FIBERSHED

Local Fiber, Local Dye, Local Labor

What would it cost to make yarn with your fiber, or with a blend of regional fibers? The corresponding worksheet, *Let's Make Yarn*, walks through the process of milling fiber to provide estimates around finished costs and weight.

Our hope is that these estimates assist you by providing you with a sense of the financial viability, as well as the blending and unique processing variations, associated with creating and selling a value-added product. Who might use this worksheet? Fiber producers who wish to make a value-added product; artisans who wish to create a custom yarn for their practice; brands and businesses seeking to build a value chain directly from fiber acquisition to finished yarn.

Please note: this worksheet is intended as educational guidance and support for considering fiber processing scenarios; requesting a formal estimate from a mill is the only way to determine exact cost structures.

If you do not yet have a mill in mind, this worksheet pairs well with Fibershed's National Mill Inventory, an open-source tool that includes a map of fiber processors across the United States, and contact information for those who accept fee-for-service orders. Learn more and explore mills at: www.nationalmillinventory.com

Section 1: Your Information

With each growing season, fiber harvest and quality varies. The questions in the first section provide a way to keep track of your fiber for record-keeping purposes. This information can be useful for monitoring trends or variations in production and products from year to year.

A note on percentage loss and estimating final fiber weight:

Fiber that is fresh from the animal or the field includes excess material such as vegetable matter, low-quality or second cuts, dirt, sweat, and in the case of sheep's wool, lanolin. These materials get removed through initial processing phases from skirting to washing or scouring and picking. This results in an average loss of an estimated 30-50% of the "raw" weight of the fiber. Online resources can provide more specific estimates for particular fiber breeds, and tracking year to year losses can be valuable feedback for the fiber producer. To estimate your finished fiber weight, simply subtract the percentage loss of your raw fiber from your total starting weight.

Section 2: Mill information

Each fiber processing mill has unique capabilities from machinery to staff skills to fiber blending experience. Review the mill's website or fiber processing information sheet to learn critical details such as breed and fiber types accepted, as well as minimum and maximum batch sizes.

A note on skirting:
This is the process of removing dirty, short, and course bits of fleece from animal fibers, and is an important step after shearing. Most mills charge for their services based on any and all fiber accepted, so time and processing is more efficient when well-skirted fleece is sent to the mill. Because skirting removes less desirable matter, the finished product quality is also improved.

Planning your yarn:
This is where creativity comes into play: are you designing this yarn for a particular end product or user? Textile knowledge, market research, and fiber quality are just a few considerations here. Many mills offer sample cards, which showcase examples of yarn sizes and structures, and offer a great way to see what the mill does best. Books and sources listed in the "additional resources" section also include valuable research and perspectives on best uses of different fiber breeds.

