

Research Article

Awareness of Community on Fishery and Aquaculture Production in Central Ethiopia

Tena Alemu^{✉*}

Department of Animal Production and Technology, Wolkite University, Wolkite, Ethiopia

Abstract

The study was conducted in three different districts Gumer, Enemornaener and Cheha Woreda on awareness and perception of community on fishery and aquaculture production. In those study areas majority of the people had the limitation of knowledge on production, consumption, and use of fish and aquaculture technologies. Most of people had interest to catch and for farming fish, however there were challenges, those were lack of input accessibility, shortage of water in Enemor and ener district, financial problem, and lack of awareness. In contrast there were opportunities for fish production in areas those were availability of Permanent River in Cheha and Enemornaener district. Then, approvals are provided for fish production and introduction of aquaculture technologies in the areas.

Keywords: Aquaculture; Awareness; Community; Fish; Perception

Introduction

Both fisheries and aquaculture endure significant sources of food, nutrition, income, and livings for hundreds of lots of people around the world [1]. Fish is one of the identified aquatic animals which serve as food for human. World per capita fish supplies reached are cord high of 20 kg in 2014 [1]. While yearly per capita consumption of fish has grown progressively in developing regions (from 5.2 kg in 1961 to 18.8 kg in 2013) and in Low Income Food-Deficit Countries (LIFDCs) (from 3.5 to 7.6 kg), it is still considerably lower than that in more developed regions [1].

***Corresponding author:** Tena Alemu, Department of Animal Production and Technology, Wolkite University, Wolkite, Ethiopia, Tel: +251 913187822; E-mail: tena_alemu@yahoo.com/ tena.alemu@wku.edu.et

Citation: Alemu A (2021) Awareness of Community on Fishery and Aquaculture Production in Central Ethiopia. J Aquac Fisheries 5: 039.

Received: February 08, 2021; **Accepted:** March 01, 2021; **Published:** March 08, 2021

Copyright: © 2021 Alemu A. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

The domestic fishery of Africa involvement is projected to be about 2.1 million tons of fish per year; it epitomizes 24% of the total world fish production from inland water bodies. The inland water body of Ethiopia is enclosed about 7,400 km² of the lakes and about 7,000 km a total length of the rivers [2]. Further, 180 fish species were harbored in these water bodies [3]. In Ethiopia, fish comes exclusively from inland water bodies with lakes, rivers, streams, reservoirs and substantial wetlands that are of great socio-economic, ecological and scientific importance [4,5].

Ethiopia being a land locked country its fisheries is entirely based on inland water bodies, lakes, reservoirs and rivers. Fish production potential of the country is estimated to be 51,400 tonnes per annum [6]. Fishing has been the main source of protein supply for many people particularly for those who are residing in the locality of major water bodies like Lake Tana, Ziway, Awassa, Chamo, Baro River, etc [5]. Ethiopia is capable with numerous water bodies that cover a high diversity of aquatic wildlife. Reservoir fishery plays an important role in the economy of the country and the livelihoods of the people living adjacent to those reservoirs. Fisheries resource in Ethiopia, in spite of its significant contribution to poverty alleviation and food security, is an unexploited natural resource [7]. So, detail studies of the reason for low production of fishery as well as aquaculture need to be unwritten well before introduction of the technologies. Fisheries and aquaculture contributes for the world's socio-economic growth. Around 38 million commercial fishermen and fish farmers worldwide, provide service to over 59 million people in the world and about 5.7 million people in Africa in 2016 [8].

Ethiopia is the water tower of East Africa, but, the fishery potential is under subjugated and aquaculture is also insignificant only 50% of fishery potential used, contribution of Ethiopia's fishery sector = 0.02% GDP, Fish supply is only 200 g/capita/person/year, compared with 2.6 kg for the East African Region and 20.2 kg for the world. Similarly, in Gurage zone there are many perennial rivers which can be a potential source of wild fish and aquaculture. For example, within less than 48 km distance in Cheha and Enemorener woreda, there are four rivers having wild fishes. At present, ongoing research by WKU recognized about four species of fish in WabeRiver: Nile Tilapia (*Orochromious Niloticus*), Cat fish (*Clarius Garpinus*), Labeo (*Barbus Intermedius*), Labeo (*Barbus Nedgria*) and Electric fish.

