LV SIDEA congress
“Metamorfosi verde: Agricoltura, Cibo, Ecologia”
Perugia, 13-14 September 2018

COLLECTION AND CONSUMPTION OF WILD FOREST PRODUCTS IN EUROPE

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A work carried out under the StarTree project (Working Package 3)
Outline

• Background
• Research objective and methodology
• Results
• Conclusions and policy implications

Slides can be download from the web: search “pettenella”
**Non Wood Forest Products’ (NWFP) economic role**

- FAO estimates that NWFPs generated **US$88 billion** in 2011 (SOFO, 2014).
- **76 million tonnes** of food from the forest were consumed on average in 2011 (SOFO, 2014).
- **1 billion people** are thought to depend on *wild* foods (Burlingame, 2000).
- **80%** of the population of developing countries rely on traditional medicines, mostly plant drugs, for primary health care.

![Estimated income from the informal forest sector in 2011](image)

In the past a focus on the role of NWFP in DC

**Non Wood Forest Products’ economic role**

- NWFP in Europe: a market segment of the rural economy perceived as marginal and declining:
  - No clear definition (commercial product or/and recreational service?)
  - No data, also due to the complexity of the value chain
  - No innovation
  - Informal (black) economy
**Definitions (source: Muir, 2018)**

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Non-wood forest products</strong></td>
<td>NWFPs consist of goods of biological origin other than wood, derived from forests, other wooded land and trees outside forests. (FAO, 1999)</td>
</tr>
<tr>
<td><strong>Non-timber Forest Products</strong></td>
<td>The term NTFP encompasses all biological materials other than timber which are extracted from forests for human use (DeBeer &amp; McDermott, 1989)</td>
</tr>
<tr>
<td><strong>Wild forest products</strong></td>
<td>“Wild product” results from the “collection of edible plants and parts thereof, growing naturally in natural areas, forests and agricultural areas” (EU Art. 12, comma 2, Reg. 834/07 “organic law”)</td>
</tr>
<tr>
<td><strong>Minor forest produce</strong></td>
<td>All non-timber forest produce of plant origin including bamboo, brushwood, stumps, cane, fission, coccins, honey, wax, lac, or kendu leaves, medicinal plants, and herbs, roots, tubers and the like. (Government of India)</td>
</tr>
<tr>
<td><strong>Secondary or side use of forests</strong></td>
<td>All kinds of use in forests and forest lands not covered by forest, except for timber and minor forest materials, including: animal farming, breeding, farming, processing of wild and wild fruits and berries, medicinal plants, plantation of spores, cultivation of wild food resources, medicinal plants, technical raw materials and other procurement of secondary forest resources (nests, bees, etc) Kyrgyzstan Forest Law</td>
</tr>
<tr>
<td><strong>Forest by-products</strong></td>
<td>Categories of forest use: wood production, non-production, secondary forest materials and technological raw materials, the use of forest by-products, scientific research, cultural and social purposes, hunting economy, recreation (excluding tourism) and other forest uses not prohibited by law. Finland’s National Forest Programme 2015</td>
</tr>
<tr>
<td><strong>Natural forest produce</strong></td>
<td>Refers to wild or semi-cultivated plants or mushrooms which can be used as such or with some processing. This also includes the by-products of trees and soil materials. (Finland’s National Forest Programme 2015)</td>
</tr>
<tr>
<td><strong>Wild food</strong></td>
<td>Wild food is defined as anything edible that requires no human input to increase its production (ACF, USA, 2008; ACF, 2012; FAO, 2004; FAO, 1999.)</td>
</tr>
</tbody>
</table>

**Examples**: berries, mushrooms, herbs, decorative plants as well as hunting, bee-keeping and the grazing of cattle. (Finland’s National Forest Programme 2015)

