

## Fine long-fibre hemp (cards and skims), shives and wool from decentralised processing: the business model

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- Slide 4: Decentralised production on farms
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## Long fibre to card sliver

Fedora, Felina, Futura,  
«Schöne vom Albis», ...  
45 kg / ha as winter hemp in August



Harvest of winter hemp  
in March as parallel,  
whole stalks

Parallel mower Hylar, € 200'000



Retting already took place  
over the winter on the  
stem, dry in the parallel  
swath till less 15% humidity.

Parallel turner Cretes, € 50'000

Cretes parallel baler, € 50'000



Swing decoration  
tower € 45'000



Fibre laundry/dyeing  
with periphery € 30'000



Carding line for spinnable  
Cards € 50'000

## Short fibre to insulation material

Fedora, Felina, Futura,  
Schöne vom Albis, ...  
30 kg / ha as fruit hemp in April



Harvesting the nuts in  
August, straw cut to  
20-40 cm and laid  
in the swath for roasting  
during 2-3 weeks.

See next slide for  
combined harvest!

Combined harvester  
conversion € 100'000

Field roasting like hay with the  
available machines



Hammermill and Turbo Step Cleaner  
€ 60'000



Fleece machine +  
fire insulation  
ca. € 50'000

Mat cutting and  
packaging  
€ 20'000

Nuts for muesli,  
oil and flour.  
Cleaned shives.

Nut drying  
€ 50'000

Nut peeling mach..  
€ 50'000

Oil press  
€ 25'000

Nut mill for  
flours  
€ 25'000



Sieve drum: shives cleaning,  
sorting & filling € 25'000

Seed

Harvest

Retting

Preparation  
to  
washed  
Card sliver  
to  
Insulation mats  
to shives  
to nuts, oil,  
and flour

## Long Fibres also from Summer Hemp thanks to combined harvest

Seed

Finola, Erlyna with 30-35 kg/ha sown in April  
**Long fibre only hemp of low height lower 2m!**  
Undersowing with clover sown 1-2 days after hemp sowing

1st pass  
Nut Harvest



Harvesting in August: in the first pass  
the nuts are harvested with the mower set high.  
Cut directly under the fruit.  
Stalks remain standing.

Ideally with an early generation mechanical combine harvester.  
Resulting straw from this cut is returned and left to the field.

2nd pass  
Straw  
Harvest



In the second pass, the green straw is laid in  
parallel in the swath with a parallel mower,  
where it goes through the field retting for 2-3  
weeks.

Parallel-Mower Hylar, € 200'000

Retting



Field retting in a parallel laid swath.  
Turning with a parallel tedder.  
Baling with a parallel baler.

