CABLE YARDING IN FRANCE AND IN SWISS ROMANDIE: STATUS QUO AND ADAPTED MEASURES WITHIN THE TWO DIFFERENT ORGANISATIONS

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Abstract

Cable yarding is used for the wood mobilization on slopes and in protected flat terrains in France and Switzerland which share similar mountainous conditions across their common border in the Alps. While France is 50 times bigger than Swiss Romandie (French speaking region), French teams using cable crane are scares, harvest only 4 500 m$^3$/year, companies are small, and often face financial difficulties. In the same time, Swiss companies are bigger, with usually 2 or 3 cable cranes, and harvest twice as much on a yearly basis.

An enquiry was undertaken in 2017 among the community of French and Swiss companies to understand why such a big gap exist in the two countries despite the similar topographic context.

Interviews of stakeholders contributed to understanding the factors influencing technical aspects, economy, cable companies’ structure as contractors, operators training, organization of work sites, operating systems, forestry and environment.

Hence documented status quo was debated at a collaborative workshop. Over 60 foresters and stakeholders discussed the differences between the two countries. Recommendations and proposals were voiced out in order to stabilize French cable crane companies and develop cable logging activities in both countries.

Measures to facilitate multiple forest owners logging site (specific extension, legal simplification to cross a private property, mix of public and private forest to massify logging sites…) were underlined as a way to solve the lack of logging site. Financial subsidies from non-foresters activities (water, tourism, erosion protection…) were also identified as relevant leverage. The growth of logging companies could be also encouraged with capacity building activities (individual consulting or collective learning labs) addressing critical size, process efficiency, various machines and qualified human resources. To develop and secure cable yarding activities, a new training will open in 2018 in France, for companies and employees, forest owners and foresters

Keywords: cable yarding, recommendations and success stories, France, Switzerland…
Introduction

Cable yarding is used for the wood mobilization on slopes and in protected flat terrains in France and Switzerland which share similar mountainous conditions across their common border in the Alps.

In France, for many years, cable harvesting is stable and represents few volumes, despite efforts to increase its market share. The high cost of harvesting is frequently mentioned, but the stakeholders of the Alpine Forest community wonder if it’s really the only factor.

In Switzerland, companies seems to be sustainable, but have difficulties attracting new and young operators.

One of the objective of the interreg project FORMICABLE is to understand the currently situation, and propose ways to develop the cable logging activities.

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Interviews of stakeholders contributed to understanding the factors influencing technical aspects, economy, cable companies’ structure as contractors, operators training, organization of work sites, operating systems, forestry and environment.

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The same number of companies…with various organizations

While France is 50 times bigger than Swiss Romandie (French speaking region), the number of companies performing cable yarding is almost the same, with around 20 companies involved in cable logging.

As seen in table.1, the harvested volume is more than twice in Swiss Romandie and represents an important part of the total harvest (12.3%).

<table>
<thead>
<tr>
<th></th>
<th>France</th>
<th>Swiss Romandie</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cable crane companies</strong></td>
<td>20</td>
<td>23</td>
</tr>
<tr>
<td><strong>Yearly cable yarded volume (m³/year)</strong></td>
<td>85 000</td>
<td>210 000</td>
</tr>
<tr>
<td><strong>Total volume harvested on national/regional level (m³/year)</strong></td>
<td>36 387 000</td>
<td>1 700 000</td>
</tr>
<tr>
<td><strong>Proportion of total volume harvested with cable</strong></td>
<td>0,23%</td>
<td>12,30%</td>
</tr>
</tbody>
</table>

Table 1 : number of companies and harvested volume in France and Swiss Romandie
Indeed, the average annual volume harvested per company is close to 4600 m³/year in France, compared to 9500 m³/year in Swiss Romandie.

Of course, each company has its own specificities and organization, but different trends appear between the two countries: Swiss companies are bigger, with usually 2 or 3 cable crane teams and are specialized in cable logging. These companies generally have a manager who is not an operator, but leads the company, which is not possible in France with smaller companies, when the manager is more often in the excavator than at the office. Moreover, during the last 10 years, 12 cable logging companies were created in France (for 20 in activities in 2017), while 11 disappeared, proof of the weakness of the companies. In Swiss Romandie, during the last 20 years, only 3 companies have been created, and none disappeared.

Regarding the equipment, there is no difference between the 2 countries, with a strong predominance of cable crane on a trailer.

Beyond these differences, variations in the harvested volume and the companies’ typology underline that Switzerland has a real culture of cable logging, which is accepted and promoted everywhere, and more and more in flat terrain for soil protection.

A common need of many operators

In France, the last cable yarding specific training courses (operator level) was given in 2007, in the only training center involved in this complex activity. As a consequence of this extinction of newly trained resources and in association with the rapid turnover in the companies, the know-how is now concentrated on few operators. The risk is high that skill and efficiency, even vitality for the companies will be lost. In 2017, company managers commonly estimated that around ten trained operators per year would be needed to counterbalance this risky trend.

In Switzerland, 2 schools are specialized in cable logging training, one in the German speaking region, one in the French, and both wants to maintain and develop skills in companies through operational and effective training.

