



Overview of fish production system and Health in Ethiopia; challenges, opportunities and recommendations.

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Introduction

- Population: >> 120 million
- Main lakes and rivers covering a total area of 750 000 hectares
- Major rivers elongating well over 7,000 km.
- Total annual fish production potential reaches nearly 100, 000 tons (rough estimation) (**Not including GERD**)
- Generally > 200 fish species of which
 - 40 are endemic
 - Few exotic (like Carp)
 - Mostly Indigenous (like Tilapia)

Commercially important fish species & their % catch compositions



Bagrus



Labio



C. Carp



S. Carp



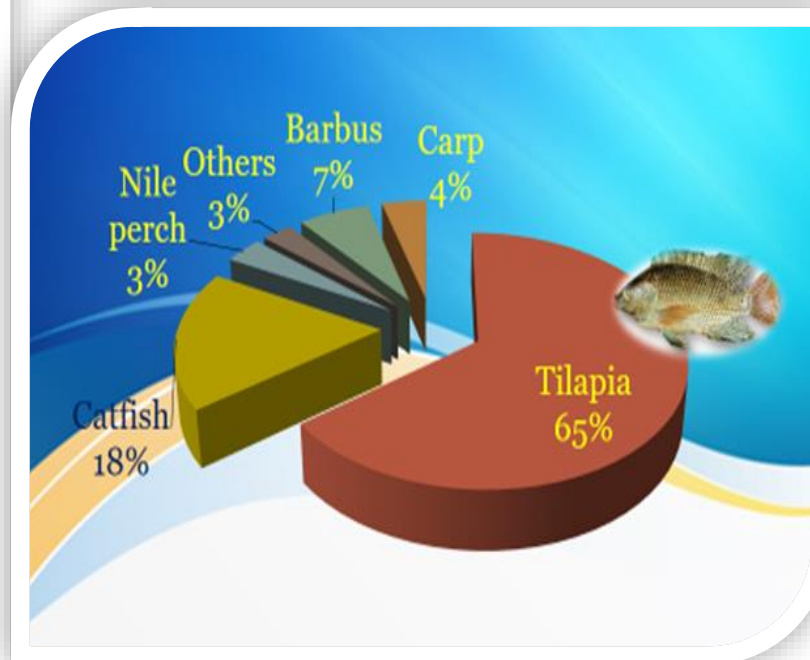
N. Perch



Catfish



N. Tilapia

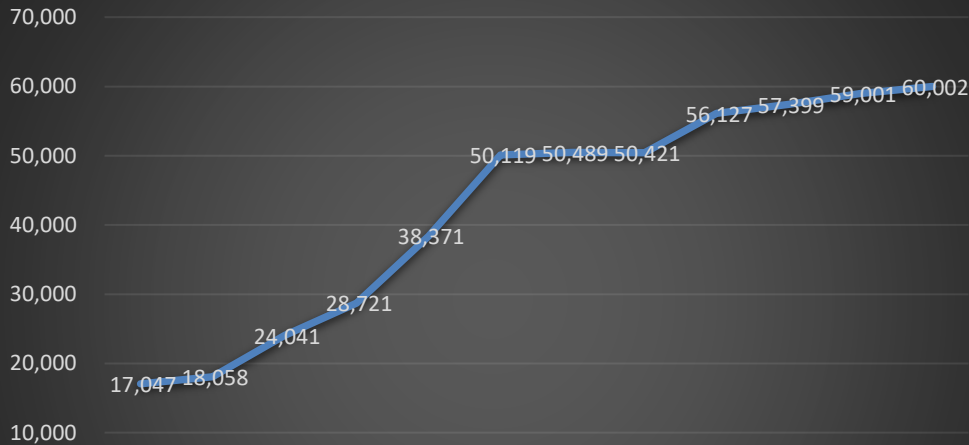


Current production trend

Production trend

National catch, 2021/2022

Total Production trend



2009/10	2002
2010/11	2003
2011/2012	2004
2012/2013	2005
2013/2014	2006
2014/2015	2007
2015/2016	2008
2016/2017	2009
2017/2018	2010
2018/2019	2011
2019/2020	2012
2020/2021	2013

