



# **AQUACULTURE WELFARE IN NIGERIA:**

## **Perceptions, Practices, Challenges And Recommendations**

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Supported By



**ANIMAL CHARITY  
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# Introduction and Background



# INTRODUCTION AND BACKGROUND

- Aquaculture (Fish farming) is the systematic growing of fishes and aquatic organisms by humans
- Nigeria most populous black nation in the world (213 million people)
- 52% total aquaculture production in sub-Saharan Africa
- 2<sup>nd</sup> largest aquaculture industry in Africa (after Egypt)
- Largest consumers of fish in Africa, one of the highest in the world (13.3 kg/person/year)

# INTRODUCTION AND BACKGROUND

Aquaculture in Nigeria continues to grow due to the following factors:

- 3 million metric tons of fish consumes annually (local demand only)
- 1 million metric tons of fish supplied locally (313k from aquaculture, 750k from capture fisheries)
- 2 million metric tons met by fish importation
- Considered viable source of income and livelihood

Huge demand gap for protein – (affordable, nutritious, available) – and in this case Fish is meeting these needs and aquaculture is being encouraged in the country.

# Research Justification, Goals and Expected Outcomes



# RESEARCH JUSTIFICATION

- While the aquaculture industry continues to grow, little is said or known about the welfare aspects
- Practices on fish farms are not closely regulated and if regulated, focus is on health and management practices
- It is unclear if sentience of fish is taken into consideration by stakeholders – farmers, consumers, government, researchers etc.
- More data on fish production and consumption, limited to no data on fish and aquaculture welfare
- Concerns about welfare of fish – impact of factory farming, consumer health and the environment

# RESEARCH GOAL AND EXPECTED OUTCOMES

## **GOAL: DETERMINE STAKEHOLDER KAPs OF AQUACULTURE WELFARE IN NIGERIA**

- Provide background information on prevalent AQW knowledge and practices in fish value chain, production and policy
- Insights on areas of further research
- Provide evidence for strategies and interventions for improving AQW practices and integration into existing fish production systems

# Methodology





# METHODOLOGY

## Literature Review


- ❖ Research papers from peer-reviewed journals
- ❖ Grey literature

## Survey Qs

- ❖ 611 Fish Farmers
- ❖ 608 Fish Consumers
- ❖ 19 States (out of 37)
- ❖ 6 geo-political zones

