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Innovative non-wood forest products economies explained through their network structure

Speaker: Riccardo Da Re

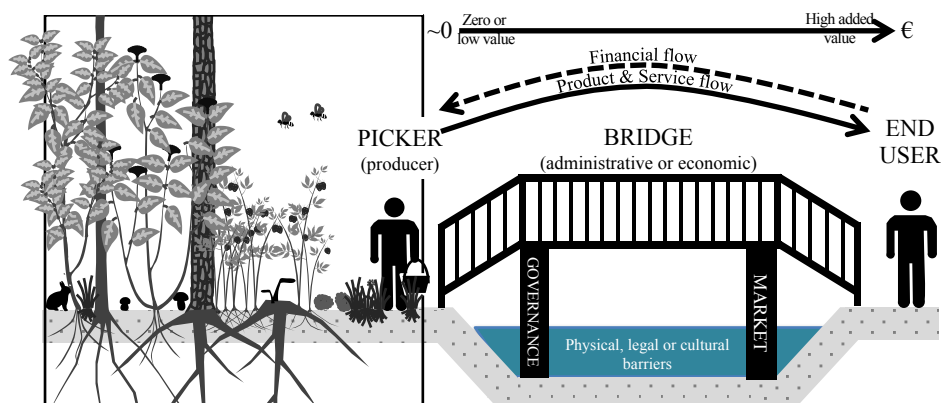
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Research questions



R.Q.: How can we create value from the exploitation of a WFP?

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Research questions

- Which are the **driving forces** that allow the generation of income and employment opportunities connected to wild forest product (WFP)?
- Which are the **network connections** among local actors (land owners, forest managers, processors, public bodies, ...) that support processes aimed to re-discover the traditional values and the new market potentials connected to WFP economy?

Introduction

Bridge = innovation which creates added value

Two approaches:

- **Market approach**

Bottom-up approach

Supply chain system is a complex amalgam of different actors each

Product's added value increases at each step of the supply chain

- **Governance approach**

State intervention may have more relevant impacts on rural development than the market approach

Good regulation defines rights

Public administration adopts a multi-level participatory governance

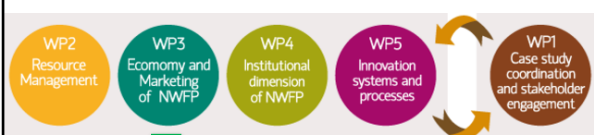
Introduction

Added value (Sathre, 2009)

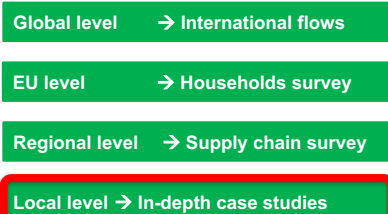
- **Utility value**, the “*tangible benefit*” that the final consumer obtains from using the product
 - access to the resources
 - use of the product/service at local level
 - need satisfaction
- **Exchange value**, difference between purchasing and selling price at each step of the supply chain
 - new income
 - monetary gap between cost of production and final product/service price
 - market scale from local to international
- **Societal value**, the total sum of benefits provided to society
 - created private local employment
 - society's attitude towards WFP business,
 - participation of actors in business making



