

Our plan for understanding dairy farming in Whatcom county involves asking questions and formulating an analysis at four scales: the cow, the farm, the farming region, and the national or world economy. In order to do this, we need to ask questions of biology, ecology, economics, and culture at each of these scales. This guide, which we will also already have gone over in class on Thursday, May 8, is a *start* toward a systematic analysis of how cows fit into farms, how farms fit into a region, and how a region fits into a national economy. Please print this out and bring it with you on the field trip.

**Farm scale:**

- Basic questions about farm operation
- How many cows?
- How much land?
- Pastured? For what part of the year?
- How fed when not pastured?
- What else done with the land?

**Cow scale:**

Biological features:

1. Life cycle and growth

- Growth
- First birth
- Insemination--artificial or bull
- Birth interval
- Lactation time
- Age at senescence

2. Lactation

- Daily milking schedule
- How much milk per day?
- How many days per lactation?
- Interruptions?
- Decline with age?
- Hormones to stimulate production?

3. Feeding

- How fed--pasture, locally grown fodder, commercial feed, what?
- How much pasture required per cow? Seasonal difference?
- How much feed?

4. Elimination

How much manure per cow?

Where does it go?

5. Source of meat

Age at senescence and slaughter

Price?

Amount of meat produced?

6. Disease

What diseases?

How treated?

**Farm scale again:**

Economics, revenue side:

How much milk sold?

In what form is the milk sold?

Where does the milk go? Who buys it and where does it end up?

Price of milk?

Income from milk?

Economics, cost side:

Feed

Labor

Bull services or AI services

Vet and disease prevention

Disposal of manure

Taxes

Rents

Equipment and machinery

Ecological and sustainability concerns:

Soil quality

Pollution from manure

Water supply and quality

Aquatic life  
Wildlife concerns  
Ecological buffers  
Monetary costs of paying attention to environmental concerns?

Responding to changes in market and consumer preferences?

What would be the costs, benefits of different business models?

Conventional without pasture  
Conventional with some pasture  
Winter-dry  
Organic  
Producer-Handler?

**Farming region scale:**

How many farms? Trends over time in number of farms?  
Average # of cows? Trends over time?  
Average acreage? Trends over time?

How many farms  
Sell all to Darigold?  
Producer-Handlers?  
Sell to Organic Valley?  
Produce Cheese or other milk products?

Transport and supply networks

Where does feed come from?  
Where is equipment, etc. manufactured?  
Where are hired laborers from?

Other farms--Berries, what else?

How much water needed? How does this fit with the amount available?  
How much manure produced? What happens to most of it?  
Costs of transport?  
How do farms affect water supply? How does water supply affect farms?

How Darigold operates as a cooperative

Attempts to compete with or get around the virtual monopoly?

Pressure from non-farm uses?

Recreation  
Housing development  
Ecological set-asides

Marketing and public relations

How do Darigold, Dairy Farmers of Washington, Farm Friends market themselves and their products?

Culture of farming and food

Dutch heritage?

Local history?

Current American ideas about food

**National (and world?) scale:**

Larger, national scale Macro-economic trends:

Price of dairy products determined by larger market

Changing preferences for or against dairy foods as a major part of people's diets

Consumer preferences for fatter, organic, home bottled, cheaper, etc

Market for Darigold's milk powder?

The effect of the presence of the Canadian border.