

Contents	Pages
Contents	i
1.Introduction.....	1
2. Number of research activities planned and executed in the year	2
2.1 By Government budget.....	2
2.2 By Non-Government budget (Collaborative activities).....	2
Technologies/ information generation in the year (from research activities completed in the year).....	3
3.1 Number planed and achieved.....	3
3.2 Indicate the title of activities completed, whether write up is completed or not, major findings obtained and recommendations made (in abstract form) for each team	3
3.2.3 Evaluation of the status of stocked fish ponds in Oromia region.	5
3.2.4 Evaluating the potential of Periphyton production on growth performance, feed utilization and survival of Oreochromis niloticus.....	6
4.2 Assessment of fish species composition, some biology and fishing gear Selectivity in Lake Harkiso	8
4.3 Limnology, fishery activity and health assessment of Abasamuel Reservoir	8
4.4 Assessment of Liminological parameters and the status of fish species in Lake Abijata	8
Plate: Cages with African catfish in Lake Babogaya, set for evaluation of feed type on growth performance.	10
5. Pre-extension demonstration activities performed in the year (support with pictures).....	12
6. Pre-scaling up activities performed in the year (support with pictures)	12
7. Basic technology multiplication.....	13
8. Technology multiplication by Farm management	13
8.1. Forage seed multiplication.....	13
8.2. Other technologies multiplied (improved heifers, bulls, bucks, fingerlings, etc).....	13
9. Trainings given for SMS, DAs and farmers in the year.....	14
9.1. Farmers training.....	14
9.2. SMS and DA's training	15

10. Field days organized in the year	16
11. FRGs established/strengthened in the year	16
12. Extension materials produced and distributed in the year	16
13. Articles published in the year by research team.....	17
14. Current manpower status of the process	18
15. Number of Staff on long term training.....	18
16. Staff recruitment & transfer for the process.....	18
17. Capital budget allocation and utilization	19
17.1. OARI funded	21
17.2. Funded by other organizations.....	21
18. Recurrent budget allocation and utilization	21
18.1. OARI funded	21
18. Mention any other technical and administrative activities conducted in the year (eg. Workshops conducted, panel discussions organized, technical advisory services given, hosting apprenticeship students, experience sharing to other institutions, forming institutional collaborations with other institutions etc.).....	22
19. Technical and administrative challenges and problems encountered and measures taken in the year	25

1) Introduction

Batu Fishery and Other Aquatic Life Research Center (BFALRC) one Research Center from seventeen(17) Research Center under the Oromia agricultural research institute (IQQO) that mandated for providing agricultural technologies and information on Fish and Other Aquatic Life to enhance production and productivity of the agricultural sector. The **Center** is located in central rift valley, East Shoa zone, Batu town, 7.9 0 N & 37.7 E at an elevation of 1638 m.a.s.l. The Centre was established with the major objective to ascertain sustainable fishery resource utilization through generating new and appropriate technologies and adapting proven once. Having this mandate, Center have been conducting different research activities under livestock Research process and Scio-Economics and Agricultural Extension Research process in the year 2015.

By this year Batu Fishery and Other Aquatic Life Research Center (BFALRC) has plans twenty (20) research activities to conduct us prosperity journey plan of ten year's. But the center plan to conduct 25 research activities in the same year under Capture Research, Aquaculture Research Team, Socio-Economics Research Team and Extension Research Team. With this actual plan, three (3) activities were not performed due to security problem and one (1) activity discontinued due to water shortage (highly used for wheat Irrigation). In addition to conducting many research activities many capacity building were done that supported by IQQO, AGP-II and LFSDP. The annual progress report were prepared by all research team as flow as format of annual report.

2. Number of research activities planned and executed in the year

2.1 By Government budget

Research team	Number of total activities planned to be executed for the year		# of Completed in the year (c)	# of Discontinued in the year *(d)	# Passed to next year (e=b-c-d)	New proposal approved for next year (f)	Total to be executed in next fiscal year (g= e+f)
	As per PJP (a)	Actual (b)					
Capture fishery	10+2*	9+2*	2	1	7	4	11+2*
Aquaculture	7	7	2		5	3	8+1*
Socioeconomics	3	2	1	-	2	1	3
Agricultural extension & gender	3	3		-	3	-	3
Total	23	23	5	1	17	8	25+3*

*Represents PhD and McS thesis.