Introduction



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Methodology

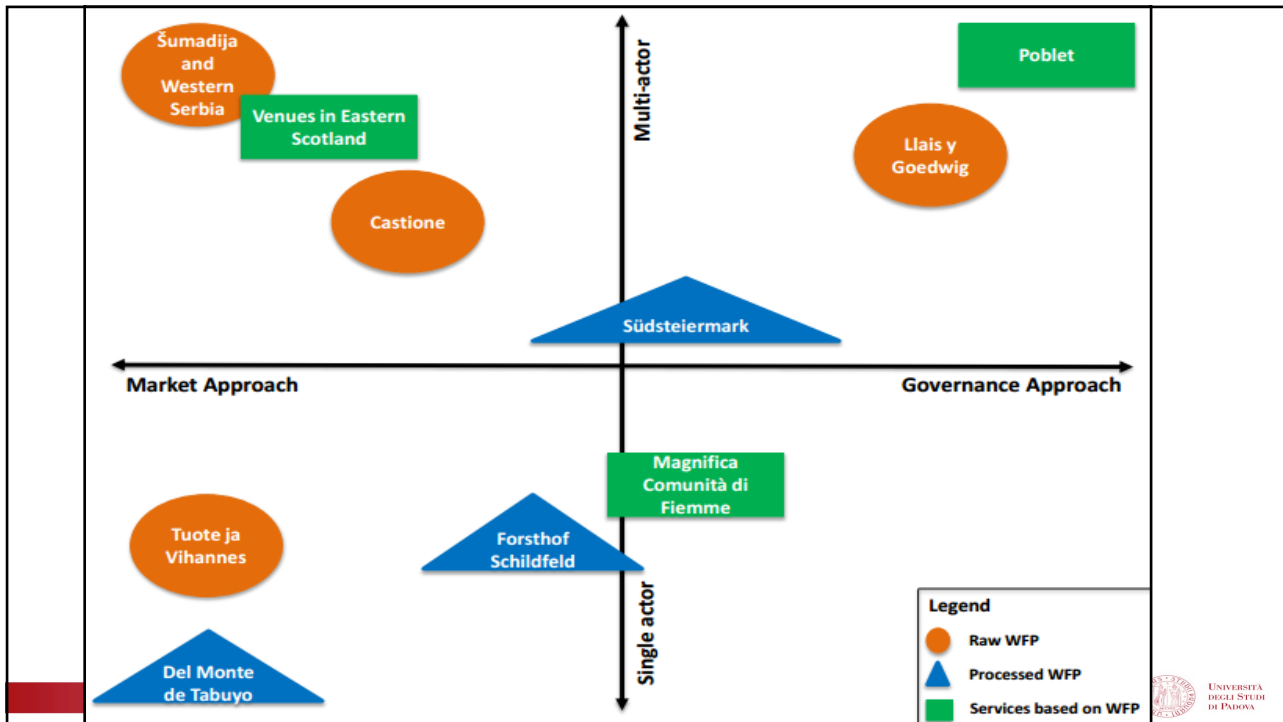
Study of 10 In Depth Case Studies (IDCS)

Criteria:

- WFP (considered as a product or as a service) is subject to **harvesting** and **commercialization** activities;
- may be considered **innovative** for the market or the governance approach, connected to a process of **added value** creation (utility, exchange and societal value);
- geographical administrative units at least **below the country level**;
- number of involved actors which satisfies the **network analysis conditions**.

Methodology

IDCS	Main WFP	Approach	Innovative added value	Added value
Südtiroler National Park	Processed berries	Governance tool applied to market	Label applied to berries jam	Exchange value
Forstthof Schildfeld	Processed game market	Market approach done by public actor	Vertical integrated supply chain	Exchange value
PNIN Poblet	Services based on mushrooms	Governance	Decision making for picking permits	Societal value
Del Monte de Tabuyo, sl.	Processed mushrooms	Market	Customers fidelity	Exchange value
Tuote ja Vihannes	Raw mushrooms	Market	Ego-network supply chain	Exchange value
Castione	Raw chestnuts	Market	Local community empowerment	Societal value
Magnifica Comunità di Fiemme	Services based on mushrooms	Private-public governance for market	Public-private valley management	Societal value
Šumadija and Western Serbia region	Raw mushrooms	Market	Attempt to create a SME collaboration	Exchange value
Eastern Scotland – Venues	Services based on several WFP	Market	Income based on WFP courses	Utility value
Llais y Goedwig	Raw WFP	Governance	Community woodland association	Societal value



Methodology

A **Social Network** is a social structure,
made up of individuals (or organizations) called "nodes",
which are tied (connected) by any kind of relationships
in a given point in time

It's different because...

...unit is not the individual (attributes), but the tie (relations)

	Llais and Goedwig	Poblet	Del Monte de Tabuyo	Forsthoof Schildfeld	Sumadja and Serbia	Suidsteier mark	Magnifica Comunità di Fiemme	Scottish Venues	Tuote ja Vihammes
Whole network indices									
Isolated nodes	X			X					
Components	X	X				X			
Density	X	X		X	X	X		X	
Average degree	X	X			X	X			
Arc reciprocity		X							
Average distance					X				
Compactness				X					
Node centrality indices									
Degree centrality	X	X	X		X	X			
Closeness centrality	X	X							
Betweenness centrality	X	X	X		X	X			
Eigenvector centrality	X								
Subgroups indices									
Core-periphery analysis	X				X	X			
Cliques analysis					X				
Other indicators									
Reputational power	X	X			X				
Type of matrix									
1-mode matrix (square)	X	X		X	X	X	X		X
2-mode matrix (affiliation)			X	X				X	

Results - Llais and Goedwig

Context

Llais y Goedwig is Wales' community woodland association. Members are not individuals but groups of people and that therefore Llais y Goedwig represents hundreds of people, all involved in community woodlands in some capacity.