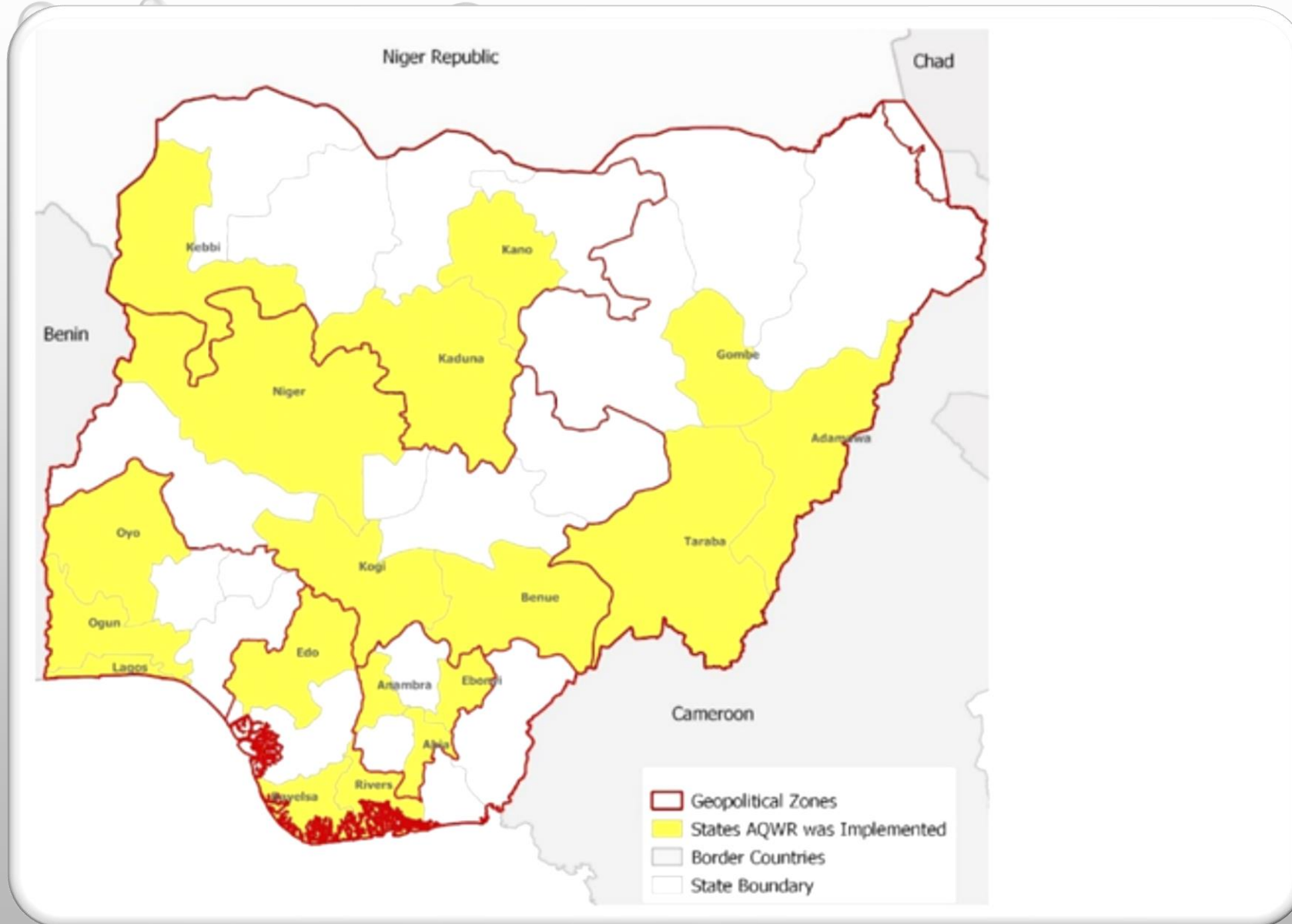
## KIIs

- ❖ 5 Government Officials
- ❖ 6 Researchers
- ❖ 5 members and leaders of Fish farm associations