However, none of these rivers are used as fish production except by few individuals and seasonal fishermen. This could be mainly lack of awareness and perception about fish as food and income source, fish catching and culture methods etc., absence of ability, admittance to and accessibility of resources and tools, lack of cheap and efficient locally available fish feeds, shortage of small-scale low-cost aquaculture support for rural development, and disregarded by government and academicians, lack of licensed fish seed multiplication centers and lack of institutional capacity in the area of training, research and technology transfer also challenging conditions for aquaculture development in Ethiopia. In addition to

those challenging conditions scarcity of trained manpower and lack of government attention are also not easy confines for aquaculture development in the country [7,9]. Therefore, the current studies focus on awareness and perception of community on fishery and aquaculture production.

Materials and Methods

Description of the study area

The study was conducted in SNNPR regions on three different districts Gumer, Cheha and Enemorenaener woredaon Arekit, Endebera and Amogerakeels, respectively.

Gumer district encompasses 34 rural peasant associations and one capital town, Arekit, which are found in dega agro-ecological zone. The district is located about 65 km from Wolkite and 220 Kilometers from Addis Ababa in the Southern part of Ethiopia. The total land area is 23,555 ha. It is bordered to the South by Geta, to the East by Silte zone, to the North by Ejha Woreda and to the west by Cheha woreda. The altitudes of the district range from 2700 to 3178 m. It has clay loam 85% and 15% red types of soil. Agriculture is the main economic activity in the district. The dominant crops grown in the area are barley, bean, wheat, pean, potato, and enset. The majority of the population is Gurage ethnicity. The total population of the district was estimated to be 185,888 in 2003/2004.

Chehais one of the woreda in SNNPR region located at 185 km from Addis Ababa 30km from Wolkie. Cheha Woreda is located between 7.99-8.25 latitude north and 37.59-38.06 East. The mean maximum and minimum temperature is 27 and 18 respectively. The Woreda receives a rainfall between 900-1500. It also covers a total of 43972 hectares (ha). Majority of the area is part of the weiyena dega agro-climate zone, covering about 80 % of the total land and followed by dega with a total coverage of 20 %. Cheha Woreda is bordered by Abeshge Woreda at the North, |Geta and Enemor Woresa at the south, Ezha and Gumer Woredas at the East and both Yem especial Woreda and Oromiya region at the west.

Enemorenaeneris one of woreda of Gurage zone in SNNPR region located at65km from Wolkite. It is located between 7.35 - 8.13 North and 37.58- 37.93 East. The mean maximum and minimum temperature is 25 and 12.5o C respectively. The Woreda receives a mean annual rainfall between 801-1400. It also covers a total of 107,584 ha. Majority of the area is part of the Weiyena dega agro-climate zone, covering about 58.53% of the total land. It is followed by kolla with a total coverage of 25.25% and dega accounting for the rest of the area (16.22%).

Sampling method and sampling size

Sampling methods which was employed for this study involve purposive sampling method. The three kebeles were purposively selected from three different districts. Then thirty households were randomly selected from each kebele to represent the population. Therefore, a total of 90 sample households were selected.

Method of data collection

Both primary and secondary types of data were collected. The primary data gathered formally through semi-structured questionnaires that were form fitting out through face to face and direct interview of

respondents and Key informant interview and personal observation was made. Secondary data was collected from Livestock and Fisher Resource office of the woreda.

Method of data analysis

Descriptive statistics was used that combines both qualitative and quantitative methods of data analysis to interpret the findings. The important descriptive statistics such as frequencies, percentage and mean were used in the analysis of the data Frequencies which used to indicate the number of respondents, involved in the study. Percentage and mean are also used to express the magnitude of the respondents' opinion. In addition, qualitative data obtained open-ended part of the questionnaires was presented by describing the situation deeply and contextually. SPSS version 20 program was used to analyze the collected data.