Parallel tedder Cretes, ca. € 50'000

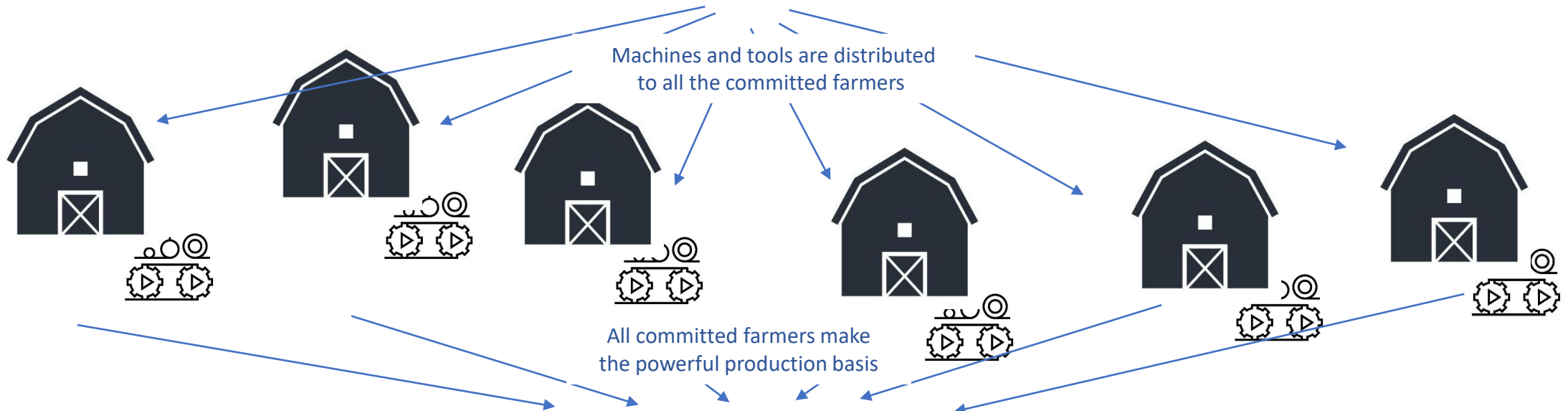
Parallel baler Cretes, ca. € 50'000

Fibre  
Preparation

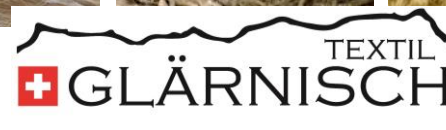
With long fibre production line for breaking, scraping,  
combing and brushing of the long fibre into flat scrims  
and round card slivers.



Investors: Prefinance machines and tools



**Glärnisch Local:** Partner of the farmers on site for coaching, marketing, services and support

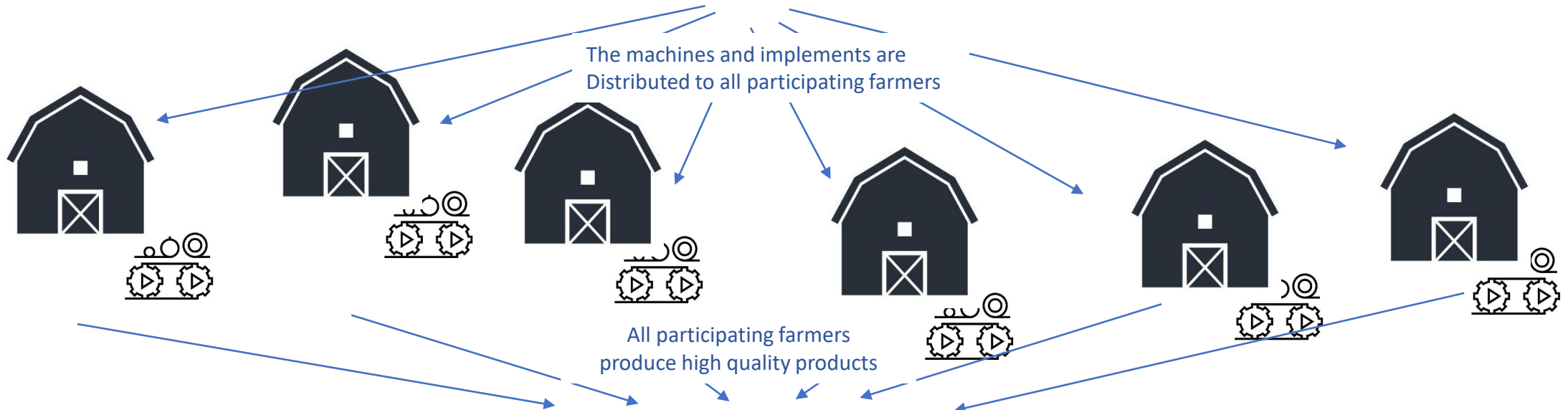


Regional construction sites > house building  
Regional spinning mills > weaving mills > textile fabrication





**Investors:** Pre-financing of the machines and devices



**Glärnisch local:** partner of the farmers on site for advice, Marketing, Service, Support



Regional construction sites > Building construction  
Regional Spinning Mills > Weaving Mills > Textile Production

## Offer to investors:

**Pre-financing of** the agricultural equipment for processing fine long fibres from industrial hemp as a scrim for the reinforcement of composites and for the use to produce blue jeans

**Return on capital** expected minimums

**Break Even**

**Return** after full investment period (42 months)

**Averaged annual interest rate** over the investment period

Immediate  
Provision  
in July 2022

**CHF 395'000**

in Dec. 2023

CHF 89'000

in Dec. 2024

CHF 245'000

in Dec. 2025

CHF 356'000

after approx. 18 months

75%

21%

## Object of the transaction and its financing

A developer we know has developed a new Euro pallet weighing only 9 kg that is reinforced with our hemp fibre. The hemp fibres needed for this can be produced by Swiss farmers from Swiss hemp.