Integrated Mixed-Methods Approach

# METHODOLOGY – GEOGRAPHICAL DISTRIBUTION



# METHODOLOGY – DATA ANALYSIS

## Quantitative Data

- ❖ Microsoft Excel
- ❖ SPSS

## Qualitative Data

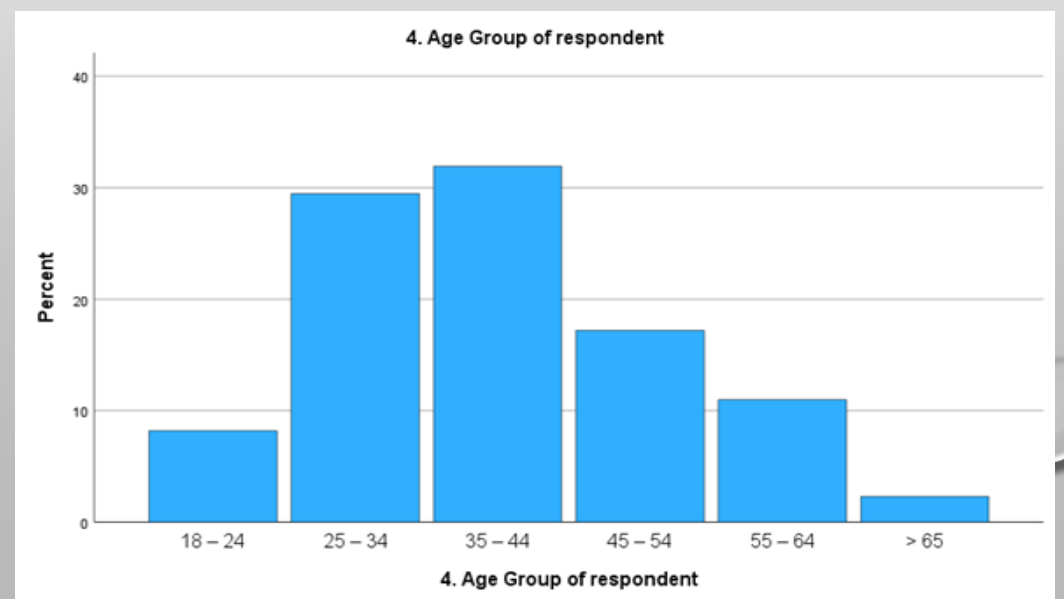
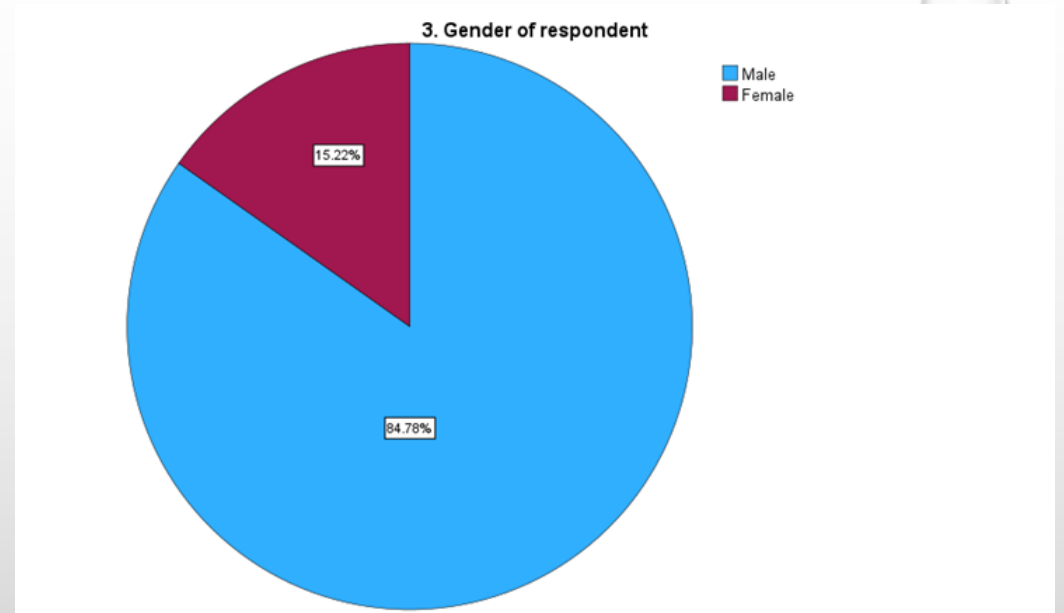
- ❖ Content Analysis
- ❖ Nvivo

# Presentation of Results



# RESULTS – FISH FARMERS DEMOGRAPHY

Demography distribution and Statistics	
Number of states	19
Mean	32.16
Std. Error of Mean	1.777
Median	30.00
Mode	30
Std. Deviation	7.748
Variance	60.029
Range	41
Minimum	12
Maximum	53
Sum	611



## RESULTS – FISH FARM DEMOGRAPHY

80%

- Manage their farms directly

50%

- have at least 5 years experience in fish farming

40%

- Have more than 5000 fishes on their farms. Most breed catfish, others tilapia

75%

- Sell to local fish markets. Others to supermarkets, exports

50%

- Earn monthly incomes in the range N50k & N500k (\$109 - \$1087), others (40%) earn more

## RESULTS – FISH FARMERS; WELFARE KNOWLEDGE

65%

- Not heard of fish welfare and many defined welfare mostly on fish health and management practices, little on sentience

97%

- Believe fish experience pain and suffering; others don't believe (fish don't talk, feel pain only out of water, believe its not proven)