Results and Discussion

Household characteristics

The result was revealed that from the entire respondents 72.2 % of male and 27.8 % of female out of this 21.1 % were under the age 15-35, 52.2 % were under the age 36-50 and 26.7 % were under age of 51-65 on the three different districts. And about 64.5 % have passed through primary and secondary school and 10% were above secondary (Table 1). Many research studies have confirmed that education plays a vital role in the creating awareness because it is easy to understand and getting required information by educated persons than the illiterate ones [10].

Variables Categories		No of respondent	Percentage (%)
Sex	Male	65	72.2
	Female	25	27.8
	Total	60	100
Age group	15-35	19	21.1%
	36-50	47	52.2
	51-65	24	26.7
Educational status of respondents	Illiterate	23	25.5
	Primary (1-8)	33	36.7
	Secondary (9-12)	25	27.8
	Above 12	9	10

Table 1: Household characteristics.

Awareness of community on fishery and aquaculture

According to the result indicated in table 2 below majorities of respondents have a good perception and awareness on fishery and nutritional value of fish meal. About 88% of the respondents are aware about fish in Amogera kebele; more than 85% of the respondents were not consuming fish meal on Gumer, Cheha and Enemorenaener district respectively. But the respondents that didn't consume fish are interested to consume if they have access of fish. Some of the respondents have knowledge on aquaculture like pond aquaculture system. Most of respondents showed interest for fish farming in order to consume and generate house hold income. About 75%, 71%, and 90% of the respondents from kebeleArekit, Endebera and Amogera respectively were interested for fish farming.

	Arekit		Endebera		Amogera	
	Yes (%)	No (%)	Yes (%)	No (%)	Yes (%)	No (%)
Know fish	60	40	40	60	88	12
Consume fish	10	90	0	100	15	85
Knowledge about aquaculture	0	100	0	100	35	65
Do the fish meal more nutritious than other livestock	65	35	70	30	45	55
Interest of fish farming	75	25	71	29	90	10

Table 2: Awareness of respondents on three different kebeles.

Opportunity for fish production

According to respondent and personal observation there was water resource (river) available in the study areas that can be used for production of fish. However available water was poor in quality as the result of pollution this might be due to less awareness of community towards water pollution impact on fish. Availability of fish feed resource was also opportunity, and diverse agro ecology was good opportunity for the production of fish on study area. Feed source are terrestrial plants, kitchen wastes or agricultural by-products, and organic fertilization. Market access is also one of opportunity on the study area. Most of the hotels found in the zone were sold fish from other places like ziway and Addis Ababa.

Challenges for fishery and aquaculture on study area

Some of the defies revealed for fishery and aquaculture production includes: Lack of awareness (53.33 %, 56.67 % and 50 %), Shortage of water (13.33 %, 6.67 % and 10 %), financial problem (10 %, 10 % and 10 %), poor water quality (6.67 %, 0 % and 10 %) and lack of input accessibility (16.67 %, 26.67 % and 20 %) for the three kebeles Arekit, Endebera and Amogera respectively, in the study areas. The major challenge in the three districts was lack of awareness and input accessibility. The other challenges which are not mentioned in the table 3 were environmental degradation through (expansion of agriculture, and urbanization), and climate change. The study conducted by [11], in lake Tana show that cultivation of teff (*Eragrostis tef*), chickpea and grass pea and maize practices has been impacted around the shore in Lake Tana. Therefore, expansion of agriculture and climate change has great impacts on fish production.

Challenge	No of respondent (%)						Over all %
	Arekit	%	Endebera	%	Amogera	%	
Lack of awareness	16	53.33	17	56.67	15	50	53.33
Shortage of water	4	13.33	2	6.67	3	10	10
Financial problem	3	10	3	10	3	10	10
Poor water quality	2	6.67	-	-	3	10	5.56
Lack of accessibility	5	16.67	8	26.67	6	20	21.11
Total	30	100	30	100	30	100	

Table 3: Challenges of fishery and aquaculture production on three different kebeles.

