



'The practicalities of the biomass supply chain

Phil Benn,
Treestation



TREE STATION

Making Wood Work

Practicalities of Biomass supply chain

Phil Benn, Greater Manchester TreeStation

Contents

Overview of Greater Manchester TreeStation

Biomass supply chain: challenges and solutions

- **Feedstock**
- **Process**
- **Final products & delivery**
- **Contextual factors**

Recap/summary

The TreeStation - an overview

- The tree station concept
- Our mission: Making wood work
- What is different about the TreeStation
- What we do





**TREE
STATION**
Making Wood Work

TreeStation - a social enterprise in arboriculture, woodland management, biomass fuels and timber



Biomass woodchip

Consistent supply of high quality, local, competitively priced and neatly delivered woodchip for your biomass boiler



Firewood & kindling

Genuinely sustainable, affordable and local seasoned hardwood, delivered in Greater Manchester loose or netted



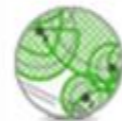
Timber products

Varied stock of locally and sustainably sourced planks and bespoke timber items for joinery, crafts and art projects



Treework

Our team of experienced arboriculturists delivers high quality domestic and commercial services



Consultancy

Our highly qualified surveyors offer a range of tailored services to domestic and commercial customers



Landscaping

We offer soft and hard landscaping solutions, delivered by our competent, diligent and friendly team



Woodland management & Forestry

We provide a professional and sensitive service to private, corporate and institutional customers



Services to Local Authorities and contractors

We can subcontract all our services including arisings disposal, contract chipping, and haulage

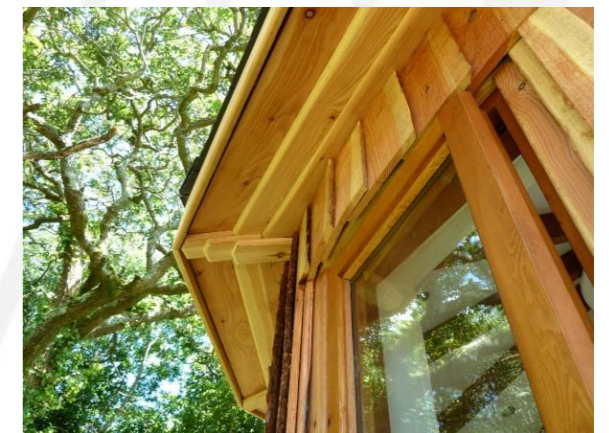


Landscaping & playground woodchip

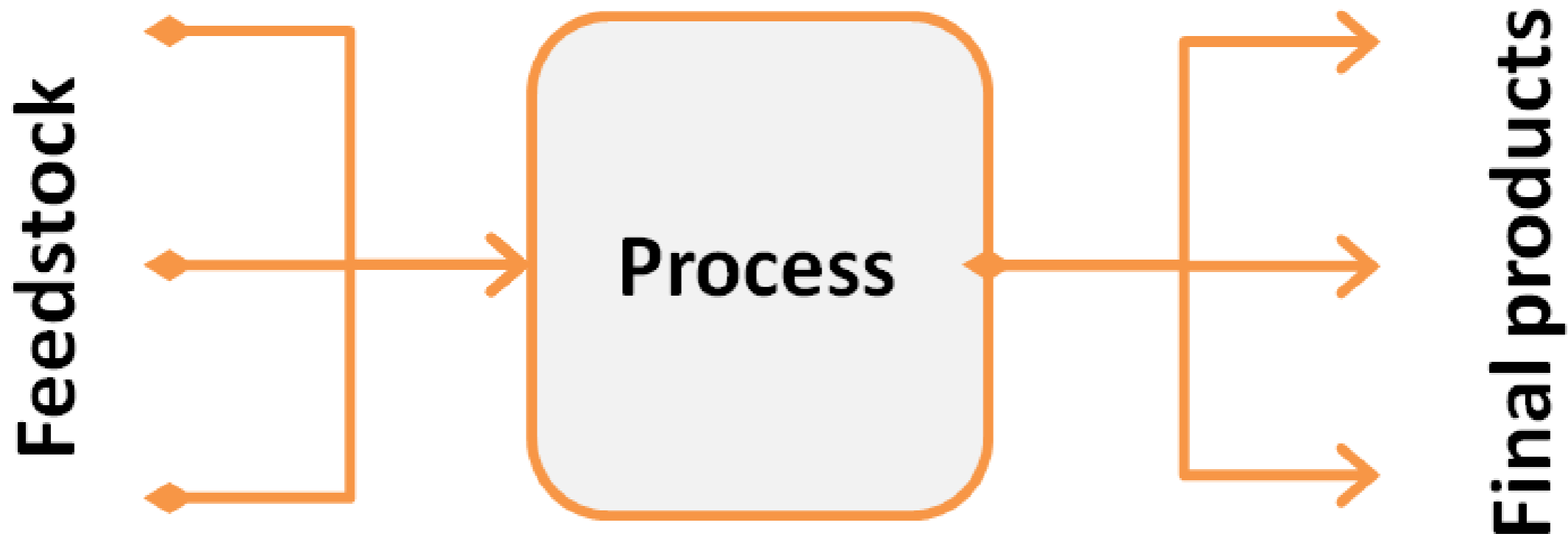
Local and sustainable landscaping woodchip for your garden, allotment or playground surface

