

Teff VALUE CHAIN ANALYSIS



Adet, Ethiopia
November 2008

SECTOR: AGRICULTURE

**Sub Sector: Crop Production-
teff Value Chain**

Sector of growth & transformation plan

1	Agriculture
1.1.	Crop production & protection
1.2.	Animal production
1.3.	Natural resource development & protection
2	Industrial development
2.1	GMFA (metal fabrication)
2.2	Tannery
2.3	Sugar production
2.4	Cement
2.5	Metal & engineering
2.6	Chemical & pharmaceutical factory
2.7	Agro processing
3	Mining
4	Economic infrastructure
4.1	Road development
4.2	Train transport
4.3	Road transport
4.4	Shipping transport
4.5	Air transport
4.6	Energy
4.7	Water & irrigation
4.8	Communication & ICT
4.9	Urban & construction
5	Trade
6	Health
7	Culture , tourism & sport
8	Social affairs

OBJECTIVE

Generally, the study was conducted to determine the present farming practices in Teff production in Y/Densa District , Amhara region.

Specifically, this aims to:

- Discuss the present cultural farming practices in teff production.
- Identify the Value Chain (AS IS) in Adet teff production.
- Compare the Value Chain (AS IS) to that of the benchmark.
- Identify the gaps and constraints in recommend technologies that will improve farmers practice & increase productivity

Figure and Facts

- Teff Productivity in Ethiopia

Productivity	At Farmers Field	In Research Center
Local variety	12-15 qt/ha	30-34 qt/ha

Facts and Figures....

- Top 3 teff producing countries in the world

Rank	Country	Productivity (qt/ha)
1	USA	60
2	German	58
3	Tibet	55

AS -IS teff production (Y/Densa)

- In adequate technological inputs
- Improper site selection
- Inappropriate field supervision and management
- Incorrect dose of fertilizer application
- Improper storage
- Less production within low quality

To be Teff production(USA)

- Adequate technological inputs
- Proper site selection
- Appropriate field supervision and management
- Correct dose of fertilizer application
- Proper storage
- High amount of production within quality

Teff Production Value Chain (AS IS)

Input

IRRIGATION FACILITY

SEEDS

FERTILIZER

PESTICIDES

FARM TOOLS & EQUIPMENT

Cultivation

SITE SELECTION

- Rain fed

Soil testing

- Not practiced

Land Preparation

- Traditional (use of animal)
- Manual
- 3-4 times Plowing

Planting

Seed variety

- Local Var(key laba ,dabo, dinbito)
- From farmer exchange
- Let maturity

Planting

- Broadcast methods
- 40/50 kg per hectare

Production & Management

Growth Monitoring

- monitoring once in 3 days
- One cropping year

Fertilizing

- Inorganic (4 g/plant mixed DAP and Urea)
- organic (Animal manure)
- Crop Rotation-

Weeding

- (3-4 times)
- 25% of total cost production

Insect & Pest Control

- Traditional
- Cultural
- chemical mix

Harvesting

- Delayed
- Manual method
- 10 days for harvesting time
- Low yield (12-15qt/ha)

Post-Harvest

Threshing

- delayed 2 -3 weeks
- Done in bare floor
- Use of 5-6 animal

Storage

- sacks in bare and floor
- Gotera ,gota made from mud & manure

Drying

- Solar drying in a bear soil

Milling

- Yellowish green
- Poor quality of grain

Transporting

- Donkey
- Manpower
- Pulled cart

Marketing

Wholesale

- Local assembler or trader

Retailing

- White teff(14 birr/kg)
- Seregna teff(12 birr/kg)
- Key teff(11 birr/kg)