Conclusion and Recommendations

According to the current study, majority of the respondents have lack of awareness on fishery and aquaculture. They have interest and know the use of fish as source of food and as source for house hold income generation. There were challenges on the study areas lack of awareness, lack of input accessibility, poor water quality and shortage and financial problem, environmental degradation, and climate change for fishery and aquaculture production. This study indicates that the respondent in the study area have interest about fishery and aquaculture. Therefore, introduction of simple fishing gear for those areas with river to catch fish and small scale pond aquaculture for the other group to farm fish can be identified. Based on this, the following recommendations will be forwarded:

- To improve fish production in area, so stakeholders should support inputs, fishing gear such fishing gear, fish seed, fishmeal that can be used for fish catching and fish farming.
- Almost no introduction of aquaculture technology in study areas, hence by improving awareness and training of the community aquaculture technology can be adopted easily.
- Training should be given to the community concerning with the ways of fish catching, fish meat importance, and the processing of fish product.

References

1. FAO (2016) The state of world fisheries and aquaculture. Contributing to Food Security and Nutrition for All, FAO, Rome, Italy. Pg no: 1-204.
2. Mitike A (2015) Fisher men’s willingness to pay for fisheries management: The case of lake Ziwai, Ethiopia. Journal of FisheriesSciences, London, UK.
3. Temesgen M (2017) Length-weight relationship and condition factor of fishes in Lake Langena, Ethiopia, PhD dissertation, Addis Ababa University, Ethiopia.
4. Janko A (2013) Assessment of fish products demand in some water bodies of Oromia, Ethiopia. International Journal of Agricultural Science 3: 628-632.
5. Tesfaye G, Wolff M (2014) The state of inland fisheries in Ethiopia: A synopsis with updated estimates of potential yield. Eco hydrology and Hydrobiology 14: 200-219.
6. Shifarew A (2016) Ethiopia: Emphasis on modern fish harvesting development. Journal of Economics and Sustainable Development.
7. Kebede A, Meko T, Hussein A, Tamiru Y (2017) Review on opportunities and constraints of fishery in Ethiopia. International Journal Poultry Fish Science 1: 1-8.
8. FAO (2018) World Aquaculture Performance Indicators (WAPI). Aquaculture Production Module, FAO, Rome, Italy.
9. Natea G, Wakjira M, Negisho T, Endebu M (2017) Spawning response of African catfish (*Clarias gariepinus* (Burchell 1822), Clariidae: Teleost) exposed to different piscine pituitary and synthetic hormone. Inte J of Fisheries and Aquatic Studies 5: 264-269.
10. Muro D, Burchi F (2007) Education for rural people and food security. FAO, Rome, Italy.
11. Asmare E, Demissie S, Tewabe D, Endalew M (2016) Impact of climate change and anthropogenic activities on livelihood of fishing community around Lake Tana, Ethiopia. EC Agriculture 3: 548-557.