How our ethics inform our supply chain

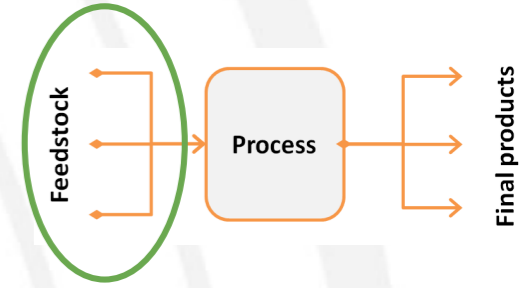
- Minimising long haulage distance of feedstock
- Focus on local market for all products
- Where appropriate favour long term uses over fuels
- Need to strike balance between ethics, security of supply, scale & machinery, economics.



TreeStation's overall supply chain

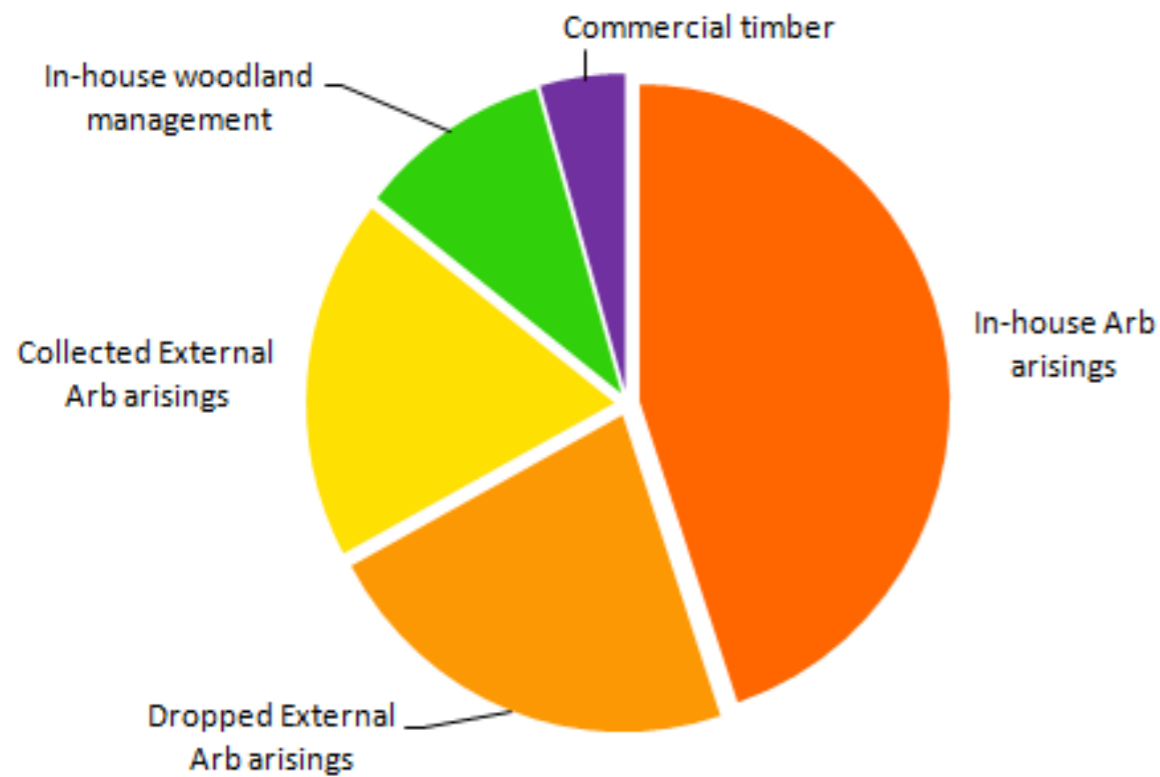


Feedstock Categories

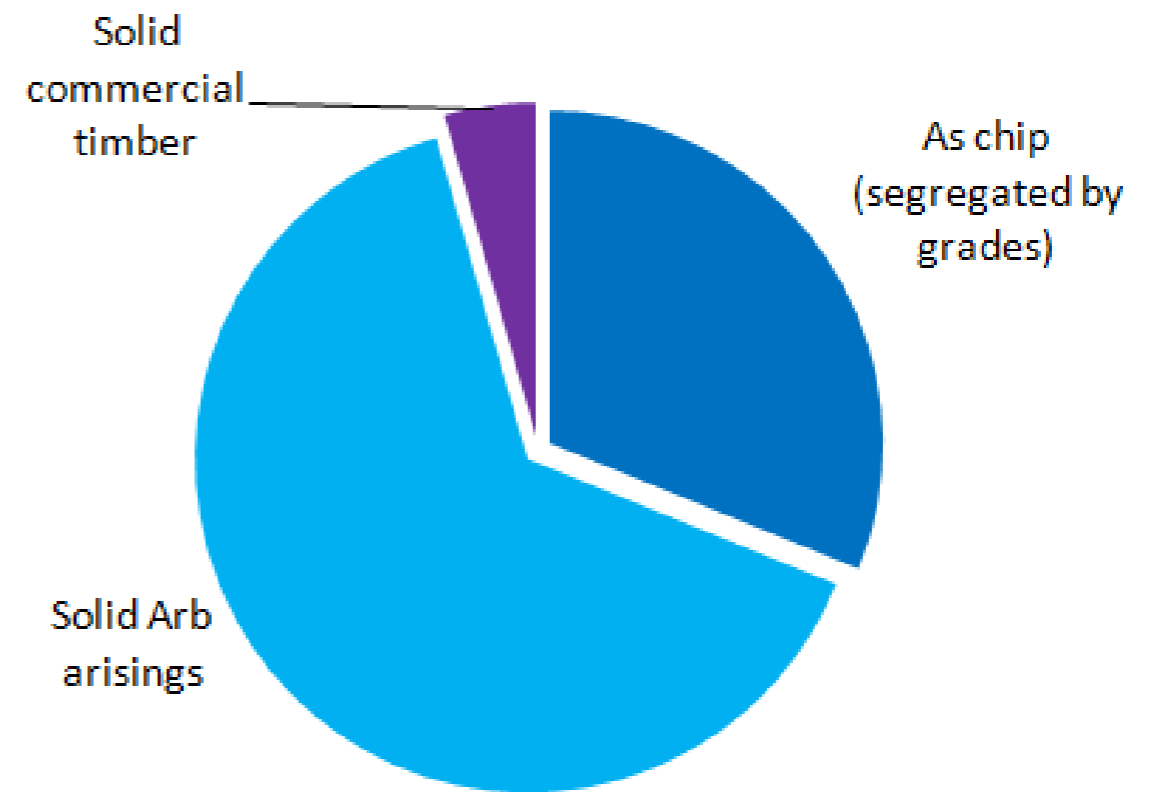


~ 1,000 T feedstock received (2014-15)

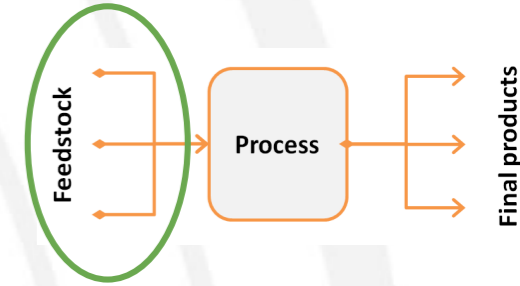
Feedstock sources
(Oct14-Sept15)



Form received
(Oct14-Sept15)