Water body	Annual Production (MT)	
	Figure	%
Major Lakes	37,600.00	51.93
Major Rivers	12,000.00	16.57
Reservoirs	22,800.00	31.49
Aquaculture	0.74	< 1
Total	72,400.74	100.00

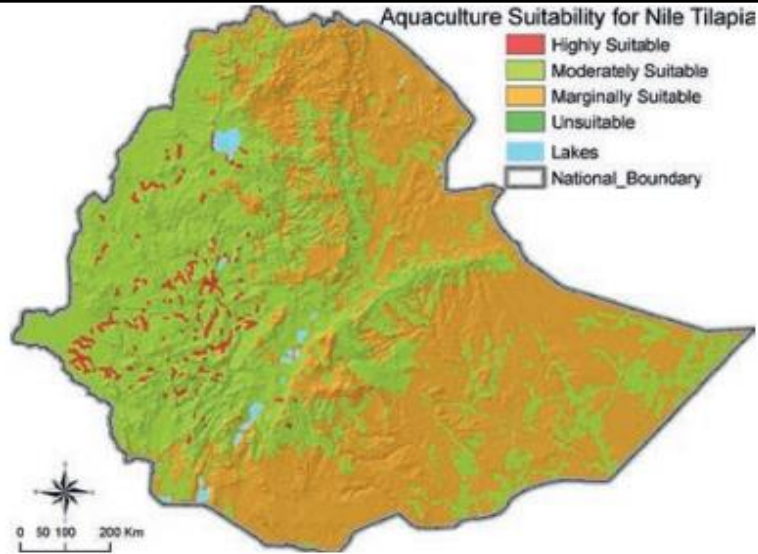
Aquaculture in Ethiopia



- ✓ More than 1500 pond fish farmers at national level.
- ✓ Ponds sizes: area 100 – 300 m² each.
- ✓ Most pond fish farming are integrated with irrigation and other crops and horticulture
- ✓ Candidate fish Species
 - Nile Tilapia (*Oreochromis niloticus*)
 - Cat fish (*Clarias garipinus*)
 - Crusian Carp (*Cyprinus carpio*)
- ✓ Market
 - Mainly Domestic
 - Very Little Export
- ✓ Fish Farming System
 - Dominantly Subsistence
 - Semi-Intensive
 - Commercial farming
 - Almost non existence
 - Start-up of Trout farm

Potential for aquaculture in ET

Suitability map for aquaculture in ET: Nile Tilapia



(Source: Eshete, D. and Zemenu, M. (2012))

- Water availability (annual rainfall, distance from water)
- Topography and soil texture
- Land use/cover (Grassland, woodland and bush land agricultural land)
- Temperature regime
- Economic parameter (Distance from road, Distance from market centre, Population density)
- Conclusion:
 - 15,158 km² & 871,731 km² of the nation's total land area is highly suitable and suited for Nile tilapia ponds respectively.

Strengths

- Availability of ample water resource and fertile soil as well as cheap labour
- Political willingness to eradicate poverty in the country and the sector is one of the top prioritized agenda
- Availability of policy, strategy and legislation for resource development and management

Opportunities

- Availability of suitable soil type and topography and suitable for investment.
- Availability of a lot of dams including the coming new big dams, like **GERD**, for developing fisheries, cage, pen culture and others.

Challenges

- Absence of fish food processing plants
- Lack of aquaculture equipment and input supplies like:
 - Fish seeds & Hatcheries, and
 - Technical knowledge, & technologies
 - Ready Fingerlings (both in quality and quantity improved fish species)
- Lack of fish feed
- Lack of projects that support particularly the aquaculture sector.

Legal frameworks

1. Fish Resource Development and Utilization Proclamation 315/2003 is the base legal framework for fisheries and aquaculture in the country.
 - 1.1. Two regional governments produced their own respective proclamation.
 - 1.2. Following this proclamation,
 - A. Fish Products Quality Control Regulation suspended for approval and
 - B. Fish Resource Management Control Directive,
 - C. Fishing License Directive are prepared and pending for validation
2. National Aquaculture Development Strategy was formulated in 2009 for development of aquaculture and the
3. Ethiopian Quality Standard Authority produced fish product quality standards (12), recommended code of practice (7) and Guidelines (2).