Consumers

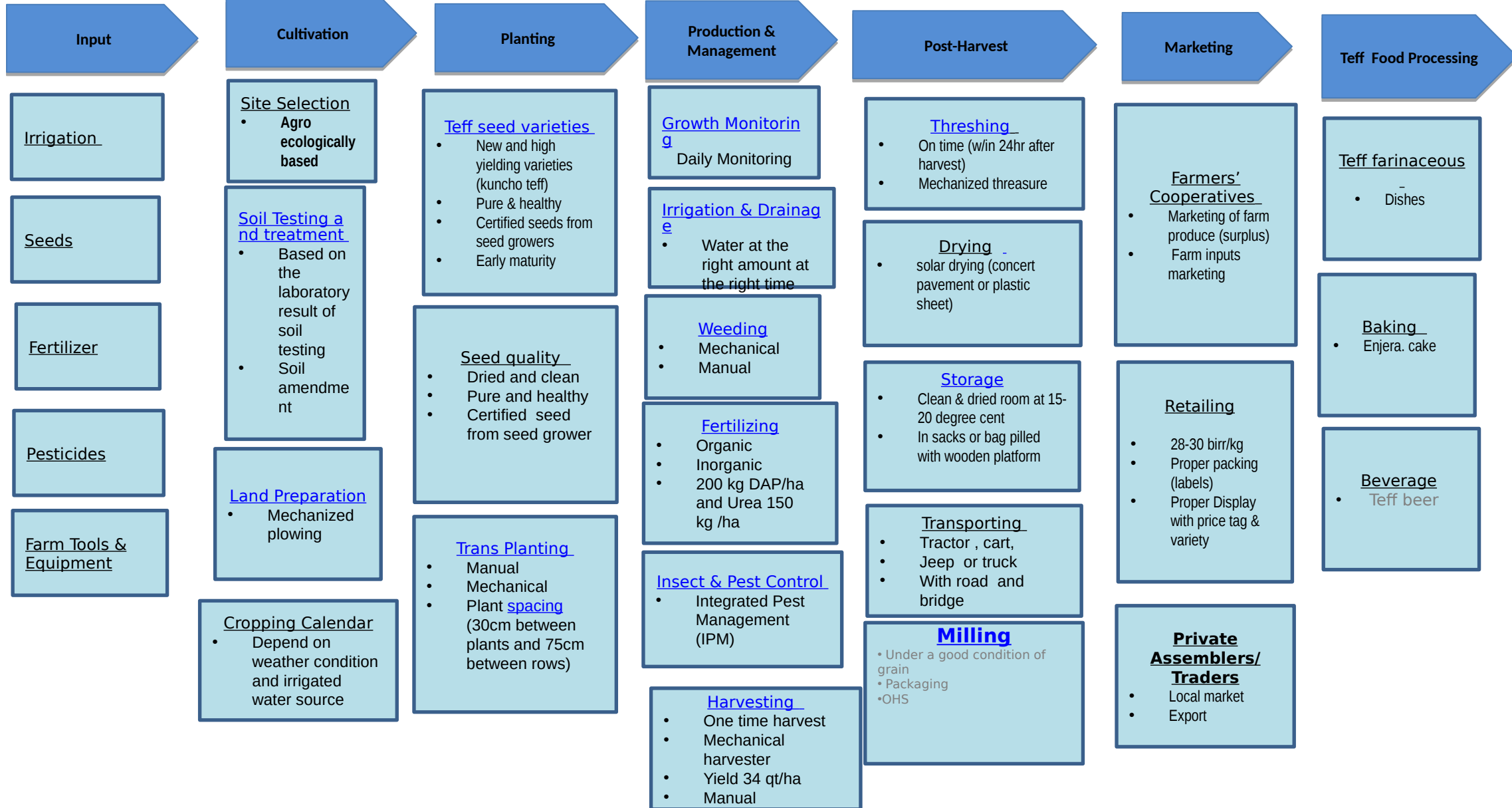
- Hotels,
- individual dwellers

Teff Processing