After a successful prototype, this developer has an order to provide a further 100 pallets by the end of August 2022 for continued testing in practice by Swiss logistics companies and retailers. In 2023, the company plans to produce 75 tonnes of fibre scrims with a specific weight of 100g/m<sup>2</sup>, in 2024 this will be 200 tonnes and in 2025 300 tonnes of fibre scrims.

A company known to us has made preparations to operate a hemp jeans production. For this and for our own purposes, 25 tonnes of fine, washed hemp cards are needed.

We as the Glärnisch Textile Cooperative have developed a low-tech process for breaking, scraping, combing and brushing the hemp straw into 60cm wide hemp clusters and into hemp cards. Two such plants are to be operated on the farms of selected Swiss farmers, as well as the peripheral, complementary equipment.

The object of this transaction is the pre-financing of this equipment in return for a share of 11% in the revenue that will be generated from the semi-finished products produced on the basis of existing orders.

## Functional principle of the fibre preparation plant

The straw of both summer and winter hemp is harvested and roasted in parallel stalks from the beginning and then broken, scraped, combed and brushed into fibres in the same parallel manner. This avoids difficulties in fibre preparation that usually arise due to harvesting by combine harvesters.

On the low-tech plant to be built for this purpose, the parallel stalks are inserted into a 60 cm wide sheet metal channel, laid out there thinly side by side by means of specially trimmed rollers, broken and still parallel and thinly side by side conveyed in doses over further rollers and at the same time turned, broken, cleaned by means of scraping off the shives, combed at further rollers with appropriately reinforced belts, brushed and finally rolled up into a 60cm wide scrim.

The low-tech production line represents a sequence of processing techniques already tried and tested in earlier times, is thus neither noisy nor dangerous and only requires as much electricity as is usually available on a farm.

Instead of a large central factory, the farms thus function as a broad-based, decentralised production base for providing the required quantities of the fibre hemp under the guidance/supervision of Glärnisch corporations.



### Long Fibre Production from Summer and from Winter Hemp

See the farming principles in the relative slides, where it is shown that the summer hemp gets harvested in two turns: first the fruit and after that in the 2nd turn the stems with a parallel mower.

Project calculation based on the demand of a palette producer for 3 mio. m2 flat hemp arming scrim of a weight of 100g/m2 as of 2025, as well as a jeans production with the demand of fine cards sliver, both at a price of around CHF 7.50/kg

			2023		2024		2025				
			To	kg surface	To	kg surface	To	kg surface			
Demedanded amount of fine flat arming hemp scrim			75	75'000	200	200'000	300	300'000			
Demedanded amount of fine hemp sliver for spinning			25	25'000	75	75'000	100	100'000			
Total amount of demand of fine long hemp fibre			100	100'000	275	275'000	400	400'000			
amount of straw needed (amount of fibre x 2.5)			leverage	0.4	250	250'000	688	687'500	1'000	1'000'000	
required surface to cultivate winter hemp (ha)			amount straw/ha	2500	54	150	215				
additionally required surface cultivated for summer hemp (ha)			amount straw/ha	3000	39	104	155				
required amount of seed for winter hemp (45kg/ha)			kg/ha	45	2'430	6'750	9675				
required amount of seed for summer hemp (35kg/ha)			kg/ha	35	1'365	3'640	5425				
amount of fibre produced from winter hemp			54	54'000	54%	150	150'000	55%	215	215'000	54%
amount of fibre produced from summer hemp			46.8	46'800	46%	125	124'800	45%	186	186'000	46%
total amount of fibres produced			100.8	100'800		275	274'800		401	401'000	
amount of shives produced from winter hemp			81	81'000		225	225'000		323	322'500	
amount of shives produced from summer hemp			70.2	70'200		187	187'200		279	279'000	
total amount of shives produced			151.2	151'200		412	412'200		602	601'500	
<b>Expenditure, costs (exkl. shives and nuts)</b>				CHF		CHF		CHF			
seed for the winter hemp			CHF/kg	20	48'600	135'000	193'500				
participation in the seed for the summer hemp			CHF/kg	10	13'650	36'400	54'250				
harrowing, spreading farmyard manure, sowing, undersowing (winter)			CHF/ha	300	16'200	45'000	64'500				
harrowing, spreading farmyard manure, sowing, undersowing (summer partly)			CHF/ha	150	5'850	15'600	23'250				
wages for straw mowing of winter hemp			CHF/ha	120	6'480	18'000	25'800				
wages for separate straw mowing of summer hemp			CHF/ha	120	4'680	12'480	18'600				
retting (turning) and press round bales for winter hemp			CHF/ha	320	17'280	48'000	68'800				
retting (turning) and press round bales for summer hemp			CHF/ha	320	12'480	33'280	49'600				
transport and hire of the parallel turner and parallel baler			flat		7'500	15'000	30'000				
wages for fibre preparation from the straw of the winter hemp			CHF/ton straw	400	54'000	150'000	215'000				
wages for fibre preparation from the straw of the summer hemp			CHF/ton straw	400	46'800	124'800	186'000				
<b>Total expenditure for all straw all year</b>					233'520	633'560	929'300				
<b>Yield calculation from straw processing for farmers</b>											
sales revenue from fibre scrim and fibre plait/round sliver			CHF/kg fibres	7.5	750'000	2'062'500	3'000'000				
sales revenue from shives			CHF/kg shives	0.4	60'000	165'000	240'000				
Total sales revenues					810'000	2'227'500	3'240'000				
Franchise fee for the provision of the equipment and accompaniment			% of revenues	33	267'300	735'075	1'069'200				
<b>Yield from fibre processing remaining with farmers</b>					542'700	1'492'425	2'170'800				
Total net profit of farmers (income minus expenses)					309'180	858'865	1'241'500				
Share of winter hemp in net profit					165'632	468'813	665'642				
Share of summer hemp in net profit					143'548	390'052	575'858				
Net profit of farmers per hectare with winter hemp					3'067	3'125	3'096				
Net profit share of farmers per hectare from summer hemp straw					3'681	3'751	3'715				



