

Value chains : Prime mover and Main Characteristics

- Stakeholder Type
- | | |
|---|---|
| <input type="checkbox"/> Farmer | <input type="checkbox"/> Agrarian Cooperative |
| <input type="checkbox"/> Public Institution | <input type="checkbox"/> Agro-Services |
| <input type="checkbox"/> Final Consumer | <input type="checkbox"/> Farmer Association |
| <input type="checkbox"/> ESCO | <input checked="" type="checkbox"/> Agro Industry |
| <input type="checkbox"/> Pellet Producer | <input type="checkbox"/> Biomass Supplier |

Location of Prime Mover

Municipality : Mollerusa

Latitude : 41.638405

Longitude : 0.887816



- Type of Residue used in value chain
- | | | |
|----------------------------------|--|-------------------------------|
| <input type="checkbox"/> Pruning | <input checked="" type="checkbox"/> Plantation Removal | <input type="checkbox"/> Both |
|----------------------------------|--|-------------------------------|
- Crop Species used in Value Chain
- | | | | |
|---|------------------------------------|---|----------------------------------|
| <input type="checkbox"/> olives | <input type="checkbox"/> vineyards | <input checked="" type="checkbox"/> apples | <input type="checkbox"/> pears |
| <input checked="" type="checkbox"/> peaches | <input type="checkbox"/> apricot | <input checked="" type="checkbox"/> nectarine | <input type="checkbox"/> plum |
| <input type="checkbox"/> cherries | <input type="checkbox"/> oranges | <input type="checkbox"/> tangerines | <input type="checkbox"/> lemons |
| <input type="checkbox"/> grapefruit | <input type="checkbox"/> hazelnuts | <input type="checkbox"/> chestnuts | <input type="checkbox"/> almonds |

Total Plantation Area involved in the Value Chain (ha) 400-500 ha/year

Typical APPR biomass production (tonnes/year) 8,000 - 10,000

Start Date of the APPR value chain (Month-Year) 2011

Factor Group	Description	Check the influence in success:(0)- Not relevant;(1)-May have influenced;(2)-Important for success;(3)It was crucial;(?)-Unknown					Check the 3 most crucial factors in WHOLE table
		0	1	2	3	?	
Market	There was already a mature market of biomass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	There was a shortage of usual biomass resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	There was a high increase of biomass demand (e.g. new power plants opened, increase of household biomass heating)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	The price of biomass locally rose, and made biomass residues of economic interest	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Target biomass market was stable and secure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Local Capacities	There was a recent reconversion of a sector (mining, metal industry etc.) leading to a high need of re-orientate economic activities. Biomass was one of the targeted new economic activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	There was already service companies/persons with capacities to start new biomass chains on prunings/plantation removal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	There was a campaign of information for biomass procurement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Pruning and/or agricultural residues were quite an issue in the course	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Consumer built supply with its own workers (tailored designed for purpose of new energy plan)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

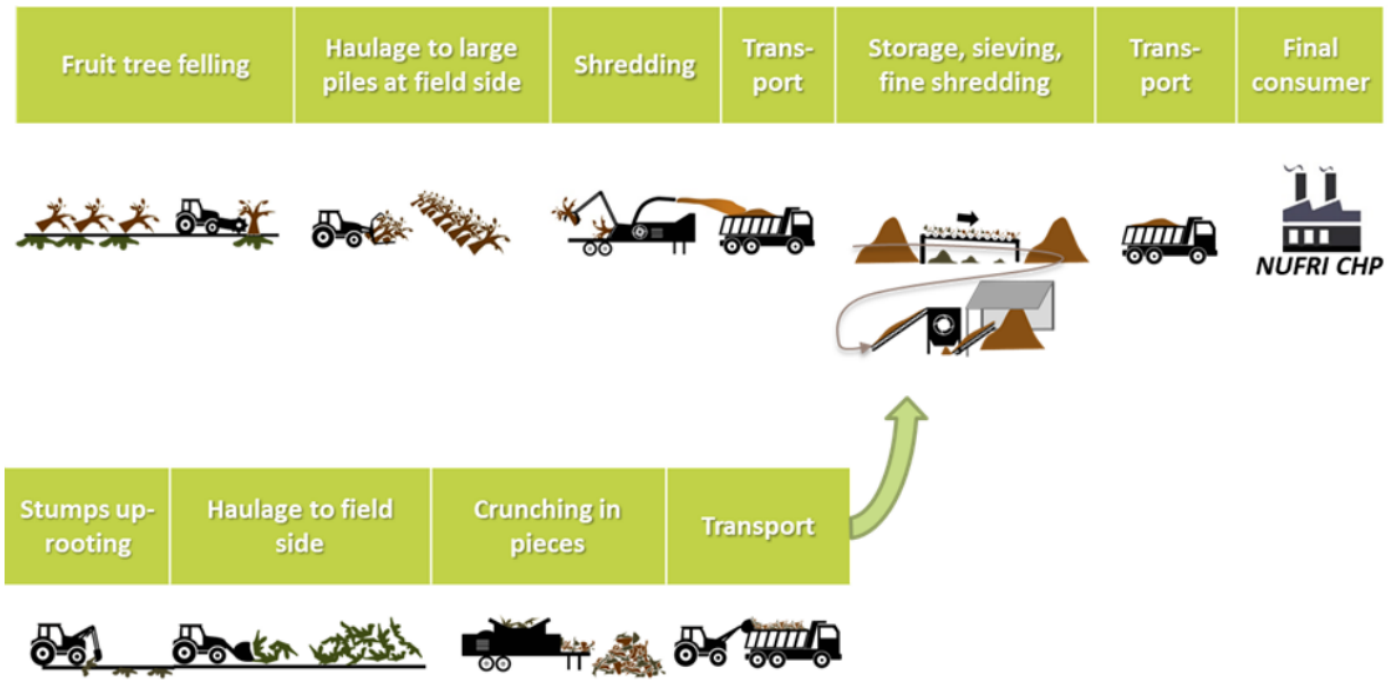
Factor Group	Description	Check the influence in success:(0)-Not relevant;(1)-May have influenced;(2)-Important for success;(3)It was crucial;(?)-Unknown					Check the 3 most crucial factors in WHOLE table
		0	1	2	3	?	
Logistics Chain	There were pre-existent collaborations established between farmers sector and biomass cosumers/traders	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	The introduction of new technologies (machine, handling systems, logistic chain) supported the implementation of new chains	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Private investment for entepreneurs was incentivised	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Farmers who receive the service of up-rooting are usual fruit providers (there was a pre-existent relation between consumer and farmers)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Short summary of the initiative (<100 words)

