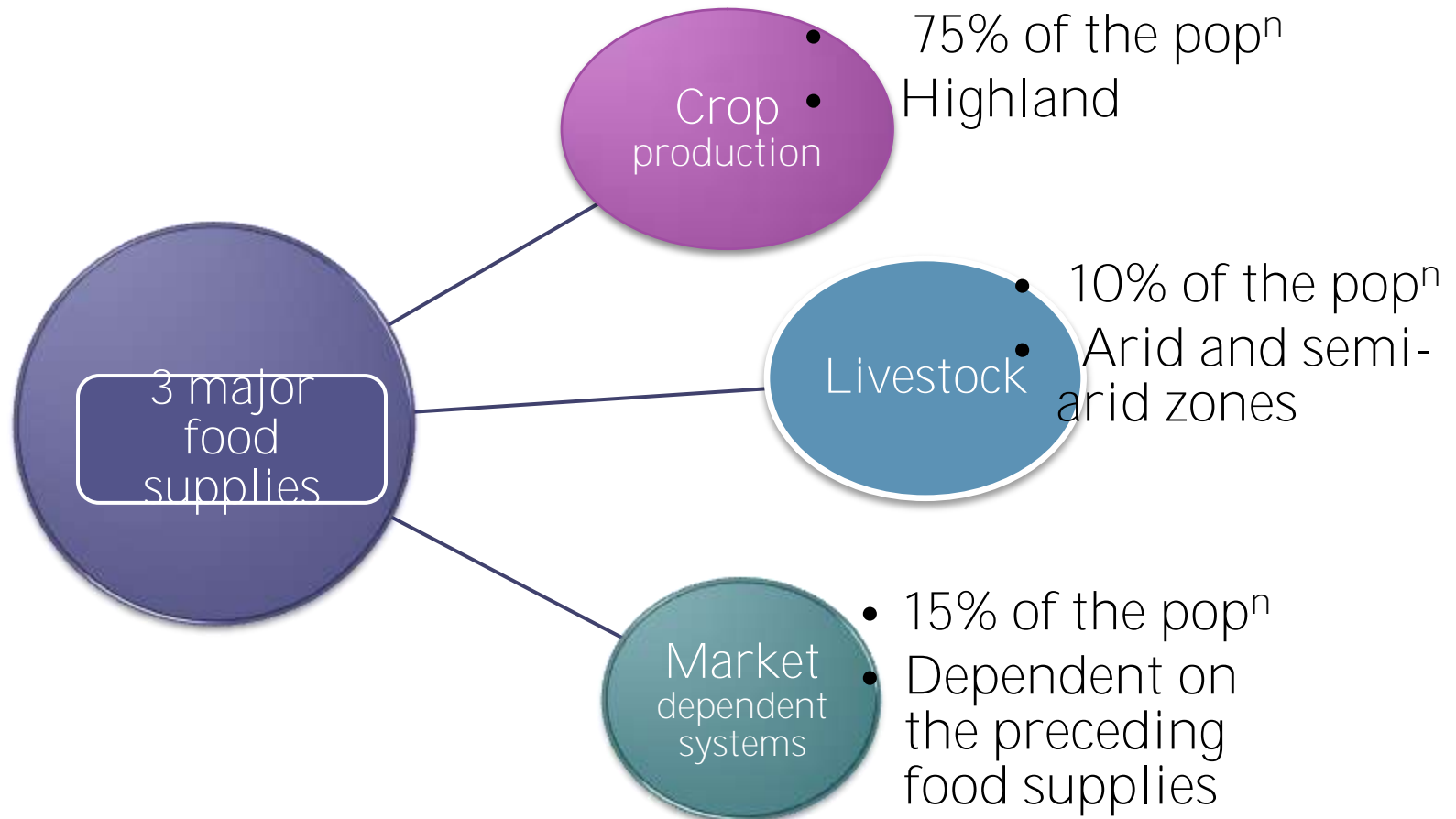


# Availability of Local Food Supply and Nutrient Deficiencies in Ethiopia



Kaleab Baye  
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# Major Food Supply Systems