12%

- Know of fish welfare standards local or globally

62%

- Believe their fellow farmers and consumers care about fish welfare

## RESULTS – FISH FARMERS; WELFARE PRACTICES

10%

- Keep fish out of water for long periods

6%

- Self-medication and antibiotic misuse

26%

- Poor water quality

19%

- Overpopulation

31%

- Underfeeding

3%

- Administer growth stimulants and hormones

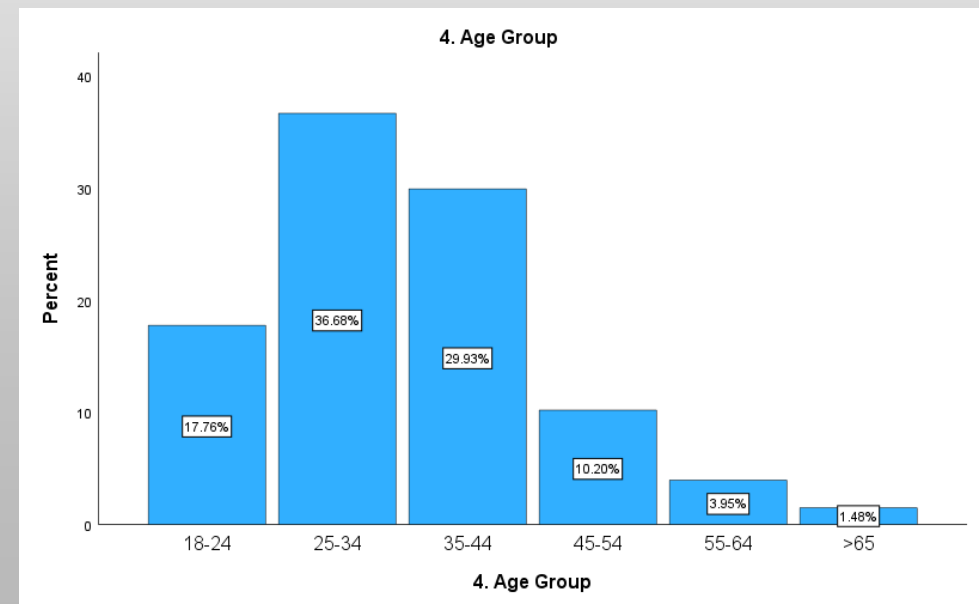
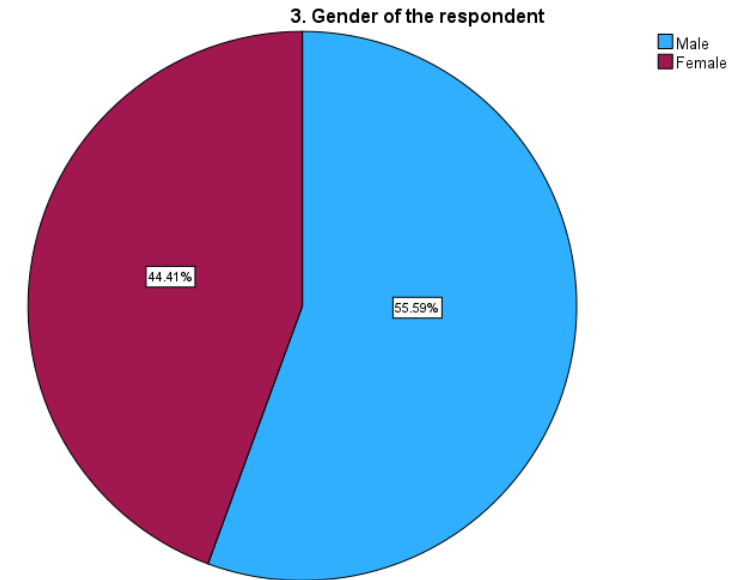
98%

- Will implement fish welfare practices, if provided with evidence and trained



# RESULTS – FISH CONSUMERS DEMOGRAPHY

Demography distribution and Statistics	
Number of states	19
Mean	32.16
Std. Error of Mean	1.5
Median	30
Mode	30
Std. Deviation	6.4
Variance	41.2
Range	30
Minimum	26
Maximum	56
Sum	608



## RESULTS – FISH CONSUMERS DEMOGRAPHY

89%

- Reside in urban and peri-urban areas

77%

- Are employed

90%

- Earn less than 250k (\$543) monthly
- 40% earn less than 50k (\$109) monthly

87%

- Purchase fish in local fish markets. Others supermarkets, restaurants, fish farms

## RESULTS – FISH CONSUMERS; WELFARE KNOWLEDGE

66%

- Not heard of fish welfare and many defined welfare mostly on fish health and management practices, little on sentience