Strategic ideas for fishery and aquaculture

Possible action plans to be outlined.

- Expanding fish production from unexploited or slightly exploited reservoirs and rivers.
- Implement proper fishery management system on major lakes, which have high fishing pressure for sustainable utilization of the resource.
- Promotion and expansion of aquaculture development.
- Integration of aquaculture with other developmental works like hydropower, and irrigation schemes.
- Improve fish processing and marketing to reduce spoilage and facilitate fish market.

Aquatic animal health

- MoA is implementing surveillance system for early warning and monitoring of diseases
 - ⇒ Active and passive for TADs and other priority diseases
- Design and coordinate national surveys
 - ⇒ Poultry diseases, Cattle and small ruminant diseases
- Risk analysis routinely conducted to ensure healthy and safety of animal and animal products
 - ⇒ Focusing on importation
- Implementation of LITS along export value chaine
 - ⇒ Inspection and data recording at farm, abattoir and quarantines
 - ⇒ Not integrted with surveillance system

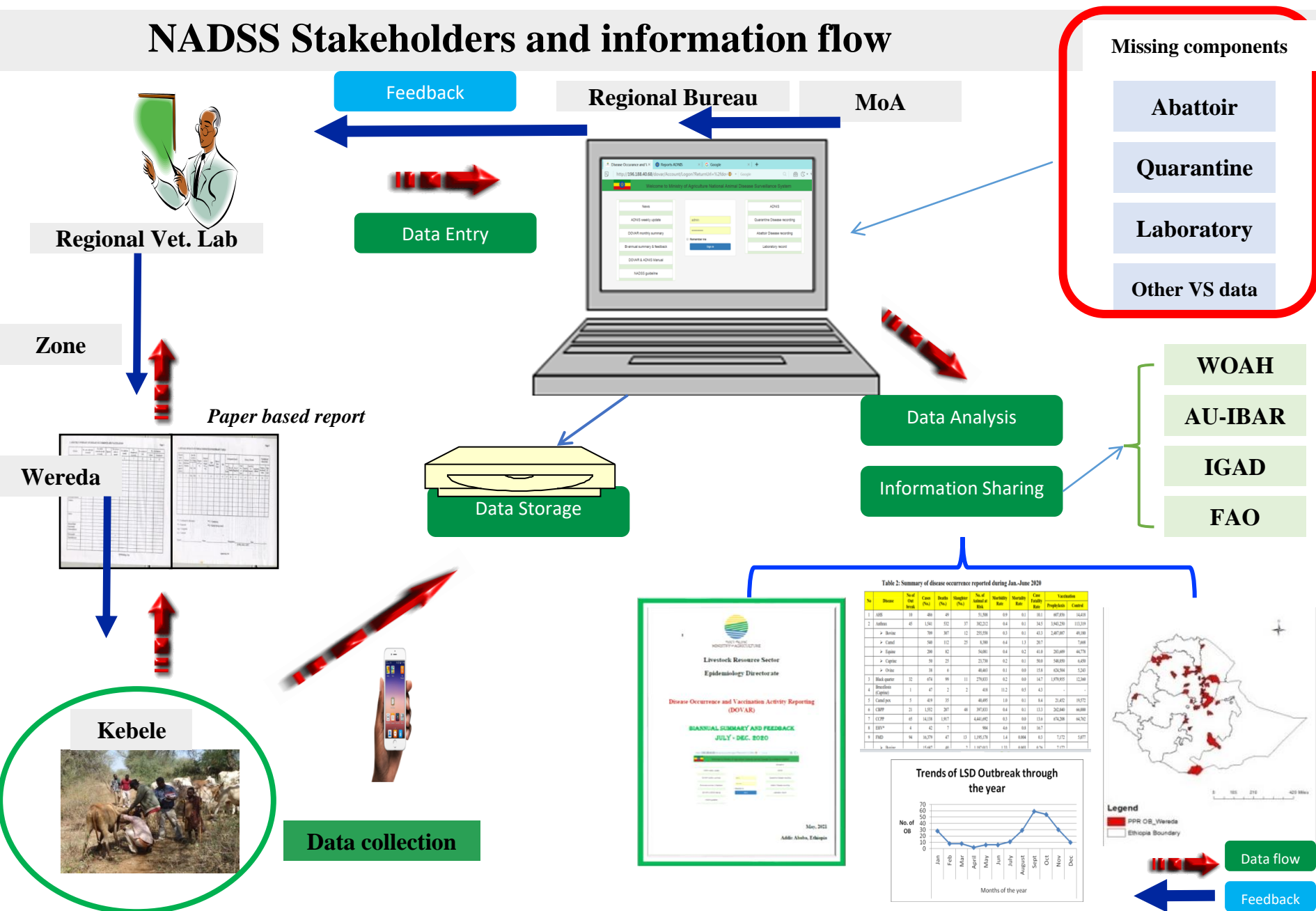
Aquatic animal health

- Two surveillance systems available (ADNIS & DOVAR 2)
- Very limited trend to report aquatic animal diseases; mostly associated with knowledge gap.
- Fish disease surveillance conducted in 2021 to get information (organized by MoA).
- Prior to this, various reports largely associated with research have generated information on diseases.
- parasitic disease
- Seven or eight years back an outbreak investigation conducted in one aquaculture identified Yersiniosis.

Aquatic animal health