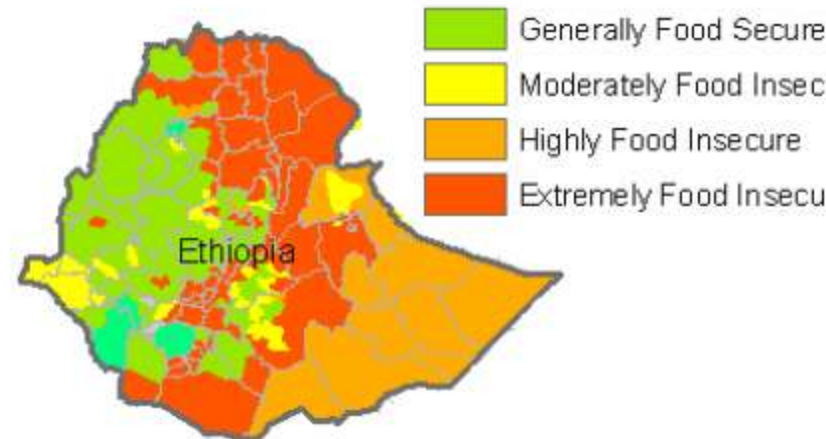
# Cropping



Diverse range  
of production

Failure of rain  
during  
cropping  
season

Shortage of  
food supplies



Data source: Disaster Prevention and Preparedness Agency (DPPA)  
Food Security Coordination Bureau (FSCB)

# Livestock

- System adapted to highly variable climatic conditions
- Mainly depends on animal for milk and meat
- ➔ is usually supplemented by grains during non-drought years



# Market Dependent Food Supply Systems



# Major Staple Foods

- variety of cereals, pulses, oilseeds, and coffee
- Grains are the most important field crops
- ➔ chief element in the diet of most Ethiopians

The principal grains are:

- 1. Teff**
- 2. Wheat**
- 3. barley**
- 4. Maize**
- 5. Sorghum**
- 6. Millet**

- **Pulses** are the second most important element in the national diet
- a principal protein source
- They are boiled, roasted, or included in a stew-like dish known as *wot*
- is sometimes a main dish and in other times a supplementary food



- **Enset**, known as false banana
- important food source in Ethiopia's southern and southwestern highlands
- cultivated principally by the Gurage, Sidama, and several other ethnic groups in the region
- the plant produces large quantities of starch in its underground rhizome and an above-ground stem that can reach a height of several meters
- Enset flour constitutes the staple food of the local people



- three main manifestations of malnutrition in our country are:
  - Protein-energy malnutrition
  - vitamin A deficiency
  - iodine deficiency

# Food Composition and Anti-nutritional Factors

- many foods were relatively rich in zinc and iron
  - However, many also contained high levels of phytic acid and tannins,  
➔ which impair bioavailability of zinc and iron
- phytate:zinc molar ratios were:
- >20 for non-fermented cereal foods
  - >15 for legumes
  - <12 for fermented cereals, starchy tubers and roots

- *tef enjera* was the best source of bioavailable iron of all foods analyzed
  - Foods prepared from *tef*, *enset* and kale are rich sources of calcium
  - consumption of diets based on cereals and legumes but poor in animal products can lead to deficiencies of zinc and iron
  - However, since fermentation can decrease the phytate content by a factor of 3–4
- ➔ the problem of zinc deficiency, which is particularly prevalent in Ethiopia can be prevented by eating fermented foods

# Nutrient Content of the Staple Foods

Composition in Terms of 100g Edible Portion

Food Source	Moisture (%)	Protein (g)	Food energy(calories)	Iron-mg
Teff enjera(red)	60.20	3.40	155.90	14.70
Teff ” ”(white)	63.80	3.00	145.00	7.00
Wheat ”(blck)	63.20	4.90	147.70	2.20
Wheat ” (wht)	63.40	3.10	145.60	4.40
Corn bread	45.20	4.10	223.40	2.00
Barley enjera (blck)	68.30	3.40(w2.60)	124.90	3.60(w.2.10)
Barley bread	49.50	4.40	202.40	3.50
Ensete (Kocho)	46.70	0.60	211.10	3.70
Ensete (bulla porridge)	81.00	0.20	80.30	2.60