Product

Any commodity traded which come from forest: mainly timber, fire wood, bark and tanning.

Target actors

All the 46 members of LlyG (4 of them didn't complete the questionnaire)

Network relations

- Heard of
- Contacts
 - Advice
 - Machinery
 - Physical help
 - Collaboration

Sub-Research Questions

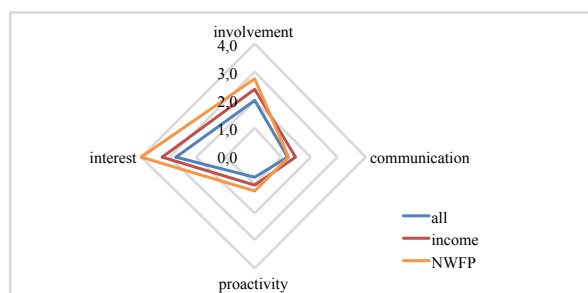
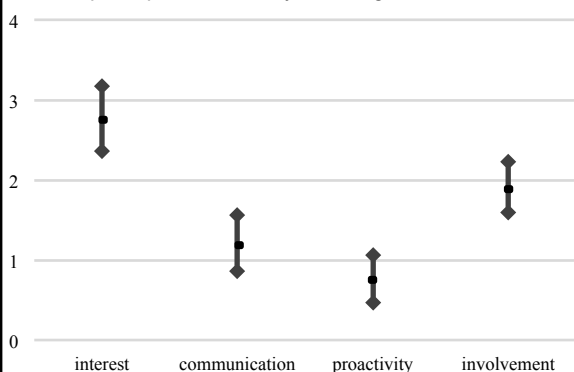
1. What do they trade? Which income does the WFP generate?
2. What kind of connection among the members? Who are the most powerful actors in the network? Are they also the more participative ones?
3. Are the trading actors also the core nodes in the whole network? Which differences between the two networks (traders and not traders)?

Results - Llais and Goedwig

57% of Llais y Goedwig's members derive an income from their woodland

	Unit	Timber	Fuelwood	Services	WFP
Total income	£	61,485.00	32,300.00	60,690.00	42,934.00
Average income	£	6,149.00	2,692.00	3,194.00	10,734.00
Number members	n	10	12	19	4

Level of participation of Llais y Goedwig's members, in a scale from 0 to 4

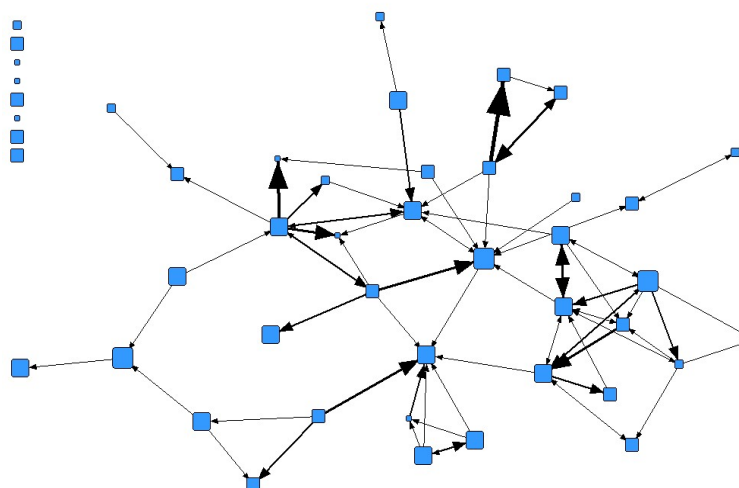


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Results - Llais and Goedwig

Llais y Goedwig's "contacts" network



Correlation with "involvement"	Relations	
	"Heard of"	"Contacts"
Degree	0.52*	0.57*
Closeness	-0.46*	-0.43*
Eigenvector	0.54*	0.41*
Betweenness	0.43*	0.58*