*Reason for discontinued activities:

The activity entitled Introduction and adaptability study of *Cyprinus carpio* in Wodecha Reservoir was discontinued during OARI's full proposal review forum. So far, 1972 fish were introduced and all died in 2021 due to water shortage by irrigation users to downstream of the reservoir. To solve this problem, it was communicated with all stakeholders. However, they told us, water consumption for irrigation is more intensified than ever and if fish introduced, mortality may occur again. For this reason, the activity decided to discontinue on the forum.

2.2 By Non-Government budget (Collaborative activities)

Research team	Number of total activities planned to be executed for the year		# of Completed in the year (c)	# of Discontinued in the year *(d)	# Passed to next year (e=b-c-d)	New proposal approved for next year (f)	Total to be executed in next fiscal year (g= e+f)
	as per PJP (a)	Actual (b)					
Capture Fishery	1	1	0	0	1	0	1
Total	1	1	0	0	1	0	1

*Reason for discontinued/suspended activities

There is no activity discontinued

3. Technologies/ information generation in the year (from research activities completed in the year)

3.1 Number planed and achieved

No	Research team	# of technologies/ information planned to be	Technologies/ information generated		Reason for under performance, if any
			Number	As % of annual plan	
1	Capture Fishery	2	2	100%	
2	Aquaculture	2	2	100%	
3	Socioeconomic	2	1	50%	Only one activity were completed
4	Agricultural extension	1	-	-	Not completed activity in the year
Total		7	5	71.43	

3.2 Indicate the title of activities completed, whether write up is completed or not, major findings obtained and recommendations made (in abstract form) for each team

A. Capture Fishery Research Team

1. Assessment of the current potential of the blue-green alga (Spirulina plat)
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.
- 11.
- 12.
- 13.

- 14.
- 15.
- 16.
- 17.
- 18.
- 19.
- 20.
- 21.
- 22.
- 23.
- 24.
- 25.
- 26.
- 27.
- 28.
- 29.

30. ennsis) in Lake Arenguade (Hora-Hadho) and Chitu

Field data collection of this activity is already finalized. Spirulina isolation is completed. Some physico-chemical and biological parameters of water samples are being conducted in laboratory. As soon as laboratory work completed, full data entry and write up will continue for recommendations. However, based on the current data, the two lakes have enough algal density (spirulina) especially the production was high from January 2023 (Amajjii 2015) till this time.





Fig 1. Spirulina isolation and determination for some physico-chemical and biological parameters at laboratory

31. Assessment of Haramaya Lake for Fisheries Enhancement

Field data collection of this activity is also already finalized. Some physico-chemical and biological parameters of water samples are being conducted in laboratory (Fig 2). Due this the write up is not completed. However, based on some available data, the lake has enough fish feed which increases fish production. In addition to this one, Haramaya Lake has stable water depth and we forecast that it will continuously support fish production and other socio economic activities if its management continuous like the current time.



Fig 2: Laboratory Analysis for some physico-chemical and biological parameters collected from Haramaya Lake

B. Aquaculture Research Team

1. Evaluation of the status of stocked fish ponds in Oromia region.

The write-up of this activity has not yet completed.

The results of the research indicated that the fish in Aquaculture ponds can grow to larger sizes of over 300g as witnessed from individual fish grown in well managed ponds at Adama, Jimma and even in the highland ponds at Wachale district of North Shoa. Farmers have exercised fish eating and developed interest in fish farming. Some of the fish farmers started making money out of the fish farms by selling fish fingerlings and food fish, in addition to consuming the fish at home. This motivation and start gives hope to the development of Aquaculture in the Oromia region to contribute nutritional security to the poor farmers.