Feedstock – Arboriculture Arisings

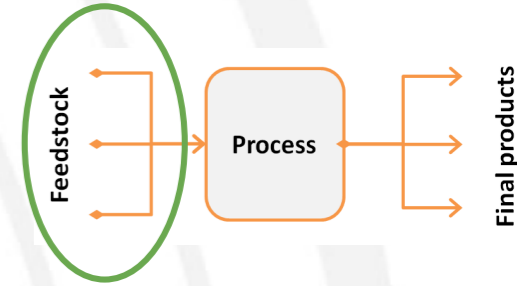


Challenges

- non-standard trees
 - difficult to stack
- oversized or short arisings
 - storage, handling, processing
 - quality and safety
- varied sources
 - occasional contamination
 - small lots
 - irregular/fluctuating supply



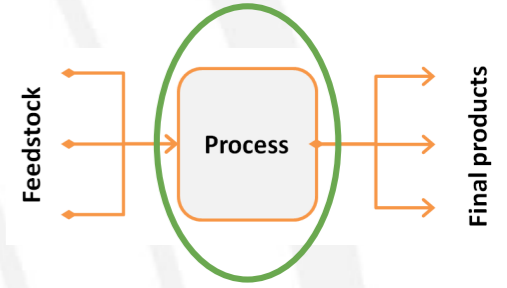
Feedstock – Arboricultural Arisings



Solutions

- encourage contractors to bring longer pieces of arb arisings
 - maximised transport efficiency
 - enhanced quality/grade/use of end product
 - improved ease, safety and efficiency of stacking and processing
- appropriate machinery
- use HGV or hire us for removal
- need to be flexible/reactive
- robust traceability systems

Biomass Processing Overview



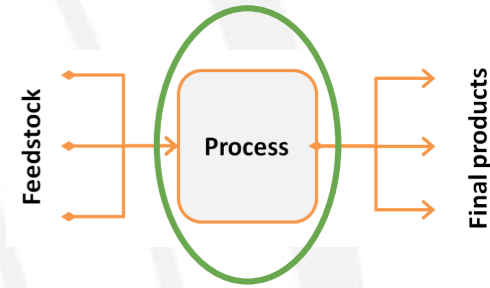
Firewood



Woodchip



Processing – Arboriculture Arisings



Challenges

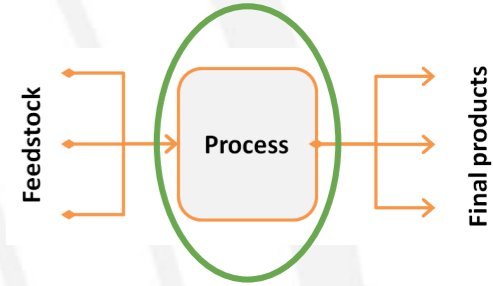
- oversized pieces
- handling short wood
- quality of chip from short wood

Solutions

- cone splitting
- arisings in cages where possible
- B grade chip



Processing – Urban Environment



Challenges

- space scarcity
- financial premium
 - small yard
- noise and dust
 - planning challenges
- security of equipment

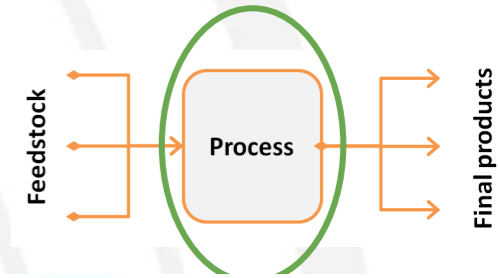


Solutions

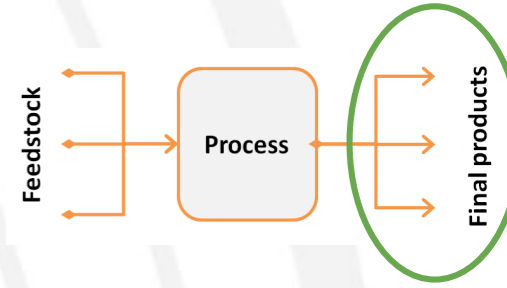
- minimised + efficient storage
- vertical use
 - book ends & stackable cages
- choice of site
- security systems