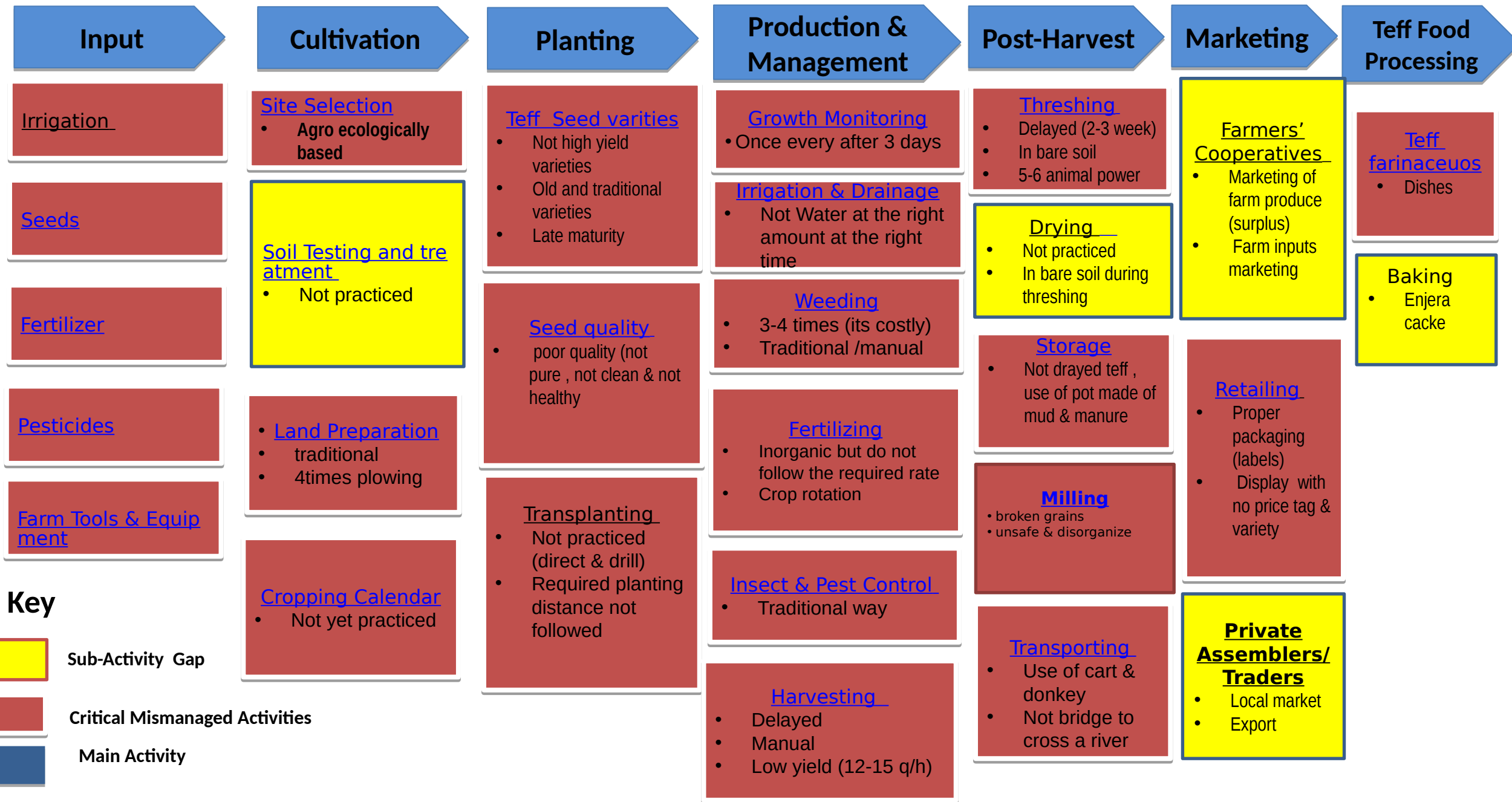
Powdering

- For enjera making
- For bread making some times

Teff Production Value Chain (To Be)