However, there were problems in site selection related to water availability as in West Hararge. Fish ponds managements among the fish farmers were very poor in most of the surveyed ponds. The fish escape from the ponds both via the open inlet and outlet canals especially in Wonji reservoirs of Adama district and Kersa district of Jimma Zone. Pond water depths were very shallow, stressing the fish and limiting their growth. These factors along with lack of feed supplement limited fish growth in many of the surveyed ponds. Extension workers and farmers should be trained and equipped with knowledge on site selection and fish pond management before starting the fish farm.

2. Evaluating the potential of Periphyton production on growth performance, feed utilization and survival of *Oreochromis niloticus*

Data collection of final month and write-up of this activity were not completed. Based on the two month data collected so-far, the growth of *Oreochromis niloticus* in ponds equipped with full substrate area (Bamboo poles area equivalent to ponds surface area) was higher than the control and the half substrate area. The abundance of phyto and zooplanktons in the water column was similar across the treatment and the control group. However, the abundance of zooplankton on the substrate (periphyton) was extremely high and this plankton promoted the fish growth in treatment group (data not analyzed). Installation of substrate in juvenile fish pond, promote fish growth.



Fig 3. Experimental ponds with substrate bamboo poles and the zooplanktons inhabiting the substrate as seen under microscope.

3. Socioeconomic Research Team

Title. **Determinants of Adoption of fishery Technologies in the Oromia National Regional State of Ethiopia**

For this study, we have collected secondary and primary data from six zones of Oromia regional state and have obtained some information regarding the adoption of capture fishery and aquaculture technologies. As the result the user/s of capture and aquaculture technologies are not utilizing the fishery technologies as intended by fishery and aquaculture research direction. Absence of technical and financial support from government, NGO`s and research centers, Shortage of fishery/aquaculture inputs in different fishery and aquaculture potential areas and Absence of monitoring of the implemented work by government and research centers after the completion of the demonstration and scaling up of the fishery/aquaculture technologies in different fishery/aquaculture potential areas as some factors.

4. State major intermediate results/outputs (if any) obtained from ongoing research activities (doesn't include pre-extension demonstration and pre-scaling up activities)

4.1 Assessment of the fisheries activities and factors that affect the production of fish in Beseka Lake

This activity was started in 2014 EC. In 2015 EC, no any other intermediate result obtained rather than what reported in 2014 EC as an intermediate result. The reported intermediate result was the availability of one new fish species known as *labeobarbus intermedius* which was not present in the Lake (Fig 3). Besides of this one, the water chemistry of the lake dramatically changed from the previous findings. So, this was the intermediate result obtained from the activity in 2014 and 2015.



Fig 4: During data collection from Lake Beseka

4.2 Assessment of fish species composition, some biology and fishing gear Selectivity in Lake Harkiso

- Only Nile Tilapia and African Catfish obtained from the Lake as an intermediate result (Fig 4).



Fig 5: Fish collected from Harkiso Lake

4.3 Limnology, fishery activity and health assessment of Abasamuel Reservoir

This research activity was started this year (2015 EC). As an intermediate result, only one fish species called African catfish was caught from the reservoir (Fig 5). Other parameters like water chemistry and fish health was examined (internal and external parasites). Accordingly, the nutrient content of water sample from the reservoir was very high especially the soluble phosphate was recorded high. The health of the fish was in good condition.



Fig 6: Photo during data collection from Abasamuel reservoir, 2015

4.4 Assessment of Liminological parameters and the status of fish species in Lake Abijata

Under this activity, water chemistry and fish production of the Lake by using different fishing gears was conducted. As an intermediate result, high fish production and productivity of the Lake was observed (Fig 6). The water chemistry of the lake was also good. However, in the past two months, the salinity of the Lake increased as a result of water volume shrinkage of the lake. Consequently, mass mortality of the fish observed (Fig 7).



Fig 7: Fish production of Lake Abijata and fish mass mortality due to water chemistry change

4.5. Assessment of current fish species composition, fish biology and gear selectivity of Fincawa, Amerti and Nashe reservoir

- The activity is yet not start due to security problem

4.6. Assessment of fish species composition and the fishery activities in Lake Wenchi and Dendi

- The activity is yet not start due to security problem

4.7. Introduction and adaptability study of *Oreochromis niloticus* in Gidabo and Ganale Reservoir, Oromia

- The activity is yet not start due to security problem

4.8 Microplastics concentration in the environment, its impact to some biota, and along the food web in lakes Koka, Ziway and Hawassa, Ethiopia (PhD theses)

This activity is a PhD thesis of Mr.Mathewos Hailu. The activity is in a good progress. He has already finalized two objectives.