Processing – Organisation



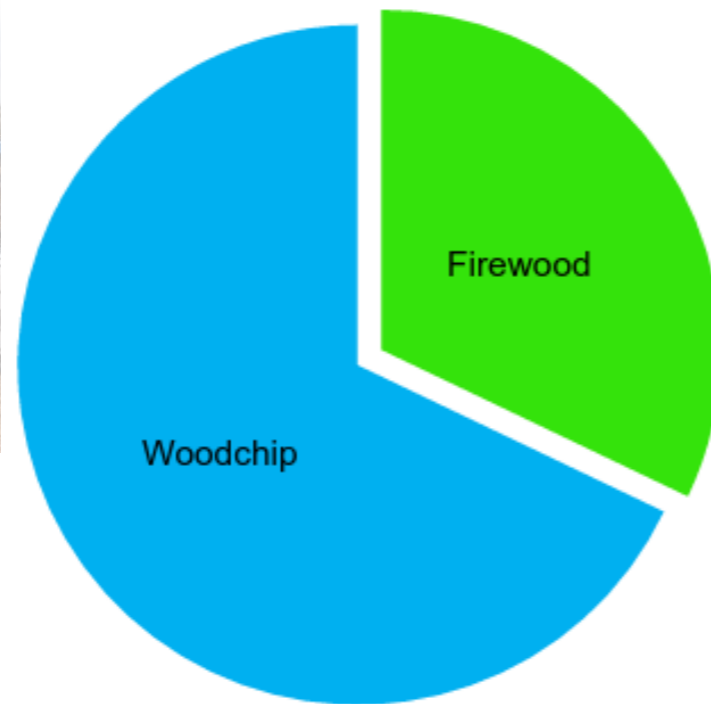
Final product & delivery



Woodfuel sales (by mass, Nov14-Jul15)



Woodchip
(various grades)

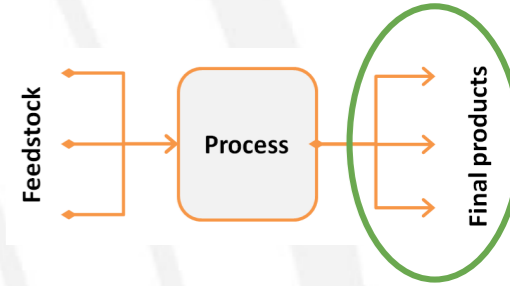


Firewood
(loose or bagged)

Sawn timber



Final product & delivery – Chip



Challenges

- competition from large nationals
- lack of confidence in chip from some customers, due to perceived complexity of system operation/maintenance
- small installations with sub optimal delivery requirements

Solutions

- partnership work with larger suppliers
- ongoing dialogue and support to customers
- adjust the offer to meet customers' needs ⇒ engage in partnerships with boilers manufacturers and installers, to provide heat
- bespoke delivery arrangements

Final product & delivery – Urban (1)

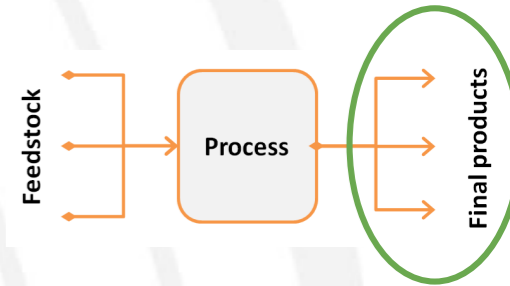
Challenges

- urban customer base
- lack of storage at customer end
- mostly domestic/small commercial customers ⇒ lots of small orders

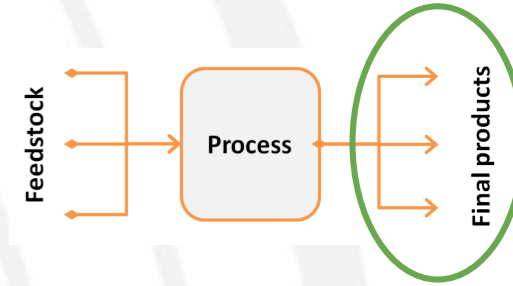


Solutions

- efficient storage in yard
- “just in time” ish production
- order system/QMS
- combined delivery system
- bespoke deliveries/various grades of products
- encourage customers to dry loose in shed
- online shop
- retailers



Final product & delivery – Urban (2)



Challenges

- air quality restriction
 - strict requirement for dry woodfuels

Solutions

- In-house biomass-fuelled kiln
 - consistent quality and MC
 - reliable product availability