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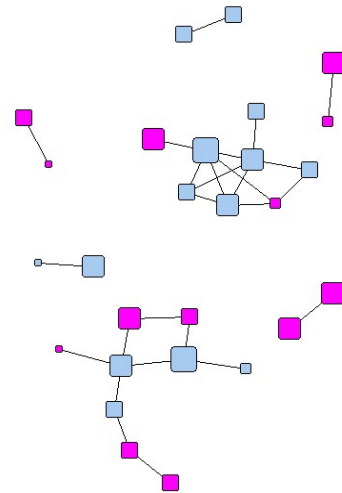


Results - Llais and Goedwig

	Heard of	Contact
No. nodes in the core	17	10
No. nodes in the core with income	14	8
% members with income in the core	82.3%	80.0%

Llais y Goedwig's members with income in the core of "heard of" and "contacts" networks

Contacts for "collaboration" network, distinguishing among members with an income generated by the forest and members without



Results – Forsthof Schildfeld

Context

It is a Forest Management Unit, and it represents an excellent example of game marketing.

Product

Game (both meat and transformed products), with a focus on the issue of marketing game activities..

Target actors

Forsthof Schildfeld's employees, trying to include the key actors in each segment of the internal supply chain: production/hunting, product processing, selling, and marketing.

Network relations

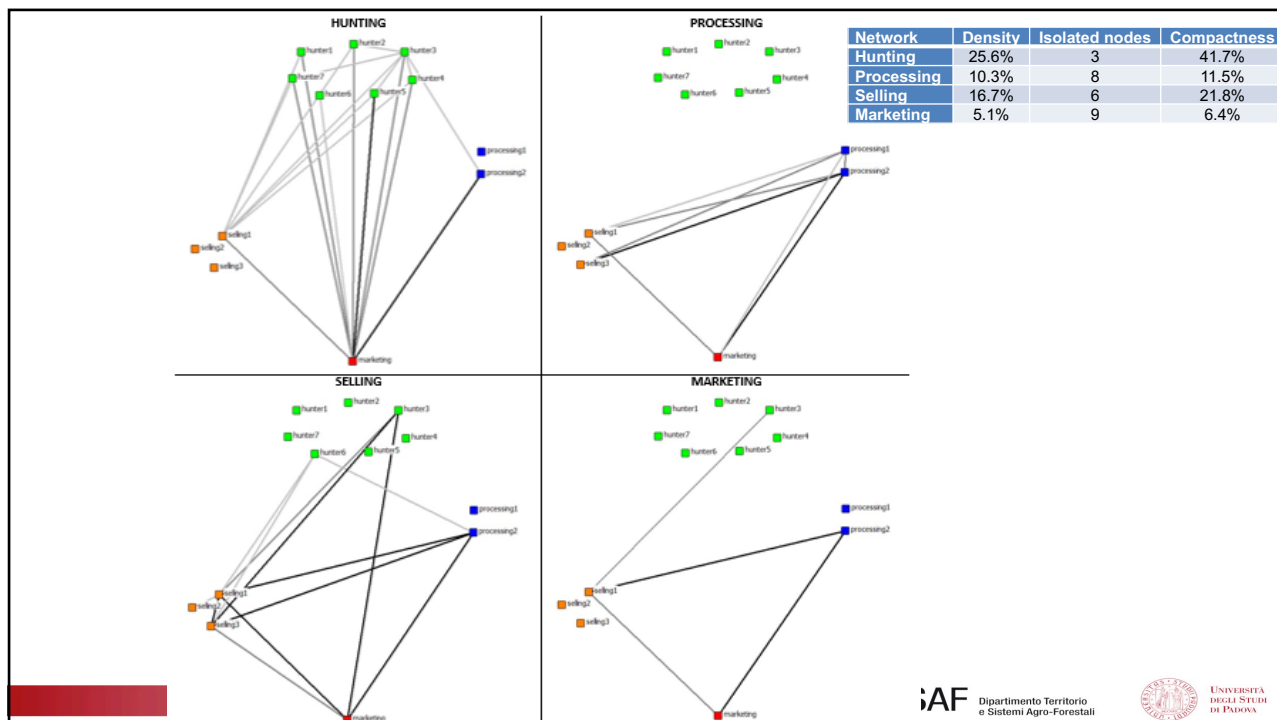
Number of contacts for:

- Production
- Processing
- Selling
- Marketing

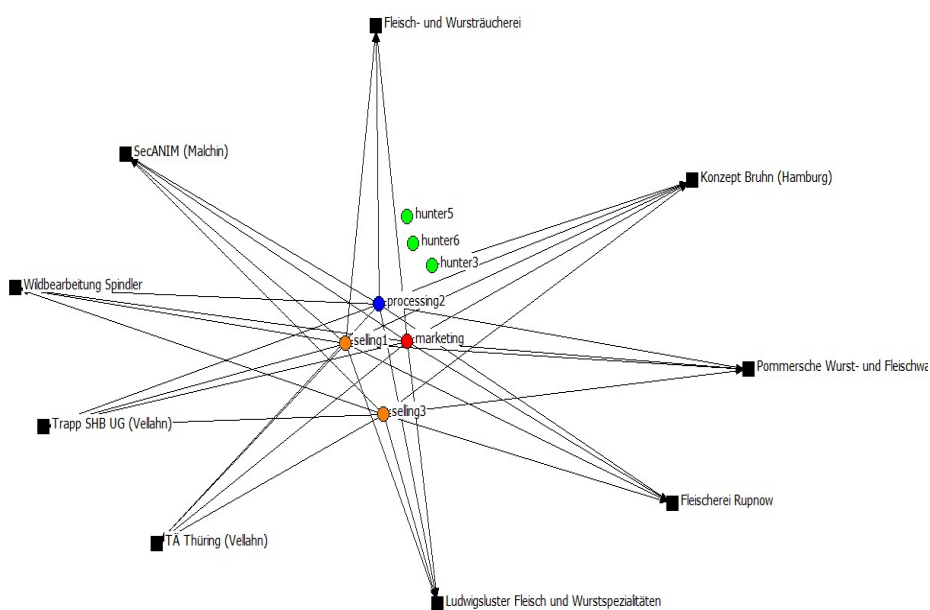
Affiliation matrix for external contacts