4.9 Nutritional characterization of edible freshwater macrophyte and potential in bread making and edible packaging film production (PhD theses)

This activity is a PhD thesis of Mr.Alemu Lemma. He also finalized two objectives two objectives are not finalized yet due to unavailability of chemicals and the price as a result of market fluctuation.

4.10 Genetic improvement of selected *O. niloticus* strains through line selection on station (BFOALRC).

Three *Oreochromis niloticus* strains originated from Chamo, Koka and Ziway of Ethiopian Rift Valley Lakes were under improvement through subsequent selection for better growth performances in aquaculture. Initially, parent tilapia stocks were collected from wild and generations of these tilapia lines have been produced in ponds at Batu Center, where vigor individuals among the generations were selected from the batches to produce next improved generations. This year, growth performances of the third generation of Chamo and Koka strains and 2nd generation of Ziway strain were evaluated. Vigor parents of these batches

were selected and next generations were also produced from these selected individuals, for the growth performance evaluation of the succeeding generation.

The data shows that growth performances of the three populations were different with the Chamo population achieving the better growth performance. Within the population, each new generation produced from the selected parents were better in growth performance than their preceding parent populations.



Fig 8. Experiment on genetic improvement of tilapia through selection in experimental ponds at Batu Research Center, 2015EC.

4.11 Effect of feed supplementation on the growth performance of African catfish (*Clarias gariepinus*) in a cage culture system in Lake Babogaya.

For this experiment, appropriate site was selected from Lake Babogaya, nine cages were constructed for the experiment, experimental feeds and fish were prepared. The cages in designed frame were set in Lake Babogaya and fish were stocked. Fish feeders were hires and trained to manage the cages and feed the fish according to the treatments. The experimental process and data collections were started. The fish in the experiment were adapted to the system with growth progress recorded in the first month.



Fig 9. Cages with African catfish in Lake Babogaya, set for evaluation of feed type on growth performance.

4.12 Growth performance evaluation of *Heterotis niloticus* under aquaculture condition at BFOALRC

Eighty-four juvenile fishes of *Heterotis niloticus* species were collected from Gambela in November 2015 EC and stocked into experimental ponds at Batu Research center to evaluate their growth performance and adaptation in pond culture. The fish had survived in the pond for one month after which high mortality happened around mid-December. Efforts were made to improve feed and water quality but still mortality did not stop. The fish death continued in the following months and over 90% of the fish were lost at the end of May 2023.



Fig 10. *Heterotis niloticus* survived in experimental ponds at Batu Center, 2015EC.

4.13 Optimizing the brood stock maintenance and hatchery performance of *Cyprinus carpio*

The brood fish, Common carp, were collected from the wild sources (Koka and Gefersa reservoirs) and concentrated in to the experimental ponds at Batu Center as planned. These collected brood fish were managed in the ponds with proper water quality and feed supplement. The brood fish are conditioned and ready for breeding.

4.14 Induced spawning of endangered and endemic fish species (*Labeobarbus ethiopicus*) in Batu Fish and Other Aquatic Life Research Center

The rare and endangered *Labeobarbus ethiopicus* live fish were required for the induced spawning in this experiment. Several attempts using different fishing gears (Gillnets, beach seine and electro fishing) by different experienced workers of the research center were made to collect the live fish from the selected sites of the lake for five months in the last three quarters. The fishing efforts made in the lake caught the dominant fish species like Tilapia, Carp and African catfish. However, only the gillnet setting among other fishing gears, in only one specific site in the lake, caught few number of the targeted *Labeobarbus ethiopicus* fish. These few fish caught in gillnet were found dead in the net, in which only two live fish were collected so far. The spawning experiment was not started because of the insufficiency of the number found.