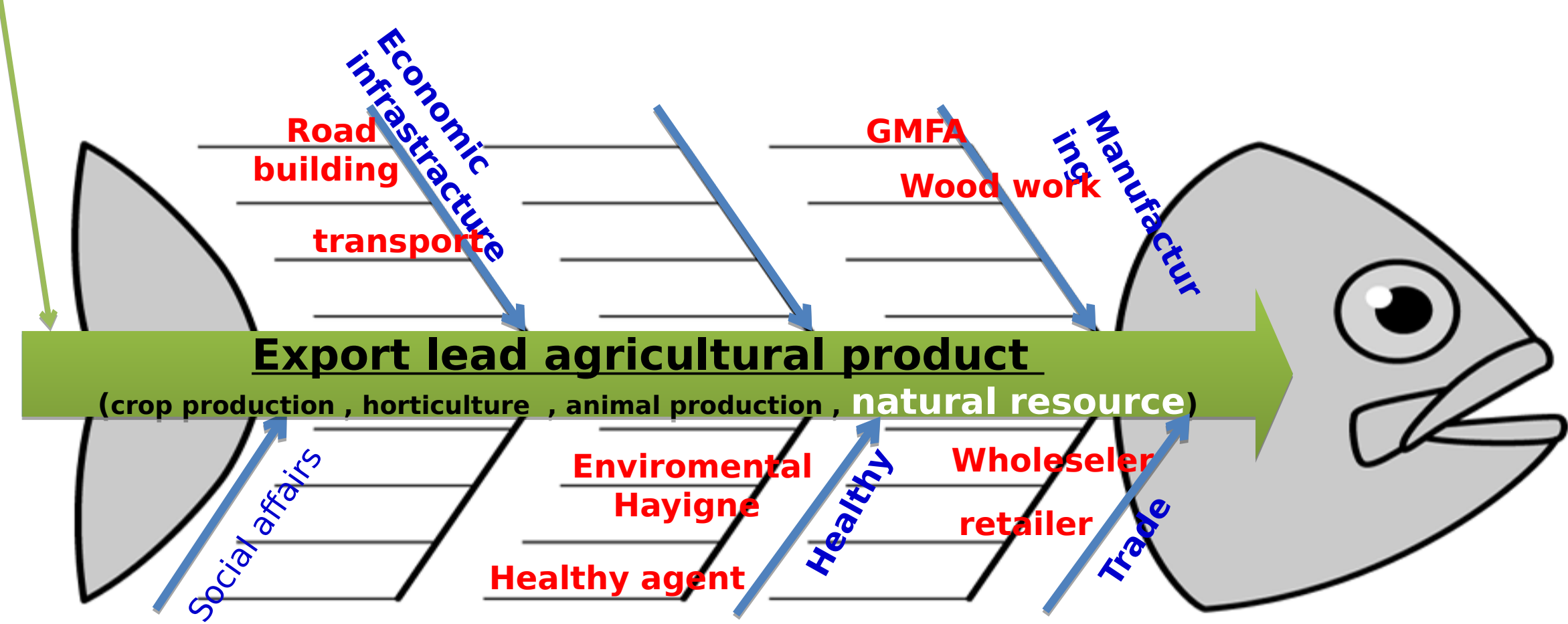
Teff Production Value Chain (Gaps/Constraints)