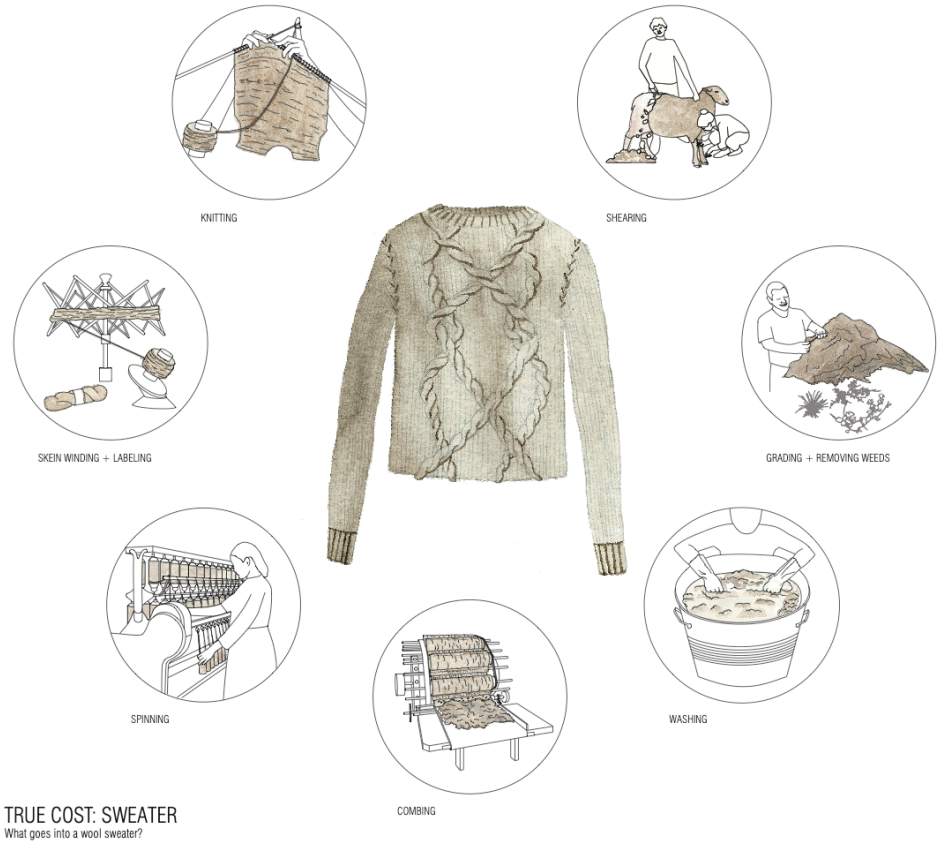
Section 3: Other Considerations
Recording these miscellaneous expenses provides a more accurate overall cost.

Section 4: Yarn Cost Estimates
Here's where you'll model the process and pricing for each yarn or roving you plan to make, tracking the course of fiber through the mill.
First, take a look at how the mill prices their services. Locate each fee on their website or pricing sheet to complete each grey box, and pull in your own data from section 1 for each white box. Multiplying the pricing rate by the fiber data will provide the total fee for each service. We have identified 4 common types of mills:

Type 1: Mills that charge a separate fee at each step of the process.
Type 2: Mills that charge a set fee for processing based on raw fiber weight (also called "incoming" weight)
Type 3: Mills that charge a set fee for processing based on the clean fiber weight (also called "finished" weight)
Type 4: Mills that charge a set base rate with separate fees based on specific yarn weight (e.g. lace, sport, worsted, bulky, etc.).

Section 5: Mill Processing Totals
This page provides space to pull together the total costs of each step of processing for a full picture from raw fiber to product.This worksheet can be a resource for understanding how different fiber volumes, mills, and pricing models would effect your product: you may wish to sketch out several options by making copies of the relevant page(s) of sections 4 and 5. For instance, some mills have set fees or price breaks based on volume — how would the costs change to process 50 lbs of fiber vs. 150 lbs? A more straightforward decision may be: do you want the mill to divide the yarn into skeins, and how does that effect the price per unit?

Section 6: Final Cost of Goods
What would creating this product cost per unit? Dividing the total costs by weight of each skein, cone, or ball of fiber provides a base cost of goods.



Additional Resources

The Knitters Book of Wool: The Ultimate Guide to Understanding, Using, and Loving this Most Fabulous Fiber – by Clara Parkes

The Fleece & Fiber Sourcebook: More Than 200 Fibers, from Animal to Spun Yarn – by Carol Ekarius and Deborah Robson

The Field Guide to Fleece: 100 Sheep Breeds & How to Use Their Fibers – by Carol Ekarius and Deborah Robson

Fibershed's Wool & Fine Fiber Book: Tactile Perspectives from Our Land – available online at www.fibershed.com/programs/textile-economy/wool-book/

Fibershed's National Mill Inventory summary report (2016) – available online at www.fibershed.com/programs/textile-economy/mill-inventory/

Let's Make Yarn! A Worksheet To Walk You Through Local Milling

Section 1--Your Information

In this section, questions provide a way to keep track of your fiber for record purposes. This information will also be referenced later in the sheet to help you determine milling costs.