- On-going capacity development for animal health institute (NAHDIC).
- Integration of fish diseases into national surveillance system.
- Technical assistance to strengthening fish disease diagnosis, surveillance and monitoring capacity (TCP/ETH/3805).
- General surveillance.
- Import risk analysis & control at check posts.

NADSS Stakeholders and information flow



Missing components

- Abattoir
- Quarantine
- Laboratory
- Other VS data

Regional Vet. Lab

Regional Bureau

MoA

Zone

Paper based report

Wereda

Data Storage

Data Analysis

Information Sharing

WOAH

AU-IBAR

IGAD

FAO

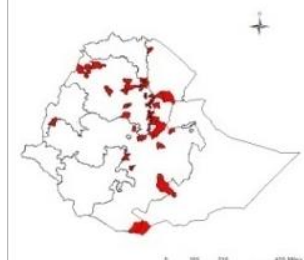
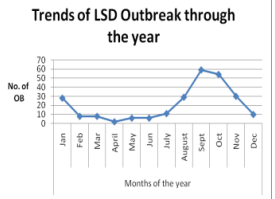
Kebele

Data collection



Table 1: Summary of disease occurrence reported during Jan-June 2020

No	Disease	Sub total	Cases (No.)	Deaths (No.)	% of total of No.	Mortality Rate	Case Fatality Rate	Yield/loss	Control	
1	ABIS	19	480	29	51.98	6.9	91.1	87,530	14,811	
2	Arbiter	40	1,540	110	37	19,212	8.4	343	3,942,250	113,191
3	Bahar	760	387	12	21,018	6.3	81	423	2,487,817	49,108
4	Conif	540	111	20	6,380	4.4	13	297	7,588	7,588
5	Egipic	200	42	1	54.00	0.4	4.2	41.9	20,489	44,779
6	Egipic	16	23	1	23,780	6.2	91	56.8	34,893	4,618
7	Ortiz	16	8	0	40.61	0.1	0.0	15.8	42,564	3,241
8	Block water (Egipic)	32	674	96	11	27,933	6.2	147	1,79,935	12,346
9	Egipic	1	47	2	408	11.2	9.5	4.3	-	-
10	Conif/ps	2	409	10	40,495	1.9	61	8.4	2,145	19,772
11	CGPV	20	1,152	207	48	19,211	6.4	113	20,249	49,496
12	CGPV	67	14,118	1,917	4,441,492	0.2	10.9	15.6	47,268	4,762
13	EDM*	4	42	7	964	4.9	18	16.7	-	-
14	FDI	54	16,379	47	13,145,178	1.4	8.84	8.1	7,112	1,877
15	Bahar	1447	26	1	1,187,811	1.1	8.89	6.76	1,171	-



Data flow

Feedback

THANK YOU