- Advances In Industrial Biotechnology | ISSN: 2639-5665
- Advances In Microbiology Research | ISSN: 2689-694X
- Archives Of Surgery And Surgical Education | ISSN: 2689-3126
- Archives Of Urology
- Archives Of Zoological Studies | ISSN: 2640-7779
- Current Trends Medical And Biological Engineering
- International Journal Of Case Reports And Therapeutic Studies | ISSN: 2689-310X
- Journal Of Addiction & Addictive Disorders | ISSN: 2578-7276
- Journal Of Agronomy & Agricultural Science | ISSN: 2689-8292
- Journal Of AIDS Clinical Research & STDs | ISSN: 2572-7370
- Journal Of Alcoholism Drug Abuse & Substance Dependence | ISSN: 2572-9594
- Journal Of Allergy Disorders & Therapy | ISSN: 2470-749X
- Journal Of Alternative Complementary & Integrative Medicine | ISSN: 2470-7562
- Journal Of Alzheimers & Neurodegenerative Diseases | ISSN: 2572-9608
- Journal Of Anesthesia & Clinical Care | ISSN: 2378-8879
- Journal Of Angiology & Vascular Surgery | ISSN: 2572-7397
- Journal Of Animal Research & Veterinary Science | ISSN: 2639-3751
- Journal Of Aquaculture & Fisheries | ISSN: 2576-5523
- Journal Of Atmospheric & Earth Sciences | ISSN: 2689-8780
- Journal Of Biotech Research & Biochemistry
- Journal Of Brain & Neuroscience Research
- Journal Of Cancer Biology & Treatment | ISSN: 2470-7546
- Journal Of Cardiology Study & Research | ISSN: 2640-768X
- Journal Of Cell Biology & Cell Metabolism | ISSN: 2381-1943
- Journal Of Clinical Dermatology & Therapy | ISSN: 2378-8771
- Journal Of Clinical Immunology & Immunotherapy | ISSN: 2378-8844
- Journal Of Clinical Studies & Medical Case Reports | ISSN: 2378-8801
- Journal Of Community Medicine & Public Health Care | ISSN: 2381-1978
- Journal Of Cytology & Tissue Biology | ISSN: 2378-9107
- Journal Of Dairy Research & Technology | ISSN: 2688-9315
- Journal Of Dentistry Oral Health & Cosmesis | ISSN: 2473-6783
- Journal Of Diabetes & Metabolic Disorders | ISSN: 2381-201X
- Journal Of Emergency Medicine Trauma & Surgical Care | ISSN: 2378-8798
- Journal Of Environmental Science Current Research | ISSN: 2643-5020
- Journal Of Food Science & Nutrition | ISSN: 2470-1076
- Journal Of Forensic Legal & Investigative Sciences | ISSN: 2473-733X
- Journal Of Gastroenterology & Hepatology Research | ISSN: 2574-2566
- Journal Of Genetics & Genomic Sciences | ISSN: 2574-2485
- Journal Of Gerontology & Geriatric Medicine | ISSN: 2381-8662
- Journal Of Hematology Blood Transfusion & Disorders | ISSN: 2572-2999
- Journal Of Hospice & Palliative Medical Care
- Journal Of Human Endocrinology | ISSN: 2572-9640
- Journal Of Infectious & Non Infectious Diseases | ISSN: 2381-8654
- Journal Of Internal Medicine & Primary Healthcare | ISSN: 2574-2493
- Journal Of Light & Laser Current Trends
- Journal Of Medicine Study & Research | ISSN: 2639-5657
- Journal Of Modern Chemical Sciences
- Journal Of Nanotechnology Nanomedicine & Nanobiotechnology | ISSN: 2381-2044
- Journal Of Neonatology & Clinical Pediatrics | ISSN: 2378-878X
- Journal Of Nephrology & Renal Therapy | ISSN: 2473-7313
- Journal Of Non Invasive Vascular Investigation | ISSN: 2572-7400
- Journal Of Nuclear Medicine Radiology & Radiation Therapy | ISSN: 2572-7419
- Journal Of Obesity & Weight Loss | ISSN: 2473-7372
- Journal Of Ophthalmology & Clinical Research | ISSN: 2378-8887
- Journal Of Orthopedic Research & Physiotherapy | ISSN: 2381-2052
- Journal Of Otolaryngology Head & Neck Surgery | ISSN: 2573-010X
- Journal Of Pathology Clinical & Medical Research
- Journal Of Pharmacology Pharmaceutics & Pharmacovigilance | ISSN: 2639-5649
- Journal Of Physical Medicine Rehabilitation & Disabilities | ISSN: 2381-8670
- Journal Of Plant Science Current Research | ISSN: 2639-3743
- Journal Of Practical & Professional Nursing | ISSN: 2639-5681
- Journal Of Protein Research & Bioinformatics
- Journal Of Psychiatry Depression & Anxiety | ISSN: 2573-0150
- Journal Of Pulmonary Medicine & Respiratory Research | ISSN: 2573-0177
- Journal Of Reproductive Medicine Gynaecology & Obstetrics | ISSN: 2574-2574
- Journal Of Stem Cells Research Development & Therapy | ISSN: 2381-2060
- Journal Of Surgery Current Trends & Innovations | ISSN: 2578-7284
- Journal Of Toxicology Current Research | ISSN: 2639-3735
- Journal Of Translational Science And Research
- Journal Of Vaccines Research & Vaccination | ISSN: 2573-0193
- Journal Of Virology & Antivirals
- Sports Medicine And Injury Care Journal | ISSN: 2689-8829
- Trends In Anatomy & Physiology | ISSN: 2640-7752

Submit Your Manuscript: <https://www.heraldopenaccess.us/submit-manuscript>