Contextual factors

Challenges

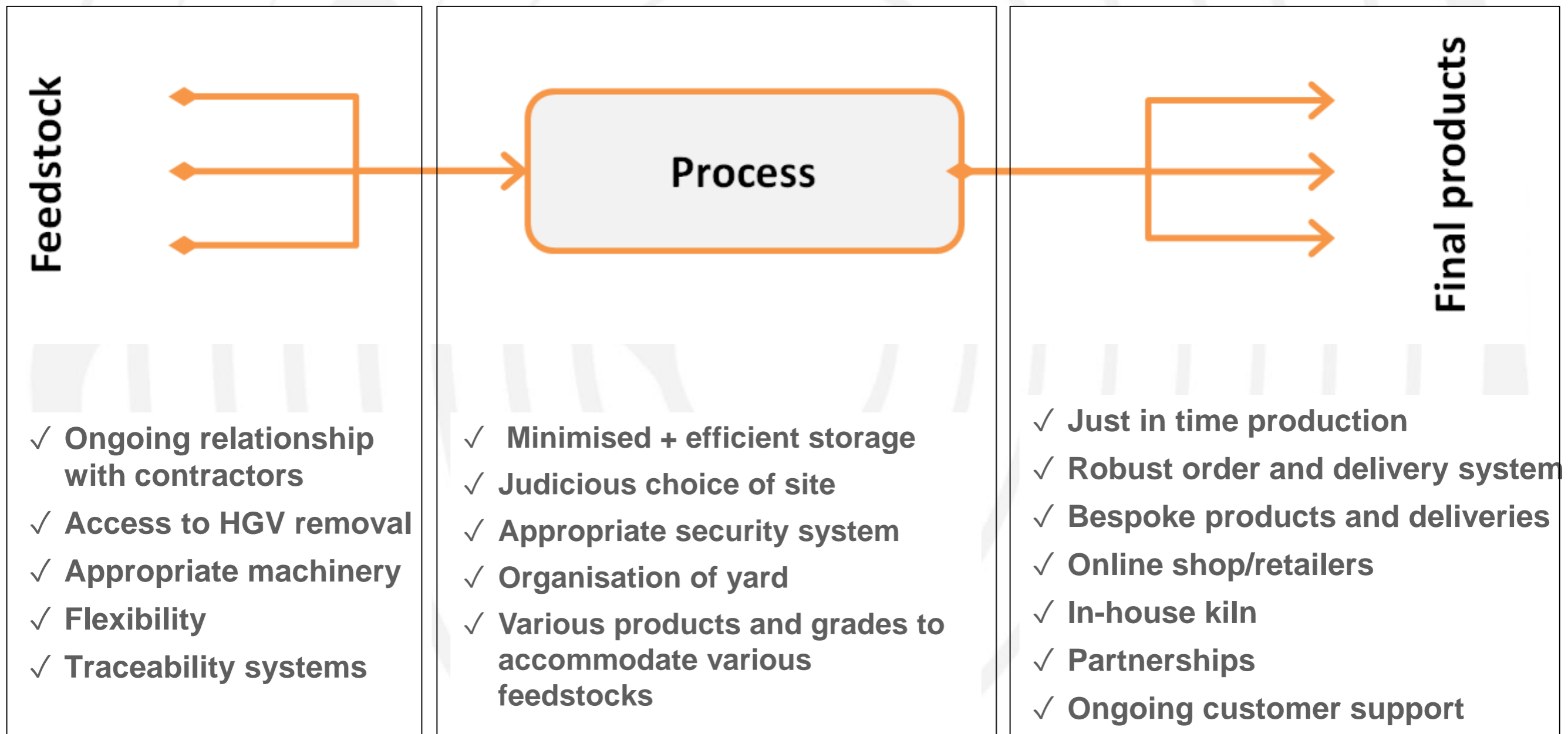
- Legislative framework
Aimed at commercial timber & larger scale operations
- Culture within tree work
- Felling licences
- Arboriculture not high enough up priority list on larger jobs (tree removal is an after-thought...)

Solutions

- Feed into consultations
- QMS and thorough systems
 - ensure traceability + compliance
- Admin worker
- Formal agreements with suppliers/contractors regardless of size
- Occasionally refusing some jobs



Keys to success: recap



The background features a series of concentric, light gray circles that create a ripple effect. On the left side, a faint, light gray silhouette of a hand holding a pen is visible, as if about to write. The text is centered in the middle of the image.

**Any
questions?**