Fig 11. *Labeobarbus ethiopicus* fish species caught from Lake Ziway (Hara Dambal) in 2015EC.

5. Pre-extension demonstration activities performed in the year (support with pictures)

No	Title of the activity	Name of the technologies demonstrated	Location (district, PAs and FTCs)	Plot size (M ²)	Quantity/amount of the technology distributed	Number of participant farmers/pastoralists					Benefits obtained (productivity/income gain)
						Adult men	Adult women	Young men	Young women	Total	
1	Pre-extension Demonstration of Nile Tilapia (<i>O. niloticus</i>) Fingerling Multiplication Method in selected site of East Showa Zone, Ethiopia	Nile Tilapia Fingerling Multiplication Method	Ada'a	150m ²	1						

Rm: This technology was started after Modification and Extension made on regional Review. So, all technology demonstration will be done in this budget year.

6. Pre-scaling up activities performed in the year (support with pictures)

No	Title of the activity	Name of the technologies scaled up/out	Location (district and PAs)	Plot size (ha) per farmer used for the trial	Quantity/amount of the technology distributed	Number of participant farmers/pastoralists					Benefits obtained (productivity/income gain)
						Adult men	Adult women	Young men	Young women	Total	
1	Pre-scaling up of Improved Fish Processing Table technology	- Fish Processing Table technology	Sokoru distrikt, Enkure Kebele	-	1	53	12	62	5	132	
Total						53	12	62	5	132	



Fig 12. Picture showing pre-scaling up activity

7. Basic technology multiplication

Res. team	Type/name of technologies planned to be multiplied in the year (As per given in GTP=II) plan	Unit	Amount planned to be multiplied(as per PP) plan	Amount multiplied	Performance as % of annual plan	Reason for under performance, if any
-	-	-	-	-	-	-

8. Technology multiplication by Farm management

8.1. Forage seed multiplication

Res. team	Type/Name of forage variety	size of land planned to be cultivated(as per PP) plan	Land actually cultivate (ha)	Amount of seed yield planned to be obtained	Amount actually obtained (qt)	yield performance as % of annual plan

- Indicate Reason for under performance, if any _____
- Indicate how many of these are distributed and to whom, disaggregating by gender _____

8.2. Other technologies multiplied (improved heifers, bulls, bucks, fingerlings, etc)

Res. team	Type/Name of technology	unit	Annual plan (as per GTP-II plan)	Annual performance	Performance as % of annual plan	Reason for under performance, if any
Basic Technology multiplication	Fish fingerling	№	100,000	115,000	115	
	Retaining cage	№	0	2		
	Boat technology	№	3	3	100	
	Processing table technology	№	20	17	85	
	Net technology	№	4	8	200	

❖ **Indicate how many of these are distributed and to whom, disaggregating by gender** 93,700 of fingerlings, 3 boats, 2 retaining cage, 15 processing table, 4 net were distributed to fishermen, different Universities, NGOs and private sector through our Center and Oromia Agriculture Bureau.



Fig 13. Technology production and distribution status

9. Trainings given for SMS, DAs and farmers in the year

9.1. Farmers training

No	Research team	Training topic	Location (where the training is given)	Duration (for how long)	Number of participants				Remark	
					Adult Men	Women	Young men	Young women		Total
1	Capture Fishery	Fishery management of Lakes Koka and Dambel, Postharvest loss management, Fishing gear	Batu	3	29	3	10	-	42	
2	Capture Fishery	Fishery management of Gilgelgibe reservoir, Postharvest loss management	Jimma	3	25	7	13	10	55	
3	Agricultural Extension	On Improved Fish Processing Table technology	Jimma	3	54	6	55	5	120	
Total					108	16	78	15	217	