TECHNOWARE		HUMANWARE	INFOWARE	ORGWARE
IRRIGATION	1. Irrigation & drainage infrastructure (dam, canal system, sprinkler irrigation instrument)	Units of Competencies on: - Schedule irrigations - Implement maintenance program for an irrigation	- Water Management Manual - Cropping Calendar Manual	- Bureau of Irrigation to develop & construct irrigation infrastructure - Irrigators Association or Cooperative – government partner in IDP
SEED QUALITY	2. New improved Seed Varieties	Supporting qualified seed selection and handling technique	- Seed Quality Manual - teff Seed Production Manual	- Teff Seed testing Center - Teff Seed Growers - Teff Research Center
LAND PREPARATION	3. Moldboard Plough & Harrow	- Prepare land for agricultural crop production - Operate specialized machine and equipment - Support horticultural production	- Land Preparation Manual - Farm Power Operation Manual	- teff Demonstration Sites - Center of Farm Machinery Procurement
	4. Hand Tractor/Power Tiller		Hand Tractor Operation and Maintenance Manual	- Training center for teff production - Teff Research Center
Tuber seed Preparation	5. Adjusted room temperature 6. seed handling shelf	Establish crops Production	Seed Sprouting Preparation Manual	Seed provider Enterprises
Planting	7. Row planter	- Implement a plant establishment program - Implement Plant Nutrition Program	Methods of Planting Manual	
WEEDING	8. Rotary Weedier	- Treat weeds - Prepare and apply chemicals	- Weeds control Manual - How to Spray Pesticides	Center of IPM
Hoeing	9. Tractor mounted machine	Supervise crop establishment	Crops production manual /package/	Bureau of Agriculture / package developers/
HARVESTING	10. Ground Harvester	Co-ordinate horticultural crop harvesting	crops Harvesting Manual	
TRANSPORTING	11. Tractor Cart, Farm to market road			Road and Transport Agency
SOIL TESTING	13. Soil test kit/ pH meter	Soil sampling and analyze results	Soil Sampling Manual	Soil Analysis Center /Bureau of Soils
Packing	14. Packing materials(Plastic bags, paper bags and mesh bags)	Coordinate customer service & networking activities	crop products packing manual	Institution of quality Assurance
Storage		Maintain quality in storage	teff Processing manual	Farmers Cooperatives

Inter relation of value chain with focusing sector

1) Agriculture



Changes and Results Come from Bench Mark

Changes that come from Bench Mark

	Indicators	Measurements	As Is	Bench Mark
1	Knowledge and Skill of growers	Ability	Low	Very Good
2	Provision of Input	Amount	Not complete	Complete
3	Field Management	Crop stand	Good	Excellent
4	Harvesting	Time taken	High	Low
5	Storage and Packing	Customer Satisfaction	low	High

Results that come from Bench marking

	Outputs	Outcomes	Impact
1	Improved Field Management	Higher Crop Establishment	Higher yield
2	Efficient Production	Increased yield	Increased Income
3	Improved Packing and Transport	customer satisfaction	Marketability increase

Evaluation of the Value chain Analysis

- Teff production a familiar crop production in mid and highland areas of Amhara region including y/densa woreda(Adet).
- How ever, the production system is very traditional. As a result of these, the total yield of production as well as productivity per hectare is very low as compared to the bench mark taken from USA.
- The facts contribute for these gap are of the following.
 - In adequate technological inputs
 - Improper site selection
 - Inappropriate field supervision and management
 - Incorrect dose of fertilizer application
 - Improper storage

Planning

- Select site that can suit for teff Production.
- Acquire new technologies and skill.
- Acquire technologies for teff seedling managemnt. .
- Acquire infrastructures for irrigation such as canals, pipes, full drip irrigation accessories.
- Planting t based on the recommended spacing.
- Monitor site properly and regularly.
- Acquire knowledge and skill for Integrated Pest Management.
- Prepare warehouse for teff storage.
- Undertake proper packing and transportation.

Identified Technologies(Technoware) and Respective Sectors Responsibility

No.	Technologies	Actors
1	Irrigation and drainage infrastructures	BoA, Agriculture Research Center, Agricultural Mechanizations,
2	Improved Seed	BoA, Cooperatives, Research Centers, Retailer shops, Amhara Seed Enterprise,
3	Moldboard Plow and Harrow	BoA, Agricultural Mechanizations, Micor enterprises, TVET Bureau, TVET Colleges
4	Hand tractor/power tiller	BoA, Agricultural Mechanizations , Ambasel
5	Room(Adjusted Temperature)	TVET, BoA,
6	Tuber seed handling shelf	TVET
7	Row planter, Rotary weedier, Tractor, Ground harvester	BoA, Agricultural Mechanizations, TVET
8.	Soil test kit/pH	BoA, Agricultural Research Centers, Soil Laboratories
9	Packing and Transporting Materials	Private workshops, Factories, Farmers

THANK YOU VERY MUCH