**All meat from animals hunted or trapped for meat that is available for consumption; meat from game that roams in farms (a farm has an enclosed space) is excluded (UNECE, 2017).**
Dynamic market conditions
Some examples: *foraging*

http://www.wood-ing.org/
Resins

https://resinasnavasdeoro.es/

Sap water
Many (new) links with tourism: micotourism in Castilla y León

http://www.turismocastillayleon.com/es/gastronomia-enoturismo/micoturismo

Enterprises: 62 (in 2008); > 100 in 2011
15 Agritourisms/ Farm businesses
12 Hotels/Guest quarters
8 Bed&Breakfasts/Inns/Hostels
9 Cheese, sausage and wine growing and producing factories
2 Didactic farms
3 Museums/Private collections
30 Restaurants/Porterhouses
26 Typical products sellers
A WFP as **imago product** for presenting a territory

- Traditional local products
- “Green” products
- “Slow food” culture

**Networking**
Road, trail, path... the tools for connecting different economic actors

<table>
<thead>
<tr>
<th>Google search</th>
<th>hits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strada della castagna</td>
<td>Chestnut road</td>
</tr>
<tr>
<td>Strada del tartufo</td>
<td>Truffle road</td>
</tr>
<tr>
<td>Strada del fungo</td>
<td>Mushroom road</td>
</tr>
<tr>
<td>Strada del porcino</td>
<td>Porcino road</td>
</tr>
<tr>
<td>Strada del marrone</td>
<td>Marron road</td>
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Research objective and methodology
• **Objective:** to assess the consumption and collection of NWFPs in Europe

• **Design:**
  - Unit of analysis: household
  - Scale: EU28 (no Malta, Luxembourg and Cyprus) with Serbia, Turkey and European part of Russian Federation
  - Panel study (distributed by a polling agency)

• **Sample:** respondents: 17,346 (95% confidence level, ≈ 4.21% confidence interval).

• **Post-stratification** by number of households per country and by size of households within country

• **Questions:**
  - Socio-economic (urban/rural, income, size of household)
  - Consumption (14 products & how were they obtained)
  - Collection system (8 groups, 45 products – consumption vs. sale, quantity, location & use)
  - Other (forest ownership, frequency of picking, problems with and income from picking)
Results

Consumption of WFP (% of households)

- Fresh or dried nuts
- Fresh berries
- Dried, frozen, prepared wild berries
- Products based on natural extracts
- Fresh wild mushroom
- Dried, frozen, prepared wild mushroom
- Fresh wild plants
- Canned, juice, spirits or processed nuts
- Fresh, dry and non-handcrafted forest foliage and greenery
- Handcrafted forest foliage and greenery
- Fresh sap and raw resins
- Products based on sap and resins
- Frozen or prepared truffles
- Fresh truffles

45%
Consumption by country

Consumption patterns by country (correspondence analysis)
How were WFP obtained?

(\% of households)

- Collected from wild by members of my household: 25.33\%
- Received as a gift: 15.08\%
- Purchased from a collector or a harvester: 21.78\%
- Purchased from a shop: 81.50\%
- Other: 4.07\%

PERCENTAGE OF HH THAT PICK NWFPs:

- Latvia: 67.88\%  France: 25.21\%
- Czech Republic: 58.56\%  Romania: 24.17\%
- Slovenia: 53.58\%  Turkey: 21.85\%
- Estonia: 52.96\%  Spain: 18.32\%
- Slovakia: 52.47\%  Italy: 17.35\%
- Finland: 49.87\%  Serbia: 16.71\%
- Lithuania: 49.58\%  Denmark: 14.92\%
- Poland: 43.90\%  Greece: 13.41\%
- Russia: 40.00\%  Ireland: 11.01\%
- Bulgaria: 37.50\%  Portugal: 9.98\%
- Austria: 36.65\%  Hungary: 9.79\%
- Sweden: 34.07\%  United Kingdom: 8.25\%
- Croatia: 32.43\%  Belgium: 7.57\%
- Germany: 29.67\%  Netherlands: 4.33\%
Picking of WFP by country

MEAN 24.5%

Picking of WFP (% of households)

Wild Berries
Wild Mushrooms
Forest nuts
Wild medicinal and aromatic plants
Tree foliage, flowers, ferns, moss
Sap or resin
Truffles

0% 5% 10% 15% 20% 25%

Truffles Sap or resin Tree foliage, flowers, ferns, moss Wild medicinal and aromatic plants Forest nuts Wild Mushrooms Wild Berries
Value of collected WFP for entire Europe (total and per ha)