Business name		Shearing date	
Type of animal(s)		Micron count	
Amount of raw fiber (in lb.)		Estimated finished weight (in lb.)	

Section 2--Mill Information

In this section, questions provide a way for you to determine your preferred mill's requirements for fiber processing. You can locate this information on the mill's website. Note: Mills vary in what type of fiber they accept, so be sure to check any requirements around specific fiber types accepted.

Mill name		Mill contact information	
Minimum and maximum staple length accepted?		What is the minimum batch size?	
What is their payment policy?		What is their current wait time?	
Can they process large orders?		Are there price breaks for large orders?	
What is the cost of having your fiber skirted at the mill?*			

**We highly recommend you fully skirt your fiber before sending it to the mill*

How many batches will be processed?		Number of desired plies	

Weight of desired yarn(s) e.g. 'sport' or 200 yds/4 oz. skein	

Do you have a sample yarn?

Yes ☐ No ☐

Does the mill offer yarn sample cards?

Yes ☐ No ☐

Section 3--Blending and Other Considerations

In this section, record any additional expenses that may impact the overall cost of having your fiber processed. Note: The mill you are working with may have a in-person drop off option or shipping discounts for large orders, contact them directly for more information.

Shipping Costs		Labeling Costs (hard costs for materials and printing)	

Additional Costs?	

Will you be blending your fiber?	

Raw Fiber Weight	Fiber 1	Fiber 2	Fiber 3	Fiber 4
Batch 1				
Batch 2				
Batch 3				
Batch 4				

Blending Notes e.g. heathered, variegated, uniform, marled...	

Section 4-Yarn Cost Estimate

In this section, the milling process is broken down into four common types of pricing structure for fiber mills. Select the mill type that most closely resembles your chosen mill and fill in shaded boxes with information from the pricing information on the mill's website. Then, fill in the remaining information to complete calculations. Note: If creating multiple types of yarns, check to see if you will need to fill out multiple estimates (one estimate for each type of yarn) as some mills charge differently depending on yarn weight or number of plies.

Mill Type #1	Charges for Mill Type 1 consist of individual fees for each step of the process from a set-up fee through washing.		
Amount of raw fiber in lb.			lb.
Price per pound		$	/lb.
Total raw fiber cost		$	
Set-up fee ($/lot)		$	/lot
Number of lots			
Total set-up fee		$	
Washing rate ($/lb.)		$	/lb.
Amount of raw fiber in lb.			lb.
Total washing fee		$	
Carding rate ($/lb.)		$	/lb.
Amount of finished fiber in lb.			lb.
Total carding fee		$	
Spinning rate ($/lb. finished)		$	/lb.
Amount of finished fiber in lb.			/lb.
Total spinning fee		$	
Skeining rate ($/lb. finished) <2 ounces		$	/lb.
Skeining rate ($/lb. finished) 2 - 4 ounces		$	/lb.
Amount of finished fiber in lb.			/lb.
Total skeining fee		$	
Coning rate ($/lb. finished)		$	/lb.

Amount of finished fiber in lb.		/lb.
Total coning fee		$
Washing rate ($/lb. finished)		$ /lb.
Amount of finished fiber in lb.		/lb.
Total washing fee		$

Mill Type #2	Charges for Mill Type 2 consist of a spinning rate based on raw fiber weight and includes all steps before spinning like set-up, washing, carding, coning. Skeining and washing are extra.		
Amount of raw fiber in lb.	◦ ◦		lb.
Price per pound	◦ ◦	$	/lb.
Total raw fiber cost	◦ ◦	$	
Spinning rate ($/lb. raw) *Includes set-up, washing, carding, coning*	◦ ◦	$	/lb.
Amount of raw fiber in lb.	◦ ◦		/lb.
Total spinning fee	◦ ◦	$	
Skeining rate ($/lb. raw) < 2 ounces	◦ ◦	$	/lb.
Skeining rate ($/lb. raw) 2 - 4 ounces	◦ ◦	$	/lb.
Amount of raw fiber in lb.	◦ ◦		/lb.
Total skeining fee	◦ ◦	$	
Washing rate ($/lb. raw)	◦ ◦	$	/lb.
Amount of raw fiber in lb.	◦ ◦		/lb.
Total washing fee	◦ ◦	$	