Summary of the value chain

NUFRI is a fruit processing and marketing company. Its plants in Mollerusa (Lérida, North East Spain) consume relevant amounts of energy for heating (preparation of fruit purees / cremogenated) and cooling (for fruit preservation). Two boilers of 10 MWth (Isntmanfield (2008), and Biochamm (2011)). The facilities entered in production under the framework of special feed-in tariff for renewable energies (thus benefiting of additional incomes for electricity sold to network). The mobile grate boilers utilise principally forestry woodchips. NUFRI started a new process for the associated farmers (those who already provide their fruit to NUFRI). The service consists in elimination of all plantation wood (trees and stumps). The farmers pays a fee to NUFRI service, which is an advantage to usual plantation removal services (2/3). NUFRI gathers circa 400-400 year, equivalent to 30% of the total biomass consumed in the plants. For performing the plantation removal NUFRI started a full tree uprooting and a shredding with large primary crushers or with secondary shredders. The material obtained was of low quality, and they established in their biomass park yard a system for sieving and fine shredding. The operation was changed afterwards, by processing the trees separately: first the trees were felled with a rotating circular blade mounted in front of a tractor. After the trees are hauled to field side. Afterwards stumps are up-rooted and accumulated in separate piles. The tree wood is processed in large shredders (secondary shredders) whereas the stumps are crushed in large pieces with a primary crusher. With this system the biomass obtained in two fractions improves quality

Actors and Roles in Value Chain



Fuel Specifications

Final form of Biomass prior to Exploitation

- Bales of branches
 Hog fuel-shredded

- Wood chips
 Pellets

Moisture content (%) :

Around 40 %

Max Content of Ash (% a.r.) :

Min LHV (kj/kg a.r.) :

Value Chain Details and Prices of fuels

End-users

- Self-consumption
 Public-private buildings
 Biomass to Market

- Industrial heating
 Distributed heat networks

Distance between biomass production and its final use (km) :

about 20 km maximum

Storage options

- On-farm storage
 Intermediate storage prior transporting to end user
 Direct delivery and storage at final user
 No storage

Ownership of the APPR harvesting machinery

- Farmer
 Leasing
 3rd party-private
 NUFRI (Final consumer)

- Farmer's community
 Municipality-public

Prices of fuels sold
to final consumers

- Price of APPR biomass (€/t) _____
- Price of regular woodchips (€/t) _____
- Price of ENPLUS pellets (bulk-€/t) _____
- Price of domestic heating gasoil (€/l) _____

Have you filled the questionnaire about
mechanized pruning/plantation removal ?

Yes No

If yes, please provide the name or e-mail you have
used on that questionnaire

Contact Data

Name : _____

Email : info@nufri.com

Phone : _____

Company/Organisation : NUFRI

Website (of the company or the APPR initiative) : http://www.nufri.com/

Logo of the company : http://www.nufri.com/sites/all/themes/nufri/assets/img/logo-nufri.png

Country : Spain