Fig 14. Training provide for fishermen

9.2. SMS and DA's training

No	Research team	Training topic	Location (where the training is given)	Duration (for how long)	Number of SMS trained			Number of DAs trained			Remark
					Male	Female	Total	Male	Female	Total	
1	Capture Fishery	Fishery management of Lakes Koka and Dambel, Postharvest loss management, Fishing gear	Batu	3	57	12	69	0	0	0	
		Fishery management of Gilgelgibe reservoir, Postharvest loss management	Jimma	3	3	2	5	4	1	5	
2	Aquaculture Research Team	Aquaculture management, Fish breeding, fishery health and husbandry management, water quality management in aquaculture, fish species identification, fish feed preparation	East Showa Zone, Batu	5	65	12	77	39	0	39	
3	Extension Research Team	On Improved Fish Processing Table technology	Jimma Zone, Sokoru	3	14	5	19	11	2	13	
Total					139	31	170	54	3	57	



Fig 15. Training provide for fishery experts and DAs

10. Field days organized in the year

No	Technologies/research activity on which field day was organized	Location (district and PAs)	Number of participants							
			Farmers/pastoralists					Extension workers	Other stakeholders (GOs and NGOs)	Total
			Adult Men	Adult Women	Young men	Young women	Total			
1	Fish Processing Table technology	Sokoru, Enkure kebele	32	6	74	5	117	4	11	132
Total			32	6	74	5	117	4	11	132

11. FRGs established/strengthened in the year

No	Research activity for which FRG was established/strengthened	Number of FRGs established /strengthened		Location (District & PAs)	Number of members					Remark
		Newly established	Strengthened		Adult Men	Adult Women	Young men	Young women	Total	
1		2	2	Sokoru, Ada'a & Bora	27	3	27	3	60	
Total					27	3	27	3	60	

12. Extension materials produced and distributed in the year

No	Research team	Topic & Type (leaflet, manual, posters, etc) of extension material	Quantity prepared (number)	Quantity distributed (number)			Remark
				For Farmers	For Others	Total	
1	Extension	Leaflet	85	71	14	85	
		Poster	2	-	2	2	
Total			87	71	16	87	

13. Articles published in the year by research team

Research team	Title of the article	Type (journal)	Name of the author(s)
Socio-economic R/Team	Economic valuation of ecosystem services of lake dambal-in-oromia-regional-state-ethiopia	journal	Abdulkakim Hussen and Addisu Hailu.
Agricultural Extension	Alemayehu Abebe Wake. (2023). Participatory Demonstration of Improved Fishery Technologies on Belbela Reservoir East Showa Zone, Oromia Region, Ethiopia. Int. J. Adv. Multidiscip. Res.10(3): 1-9.DOI: http://dx.doi.org/10.22192/ijamr.2023.10.03.001	Journal	Alemayehu Abebe
	Hailu A, Abebe A (2023) Assessment of Current Status of Fishermen Cooperatives at Selected Oromia Water Bodies, Ethiopia. Fish Aqua J. 14:324.	Journal	Addisu Hailu & Alemayehu Abebe
Capture fishery R/team	Prevalence of parasites of commercially important fish species in Lake Harkiso	Proceeding	Gebewo Tibesso
	Assessment of the diversity and some population aspects of fish in the potential rivers of Oromia Region	Proceeding	Gebewo Tibesso and Lemma Abera
	Assessment of Commercially Important Fish Species Parasites in Potential Rivers of Oromia Region	Proceeding	Gebewo Tibesso
	Assessment of the diversity and some population aspects of fish in the potential rivers of Oromia Region	Proceeding	Gebewo Tibesso and Lemma Abera
	Megerssa Endebu, Abebe Getahun and Misikire Tessema (2022). Spatial-Temporal Analysis of Physicochemical Parameters of Three Ethiopian Rift Valley Lakes Indicating Threats in Ecological Sustainability. <i>J. Environment and Earth Science</i> , 12(9):9-23. DOI: 10.7176/JEES/12-9-02	Journal	Megerssa Endebu, Abebe Getahun and Misikire Tessema
	Assessment of the diversity and some population aspects of fish in the potential rivers of Oromia Region. <i>IN: Proceedings of Review Workshop on Completed Research Activities of livestock Research Directorate held at Batu Fishery and Other Aquatic Resources Research Center, Batu, Ethiopia, 31 October -04 Nov, 2022. Oromia Agricultural Research Institute (IQOO), Finfinne, Ethiopia. 386 pp.</i>	Proceeding	Gebawo Tibesso and Lemma Abera
	Prevalence of parasites of commercially important fish species in Lake Harkiso. >>	Proceeding	Gebawo Tibesso
	Assessment of Commercially Important Fish Species Parasites in Potential Rivers of Oromia Region. >>	Proceeding	Gebawo Tibesso
Aquaculture Research Team	Megerssa Endebu, Abebe Getahun and Misikire Tessema (2022). Effect of elevated fry rearing temperature on survival rate, growth performance, and sex ratio of three <i>Oreochromis niloticus</i> populations of Ethiopian Rift Valley Lakes. <i>SINET: Ethiop. J. Sci.</i> , 45(3):347-358, 2022. DOI: https://dx.doi.org/10.4314/sinet.v45i3.9	Journal	Megerssa Endebu, Abebe Getahun and Misikire Tessema
	Getachew Senbete, Megerssa Endebu, Nanecha Bejiga and Daba Tugie (2023). On-Station Evaluation of Juvenile African Catfish (<i>Clarias gariepinus</i>) Growth Performance under different Stocking Densities in Concrete Channel Tanks at Batu, Oromia. <i>IN: Proceedings of Review Workshop on Completed Research Activities of livestock Research Directorate held at Batu Fishery and Other Aquatic Resources Research Center, Batu, Ethiopia, 31 October -04 Nov, 2022. Oromia Agricultural Research Institute (IQOO), Finfinne, Ethiopia. 386 pp.</i>	Proceeding	Getachew Senbete, Megerssa Endebu, Nanecha Bejiga and Daba Tugie
	Assessment of Status of Cultured Fish Parasites in Selected Districts of Oromia Region. <i>IN: Proceedings of Review Workshop on Completed Research Activities of livestock Research Directorate held at Batu Fishery and Other Aquatic Resources Research Center, Batu, Ethiopia, 31 October -04 Nov, 2022. Oromia Agricultural Research Institute (IQOO), Finfinne, Ethiopia. 386 pp.</i>	Proceeding	Gebawo Tibesso