Mill Type #3	Charges for Mill Type 3 consist of a spinning rate based on finished weight and includes every step before spinning like set-up, washing, carding. Skeining and washing are extra.		
Amount of raw fiber in lb.	◦ ◦		lb.
Price per pound	◦ ◦	$	/lb.
Total raw fiber cost	◦ ◦	$	
Spinning rate ($/lb. finished) *Includes set-up, washing, carding*	◦ ◦	$	/lb.
Amount of finished fiber in lb.	◦ ◦		/lb.
Total spinning fee	◦ ◦	$	
Skeining rate ($/lb. finished) <2 ounces	◦ ◦	$	/lb.
Skeining rate ($/lb. finished) 2 - 4 ounces	◦ ◦	$	/lb.
Amount of finished fiber in lb.	◦ ◦		/lb.
Total skeining fee	◦ ◦	$	
Washing rate ($/lb. finished)	◦ ◦	$	/lb.
Amount of finished fiber in lb.	◦ ◦		/lb.
Total washing fee	◦ ◦	$	

Mill Type #4	Charges for Mill Type 4 consist of a base spinning rate fee calculated via finished weight along with a fee for the specific yarn weight. It includes every step before spinning like set-up, washing, carding. Skeining and washing are extra.		
Amount of raw fiber in lb.	◦ ◦		lb.
Price per pound	◦ ◦	$	/lb.
Total raw fiber cost	◦ ◦	$	
Base spinning rate ($/lb. finished) *Includes set-up, washing, carding*	◦ ◦	$	/lb.
Add specific yarn weight ($/lb. finished)	◦ ◦	$	/lb.
Amount of finished fiber in lb.	◦ ◦		/lb.
Total spinning fee	◦ ◦	$	
Skeining rate ($/lb. finished) <2 ounces	◦ ◦	$	/lb.
Skeining rate ($/lb. finished) 2 - 4 ounces	◦ ◦	$	/lb.
Amount of finished fiber in lb.	◦ ◦		/lb.
Total skeining fee	◦ ◦	$	
Washing rate ($/lb. finished)	◦ ◦	$	/lb.
Amount of finished fiber in lb.	◦ ◦		/lb.
Total washing fee	◦ ◦	$	

Section 5-- Mill Processing Totals

In this section, transfer all previously calculated total cost estimates from section 4 and fill in the corresponding row with the correct value. Then enter total shipping and labeling estimates from section 3 to determine the total milling estimate with shipping and labeling costs.

Set-up total ($)	$
Washing total ($)	$
Carding total ($)	$
Spinning total ($)	$
Skeining total ($)	$
Coning total ($)	$
Washing total ($)	$
Shipping total ($)	$
Labeling total ($)	$
Total milling estimate with shipping and labels ($)	$

Transfer previously calculated raw fiber total from milling estimate in section 4 and add to the total milling estimate with shipping and labeling, calculated above, to determine the total processing estimate.

Raw fiber total ($)	$
Milling total w/ shipping, labels ($)	$
Total processing estimate ($)	$

Section 6--Final Cost of Goods

In this section, you will determine the final cost of goods. Keep in mind, these final estimates do not include any margins for retail, wholesale etc. Additional costs due to margins will need to be added on top of these estimates. The estimated finished weight can be found in section 1.

Estimated finished weight (in lb.) ◦		lb.
Cost per finished pound ($/lb.) ◦ *(Total processing estimate ÷ finished weight)*	$	/lb.
Cost per 2 ounce skein ($/skein) ◦ *(Cost per finished pound ÷ 8)*	$	/skein
Cost per 4 ounce skein ($/skein) ◦ *(Cost per finished pound ÷ 4)*	$	/skein