## The profitable business from a Swiss farmers' point of view

Net profits are achieved from around CHF 3'100/ha with winter hemp and of around CHF 3,700/ha additional to the profit from the fruit in summer.

Please mind that this table and price indications refer to Swiss conditions and that depending on the region substantial differences will be the case.

## The business from the investor's point of view

Pre-Financing of Agricultural Equipment		2022	2023	2024	2025	Total over
		CHF	CHF	CHF	CHF	3.5 years
<b>Expenditures</b>						
1 parallel mower	acquisition of Hylar Belgium incl. delivery	200'000				
2 Long fibres processing lines (break, shive, comb, brush)	construction and installation	90'000				
1 reused autoclave for fibre washing	acquisition and installation	30'000				
1 carder to produce sliver for spinning	acquisition and installation	50'000				
1 drum sieve to sort and clean the shives	construction and installation	25'000				
<b>Total Investment</b>		<b>395'000</b>	<b>0</b>	<b>0</b>	<b>0</b>	
<b>Yield</b>						
11% of the income / yield from products sales from the farms	Farm yields in folder "farmers", line 43		89'100	245'025	356'400	
<b>Total Yield p.a.</b>		<b>0</b>	<b>89'100</b>	<b>245'025</b>	<b>356'400</b>	
<b>Profit (loss) p.a.</b>	<b>assured minimum due to confirmed sales</b>	<b>-395'000</b>	<b>89'100</b>	<b>245'025</b>	<b>356'400</b>	<b>690'525</b>
Break Even after circa	18 months					
total interest July2022 - Dec 2025 in percent of investment	75					
average annual interes in percent of investment	21					

Please mind that this table and price indications refer to Swiss conditions and that depending on the region substantial differences will be the case.

## The business from the perspective of the Glärnisch companies

Project Lead, Ackquisition, QA, Service, Support		2022	2023	2024	2025	Total über
		CHF	CHF	CHF	CHF	3.5 Jahre
Personnel	Project lead, ackquisition, QA,service, support	35'000	66'000	66'000	66'000	
<b>Total Expenditure</b>		<b>35'000</b>	<b>66'000</b>	<b>66'000</b>	<b>66'000</b>	
<b>Yield</b>						
22% of the income / yield from products sales from the farms	Farm yields in folder "farmers", line 43		178'200	490'050	712'800	
<b>Total Yield p.a.</b>		<b>0</b>	<b>178'200</b>	<b>490'050</b>	<b>712'800</b>	
<b>Profit (loss) p.a.</b>	<b>assured minimum due to confirmed sales</b>	<b>-35'000</b>	<b>112'200</b>	<b>424'050</b>	<b>646'800</b>	<b>1'183'050</b>

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