Other information

• Q: How many members of your household collected any of these items in 2015?
  A: 1.99 (mean value)

• Q: How many times did members of your household collect items you have indicated above in 2015? (Percentage of households that pick)
  A:

• Q: Has anyone in your household attended any courses on the recognition of plants and fungi? (Percentage of households that pick)
  A:
Other information

- Q: What were the main constraints you had on picking these products in 2015?
  A: (Percentage of households that pick)

<table>
<thead>
<tr>
<th>Constraint</th>
<th>0%</th>
<th>10%</th>
<th>20%</th>
<th>30%</th>
<th>40%</th>
<th>50%</th>
<th>60%</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Bad weather at picking time</td>
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<td></td>
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<tr>
<td>Too much competition with other pickers</td>
<td></td>
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<tr>
<td>2015 was a poor year for the products of most...</td>
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<td>Difficult access to the forest (lack of road, path, ...)</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Legal constraint</td>
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<td></td>
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</tr>
</tbody>
</table>

- Q: Did picking any of these products contribute to household net income in 2015 (monetary contribution)?
  A: (Percentage of all households)

<table>
<thead>
<tr>
<th>Monetary contribution</th>
<th>0%</th>
<th>5%</th>
<th>10%</th>
<th>15%</th>
<th>20%</th>
<th>25%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very Little (0-10% of the household income)</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Somewhat (11-50% of the household income)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>To an important extent (more than 50% of the...)</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Other information

- Q: How much are WFPs sold/consumed?

<table>
<thead>
<tr>
<th>Product</th>
<th>All consumed</th>
<th>90% consumed</th>
<th>75% consumed</th>
<th>50% consumed</th>
<th>25% consumed</th>
<th>10% consumed</th>
<th>All sold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tree foliage, flowers, ferns, moss</td>
<td>75.7%</td>
<td>9.5%</td>
<td>6.0%</td>
<td>5.4%</td>
<td>1.6%</td>
<td>0.8%</td>
<td></td>
</tr>
<tr>
<td>Forest nuts</td>
<td>77.1%</td>
<td>5.3%</td>
<td>6.0%</td>
<td>5.8%</td>
<td>2.5%</td>
<td>1.6%</td>
<td></td>
</tr>
<tr>
<td>Wild Mushrooms</td>
<td>85.2%</td>
<td>4.9%</td>
<td>4.3%</td>
<td>3.0%</td>
<td>1.4%</td>
<td>0.4%</td>
<td></td>
</tr>
<tr>
<td>Wild Truffles</td>
<td>48.8%</td>
<td>18.3%</td>
<td>9.8%</td>
<td>9.6%</td>
<td>7.7%</td>
<td>5.4%</td>
<td></td>
</tr>
<tr>
<td>Wild Berries</td>
<td>89.0%</td>
<td>4.1%</td>
<td>2.6%</td>
<td>2.2%</td>
<td>0.8%</td>
<td>0.4%</td>
<td></td>
</tr>
<tr>
<td>Wild medicinal and aromatic plants</td>
<td>89.4%</td>
<td>3.8%</td>
<td>2.3%</td>
<td>2.0%</td>
<td>0.9%</td>
<td>0.4%</td>
<td></td>
</tr>
<tr>
<td>Sap or resin</td>
<td>74.3%</td>
<td>3.9%</td>
<td>10.1%</td>
<td>5.3%</td>
<td>1.8%</td>
<td>3.3%</td>
<td></td>
</tr>
</tbody>
</table>

MORE SOLD THAN OTHERS
Conclusions and policy implications

• Collection of WFP:
  - a mass social activity (1/4 of Europeans!)
  - increases from West to East, from urban to rural
  - vast majority picks in forest that does not belong to them
    (importance of harvesting rights)
  - not regulated access prevailing

• Consumption of WFP:
  - Very high rates – but are they really wild? (product origin)

• Economic importance of NWFPs
  - for 0.5% of the EU households – more than 50% of income!
  - represent about 30% of roundwood value
More information: http://star-tree.eu/

Dipartimento TESAF
www.tesaf.unipd.it

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