is mainly driven by nutritional trends that are both in mainstream and digital media.

### TILAPIA

**PRODUCT**-Tilapia is relatively popular across all the regions. However, there are negative perceptions around farmed Tilapia that might influence uptake. The recommendation is that farmers need to be supported to implement the right feeds so as to have quality fish for the consumers.

**PRICE**- It is evident that Tilapia is pricey across all the regions compared to the other kinds of fish. Increasing the supply of quality farmed fish would enable access at a cheaper cost.

**PLACEMENT**- Market vendors are well trusted by consumers of fish as portrayed in the results. They are therefore a key channel of distribution within the regions.



# FARM AFRICA