14. Current manpower status of the Center

Research team/support process	Number														Remark
	PhD		MSc/MVSc/MA		DVM		BSc/BA		Dip		Others		Total		
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
Research	1		7				3	-	6	1	12	1	29	2	
Support							6	3	4	5	13	2	23	10	
Total	1		7				9	3	10	6	25	3	52	12	

Rem. M= Male and F= Female

15. Number of Staff on long term training

Research team	Level of education pursued (MSc/PhD)	Those started in 2012		Those started in 2014EC		Those started in 2015 EC		Total		Over all Total
		M	F	M	F	M	F	M	F	
Aquaculture	MS c	2	-	-	-	1	-	1	-	3
Capture Fishery		-	-	-	-	-	-	-	-	
Total		2				1		3		3

In your narration:

- One of the student is studying at Jimma University/Postharvest and nutrition technology/ one studying Addis Abeba University /Fishery ecology/ and the other student is studying at Hawasa University (Fishery).

16. Staff recruitment & transfer for the Center

- Two staff recruited for Center in this budget year

17. Capacity building activities

In 2015 budget year the Center plan to finalize dormitory furnishing, Bath and toilet room construction, indoor hatchery, cafeterias, and pond maintenance. All planned capacity building were done with the required standard.

17.1 Dormitory furnishing activity (supported by LFSDP)



Fig 16. Status of Dormitory furnishing activity (supported by LFSDP)

17.2 Bath rooms (10), Rest (10) & Washing Rooms (2) (supported by AGP-II)



Fig 17. Status of Bath (10), Rest (10) & Washing Rooms (2) (supported by AGP-II)

17.3. Cafeteria construction status on 450m²



Fig 18. Status of Cafeteria construction status on 450m²

17.4. Indoor hatchery building construction done on 300m²



Fig 19. Status of Indoor hatchery building construction done on 300m²

17.5. Difference maintenance done around fish pond



Fig 20. Status of fish pond area maintenance

17.6. Maintenance of old toilet were done (8 rooms)



Fig 20. Status of Maintenance of old toilet were done (8 rooms)