# Focusing on *Ensete*

Drought resistant

is therefore a reliable crop during seasonal rainfall shortages

➔ The tree against hunger

-Valuable shade for growing other crops

-Helps to prevent soil degradation



# Constraints

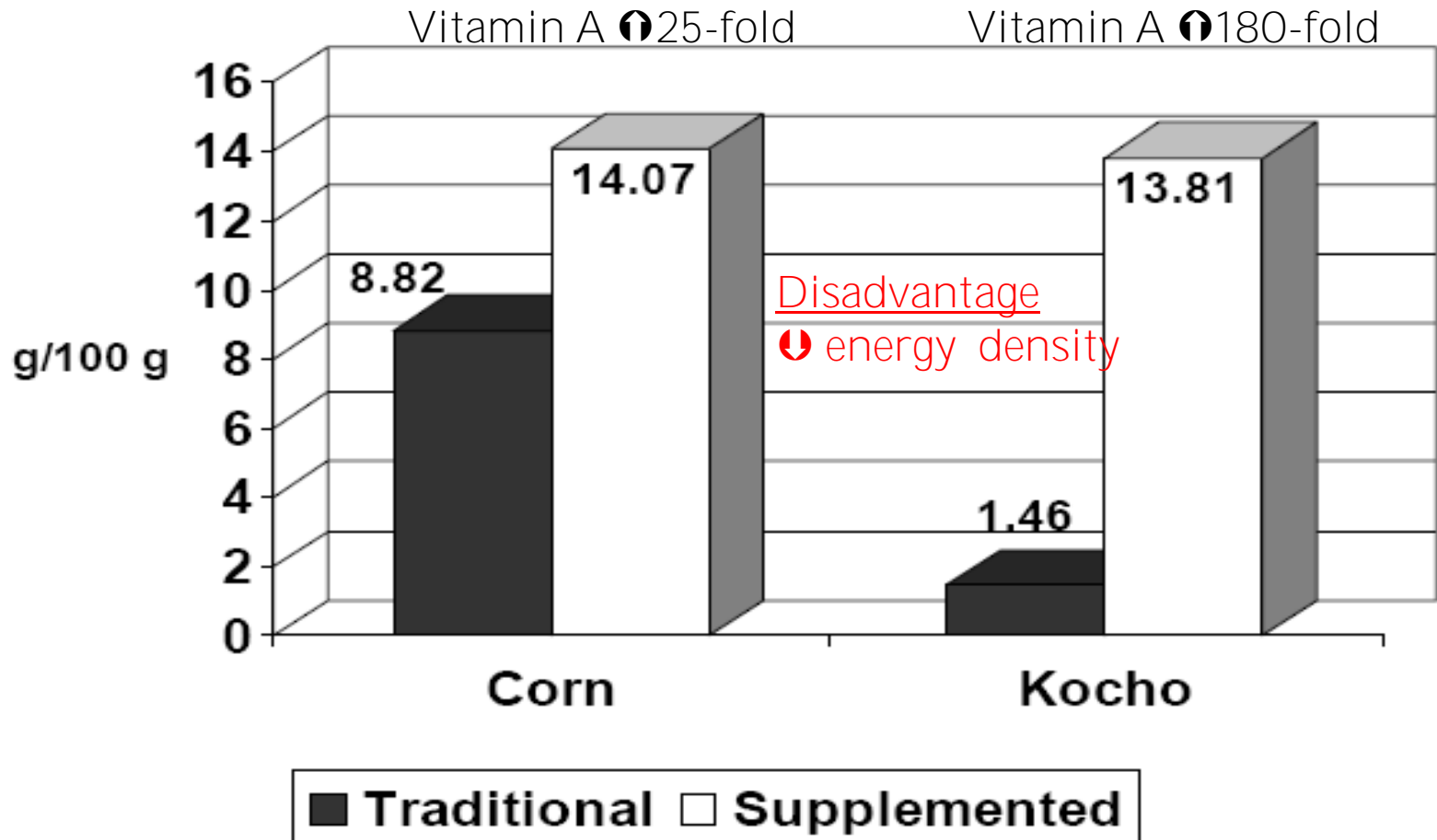
- during the food shortage-high *Ensete* consumption period of February to May
  - ➔ Severe to moderate protein deficiency is observed
  - ➔ due to the very low protein content of *Ensete* and the root crops
  - ★ An estimated 10 million people in SNNPR consume Ensete as a staple food



# Some Trials in the Past

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# The Way Forward

- More research should be done in investigating ways of increasing the protein content of *Ensete*
- The feasibility of blending *ensete* with other good protein sources (e.g. soy) to increase its protein content needs empirical investigation



A group of approximately 20-25 people, including men, women, and children, are sitting on the ground in a circle under the shade of a massive, ancient-looking tree. The tree has a thick, gnarled trunk and dense green foliage. The background shows a hilly, rural landscape with some green vegetation and a clear sky. The ground is dry and grassy.

Thank You!!!