One of the aims of the Formicable project is to launch training with a qualification, and to set up short and technical training courses to develop and secure cable yarding activities. The target are companies and employees working on logging sites, forest owners and foresters. Until now, 4 short sessions have been organized, and the qualification training will start in October 2018 in France.

A similar Silviculture

In Switzerland, clear cut is forbidden by the law, while they represent 30% of the cuts in France (fig 3). In both countries, the dominant trend is the blank silviculture (many small clearcut, with usually areas smaller than 0.5 ha). It concerns regular old and mature forest, where individual selection is not possible. Selective thinning is done, like with other logging
systems, but the new trend is the fishbone silviculture in young forest with small trees (volume < 1 m$^3$)

![Fig 3: Silviculture in France and Swiss Romandie](image)

**An economical gap**

Usually cable yarding takes place in mountains often considered as the skidder’s area. Of course, machines capacities are not the same, as cable yarding require less skidding trails. But the logging costs of these two systems are also really different (table 4) and have a big impact on cable yarding development.

<table>
<thead>
<tr>
<th></th>
<th>skidder</th>
<th>Câble crane</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Purchase price</strong></td>
<td>150 à 300 k€</td>
<td>100 à 550 k€</td>
</tr>
<tr>
<td><strong>Working days/year</strong></td>
<td>220</td>
<td>180</td>
</tr>
<tr>
<td><strong>Technical cost (€/day)</strong></td>
<td>500 to 600 €/day</td>
<td>1 200 to 2 000 €/day</td>
</tr>
<tr>
<td><strong>Usual price of haulage</strong></td>
<td>10 €/m³</td>
<td>32 €/m³</td>
</tr>
</tbody>
</table>

Table 2: comparison of costs between skidder and cable crane in France (observed prices)

This difference can be explained by a difference in the number of days worked, but mainly because only one operator is needed for the skidder, whereas it takes 2 for the cable logging system (hook and unhook). As a result, labour costs have a very large share in the total cost.
in Switzerland, living costs are very high (salaries, supplies, transport...), and have a very strong impact on cable logging costs. Thus, costs vary from 60 to 100 €/m$^3$ in Switzerland, while in France they are between 35 and 50 €/m$^3$ (felling and skidding).

With an almost common price for wood at roadside on an international wood market, the profitability of the operation is only possible for wood of very good quality, which is rare in mountains.

Because mountain forests have many issues (protection, tourism), the public authorities support harvesting with subsidies, in order to ensure the operation can happen. Subsidies are different between countries and even between forest regions, and concern various topics.

In France, investment subsidies (between 30 and 40% for the purchase of machinery) is completed by animation subsidies (advice to cable crane companies and forest managers, communication, resource studies, etc.). Moreover, each timber yarder may request subsidies (value between 6 and 10 €/m$^3$) to reach the economical balance and stimulate the forest owner to harvest.

In Swiss Romandie, subsidies only exist for timber yarder, but with a very high level: between 25 and 95 €/m$^3$.

This economic difference is probably the main factor explaining the development of Swiss companies.

**Recommendations**

In June 2017, a workshop has been organized in France, in which more than 60 foresters involved in cable logging have participated.

After the presentation of the status quo, four workshops were organized to identify possible solutions and to propose actions.

The first theme concerns the increase of the number of cable yarding specific sites proposed by forest owners, and several proposals were made:

1- Communication on the advantages of cable logging, to forest owners but also to public communities who are concerned by landscape, protection of the population against erosion and rock fall.

2- maintain and increase direct subsidies on equipment and logging site

3- find other sources of subsidies from non-foresters activities, related to environmental services provided by cable operations, such as maintaining water quality, landscape for tourism, protection against erosion.

4- identify winter logging sites, far away from high mountains, to increase the number of working days per year
The second theme concerns the improvement of the efficiency of all the stakeholders:

5- Encourage and facilitate multiple forest owners logging site in order to massify: mix of public and private forest, legal simplification to cross a private property when the forest owner refuse to join the common harvest,
6- Develop a silvicultural approach by forest area, including forest road, rather than small and individual ownership unit
7- Provide companies a many years visibility of logging sites through multi-year contractual agreements, to encourage the sustainability of companies and equipment’s investments

The third theme concerns the efficiency of the logging companies, and especially their growth

8- propose capacity building activities (individual consulting or collective learning labs) addressing critical size, process efficiency,
9- encourage the diversity of machines in the companies and between companies to meet various site configurations
10- Propose to company managers to participate in the training of new operators and to enhance the qualification and performance of the company.

All these proposals are not of the same level: some can be quickly implemented, by coaching actors, others require political or even legal involvement, and must be carried by the whole sector.

Conclusions and perspectives

In the past, many studies have been carried out on cable logging. For the first time, a global survey made possible to draw up a complete photo of this activity.

The comparison between 2 countries made possible to identify some success stories, but also the difficulties faced by the companies and the forest managers in the implementation of the cable crane logging sites.

Several proposals were formulated, of various levels, all focused on the development of this complex activity.

These proposals must be presented to the public authorities, to participate to the strategic and financial policies for the coming years

French references about local situation


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FORMICABLE Project: http://www.fcba.fr/catalogue/1ere-transformation-approvisionnement/actions-collectives/formicable-le-cablage-au-service-de-lexploitation-forestiere