17.7. Outdoor hatchery pond construct on 952m² (under construction)



Fig 21. Status of Outdoor hatchery pond construct on 952m² (under construction)

18. Capital budget allocation and utilization

18.1. OARI funded

No	Research team	Annual Plan & utilization in “000”			Remark
		Planned/allocated for the year (Birr)	Utilized		
			(Birr)	% of allocated	
1	Fishery research process	2000.5	1955.2	97.74	
2	Socio–Economics Research Team	263.5	232.274	88.15	
3	Extension Research Team	288.7	273.488	94.73	
4	Technology Multiplication Team	1214.6	1213.012	99.89	
Total		3767.3	3673.974	97.52	

18.2 Funded by other organizations (EIAR)

No	Research team	Annual Plan & utilization			Remark
		Planned/allocated (Birr)	Utilized*		
			(Birr)	% of allocated	
1	Livestock Research Process	68000.00	67570.87	99.37	
Total		68000.00	67570.87	99.37	

19. Recurrent budget allocation and utilization

19.1. OARI funded

No	Research Center	Annual Plan & utilization			Remark
		Planned/allocated for the year (Birr)	Utilized		
			(Birr)	% of allocated	
1	Batu Fish & OALR	7,931,989	7,620,073.03	96	
Total		7,931,989.00	7,620,073.03	96	

20. Mention any other technical and administrative activities conducted in the year (eg. Workshops conducted, panel discussions organized, technical advisory services given, hosting apprenticeship students, experience sharing to other institutions, forming institutional collaborations with other institutions etc.)

Batu Fishery and other aquatic life Research Centre has developed better linkage with Oromia Bureau of Agriculture in both research, Training extension services and capacity building. Following this bilateral agreement the centre has benefited more 18 million birr financial support and we able to construct indoor hatchery, outdoor fish hatchery pond on 952m² of land (currently under construction), maintenance of existing ponds, purchase of fish transportation vehicle, furnished dormitories, provided training for technical staff, Organized training for fishermen, fishery experts and DAs.

Awareness creation on Live Fish Transporting Vehicle



Fig 22. Awareness creation on Live Fish Transporting Vehicle

Additionally Batu Fish and Other Aquatic Life Research Center provide technical support for more than 350 BSc student, and more than 50 MSC participate, Again we participate on fishery regulation and guideline preparation, Wonchi Dandi Ecotourism Integrated Agricultural Development and Lively hood Restoration Proposal preparation.



Fig 23. Center participation on fishery regulation and guideline preparation and Wonchi Dandi Ecotourism Integrated Agricultural Development and Lively hood Restoration Proposal preparation

Further our Center participate on different workshop and technology demonstration at Oromia and National Level.



Fig 24. Participation of Center on technology demonstration

21. Laboratory setup and logistic status of the Center

The center have good laboratory set up that used for different analysis. in our laboratory the following parameters analyse with the required standard; like Sulphate (Liquide type), Sodium (Liquid & Solid type), Potassium (Liquid & Solid type), Calcium (Liquide & Solid type), Litium (Liquid & Solid type), Barium (Liquid & Solid type), physicochemical (Ph, conductivity, Alkalinity), Nutrient (Nirate, Nitrite, total Nitrogen, phosphate, total phosphorus), conductivity (chlorophyll a, b, c), irradiance, dissolved oxygen, and Ph.

Regarding on logistic facility the center have three (3) functional car (2 filed car and 1 one Live Fish Transporting vehicle).



Fig 24. Car logistic and laboratory status of the Center

22. Technical and administrative challenges and problems encountered and measures taken in the year

No	Problems encountered	Measures taken	Solutions suggested	Remarks
1	Budget shortage	Merging research activities together, Reducing frequency and number of participants in field data collection	Allocation of budget based on the nature of research activities	
2	Shortage of human power	Work by with exiting human resource	Our institute should be work on recruitment	
3	Lack of boat and shortage of engine	Work through borrowing from other institution	IQQO should be purchased	
4	Service vehicle problem	No measure taken	IQQO should be purchased and make access to staff	
5	Fencing problem	Protected by digging canal	IQQO should be work on fenced in all side of the Center compound	