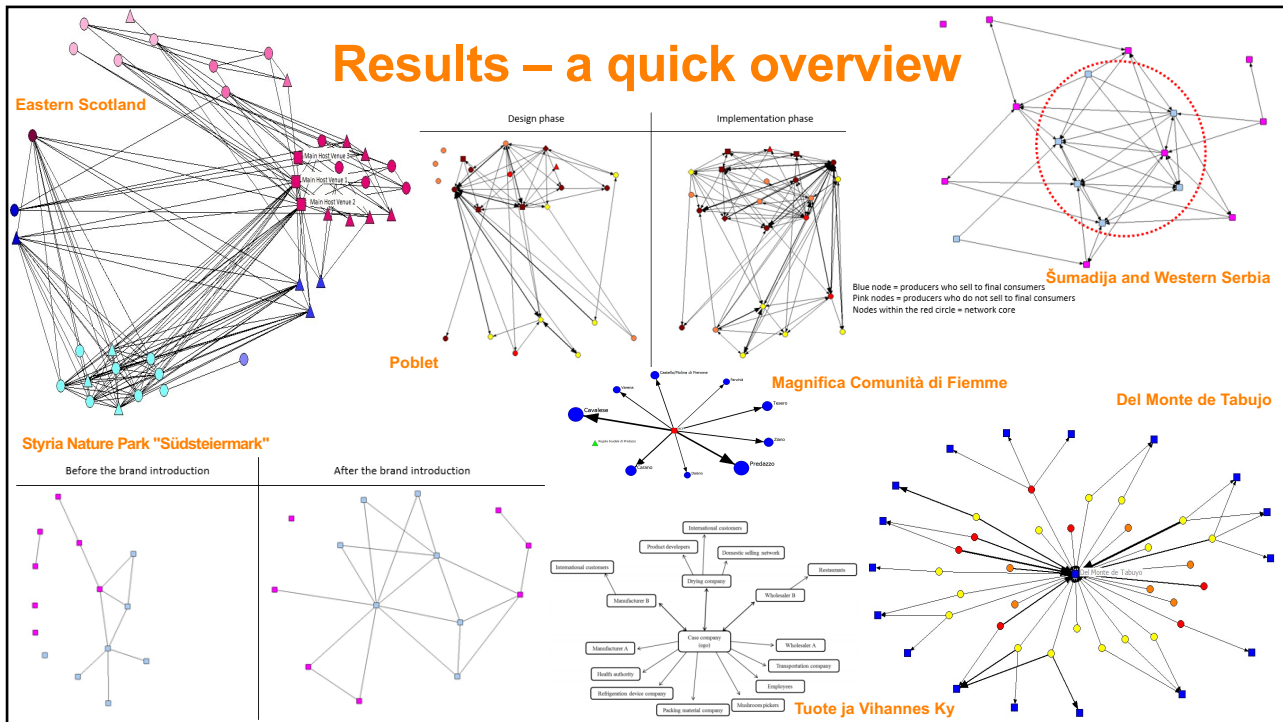
Research Questions

1. To get more profound information about the Forsthof Schildfeld's current supply chain of game meat
2. and related marketing activities, underlying the roles of engaged actors.



Results – Forsthof Schildfeld





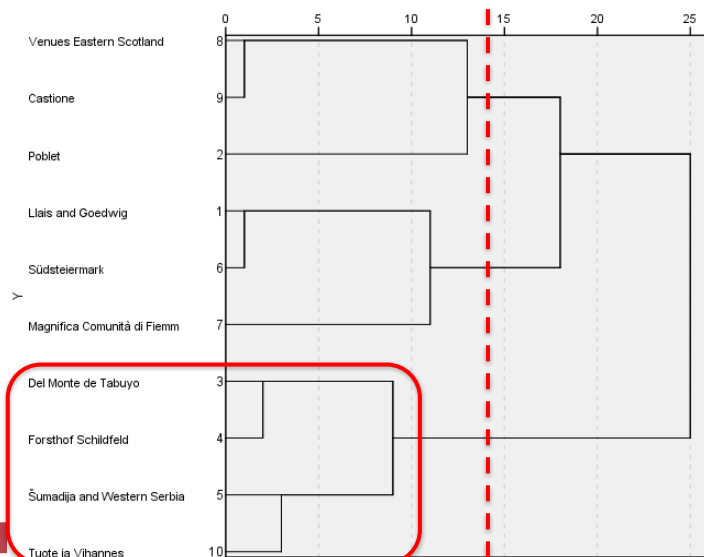
Results – All together

Table 2.2. Qualitative parameters to evaluate added value sub-categories in a scale from 1 to 5

Added value parameter	Scale				
	1	2	3	4	5
Utility value					
Access to the resources	no access	only customary holders	yes, with license	yes, through permit payment	yes free
Use of the product/service at local level	not used locally	used by few interested people	used not frequently by common people	used by many local persons	used by almost all locals
Need satisfaction	no market demand	no evidence, but potential need	needed by few specialized actors	high need of many specialized actors	high general request
Exchange value					
Income of target actors	almost null	minor additional income	major additional income	main source of income	only income
Monetary gap between cost of production and final product/service price	almost null	low	medium	high	high differentiation
Market scale	local	county	regional	national	international
Societal value					
Created private local employment	null	self-employed	single company's employees	few companies' employees	many companies' employees
Society's attitude towards WFP business	contrary	indifference	accepted	fully accepted with curiosity	enthusiasm
Actors' participation in business making	one key person or entrepreneur	group of key interested people	many key interested people	all representatives of key actors	all private and public stakeholders

Results – All together

Dendrogram of IDCS clusters, with respect their added value



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Lesson learnt

Main “**bridges**” that we found are:

- **Participation in horizontal networks**, which helps in getting the central positions of the collaborative networks, through a knowledge and ideas sharing.
- **Population representativeness of key actors in decision making**, which creates social cohesion when a governance approach is used to develop initiatives such as a permit for mushrooms picking.
- **Internalization of the supply chain**, which increases efficiency.
- **Differentiation** of selling channels and final products, which is a portfolio strategy that in the medium-long run increases the market allocation and generates new customers.
- **Interconnection** between SMEs or individuals’ market approach and the territory, which helps the rise inhabitants interest and of other connected local initiatives.
- **Different level of participative inclusion** at each step of the value chain, which improves efficiency and helps in monitoring employees/partners expectation.
- **Communication and transparency**, which are the key prerequisites for involving stakeholders.

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Lesson learnt

Da Re R., Vidale E., Corradini G., Pettenella D. (2016). Rural development and SME: the bridge between natural capital and NWFP economy. Project deliverable D3.4. StarTree project (EU project 311919)



Thank you

**Now you are part
of a Network!**

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