83%

- Believe fish experience pain and suffering; others don't believe

7%

- Know of any fish welfare standards local or globally

91%

- Will care more about fish welfare, if provided with evidence

7%

- Would still purchase from a farm with poor welfare practices

## RESULTS – FISH CONSUMERS; WELFARE PRACTICES

89%

- Keep fish out of water for long periods; 66% want legislation

75%

- Self medication and antibiotic misuse; 72% want legislation

91%

- Poor water quality; 77% want legislation

80%

- Overpopulation and high-stocking density; 65% want legislation

80%

- Underfeeding; 64% want legislation

56%

- Administer hormones; 58% want legislation

7%

- Would still purchase from a farm with these practices

## RESULTS – FISH STAKEHOLDERS DEMOGRAPHY

### 6 Researchers

- University Lecturers and researchers in Dept of Fisheries, Aquaculture, Marine Science, Fish farm consultancy, PhDs

### 5 Fish farm Group members

- State President and Members of CAFAN, WAS and other fish associations

### 5 Government Staff

- State Director at Ministries of Agriculture Fisheries, Aquaculture, Quarantine, Natural Resources. Engage in Policy Advisory

## RESULTS – FISH STAKEHOLDERS; WELFARE KNOWLEDGE

### Knowledge

- Good knowledge of fish welfare – acknowledgment of sentient living conditions, treatment, environment, water quality, stress, handling, slaughter, feeding
- Some misconceptions – Antibiotics use, some focused on health

### Source of learning

- New for many – through teaching and practical field experience, conferences, research, peer learning on new information and trends, reading books

### Belief in Sentience

- All believe that fish are sentient and feel pain and suffering, believe in the scientific evidence for animals though many were not sure for fish

## RESULTS – FISH STAKEHOLDERS; WELFARE PRACTICES

### Poor AQW practices

- Overstocking,
- Multi-specie farming,
- Transport and packing in sacks or water bowls that heat up,
- Poor slaughter
- Use of explosives
- Antimicrobial misuse, use of pesticides and chemicals
- Poor water quality, no PPE,
- Use of growth hormones/drugs for fattening,
- Underfeeding due to high costs of feed
- Bad housing that cause heat stress

### Legislation and SOPs

- Most have no knowledge of policies,
- some indicate they know policies in developed countries but can't remember specifics,
- 1 person indicates there are SOPs in the Ministry but none specific to AQW or AW;
- others mention HACCP, NAFDAC

## RESULTS – FISH STAKEHOLDERS; WELFARE PRACTICES

### Challenges

- Factory farming has increased incidence of poor welfare practices especially due to high deficit in Nigeria
- Lack of knowledge, it's still a new concept to many
- Profit-driven industry only, no care for animal welfare, (campaigns for fish welfare should include profit incentives or it may not be accepted)

### Willingness to adopt AQW

- All are willing to support and disseminate AQW practices

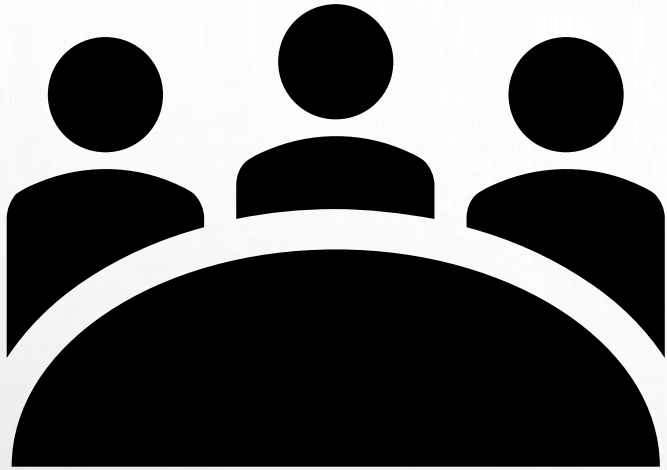


# Recommendations and next steps



## RECOMMENDATIONS AND NEXT STEPS

- Public awareness on animal welfare, promoting the knowledge of sentience – using both traditional and social media
- Train and build capacity of fish farmers and stakeholders on aquaculture welfare practices and integrate with existing farm management practices
- Support and guide government stakeholders in the development of welfare policies and SOPs for fish
- Due to the high local demand in protein, support and encourage local innovations and development in alternative proteins to reduce pressure on factory farming of fish and other animals



# QUESTIONS & DISCUSSION



# FOR INQUIRY OR FEEDBACK

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