

# Woodlands for drinking water: for the value of forest services

Vittel - March 1st 2017

#### **COST PESFOR-W**

Julien Fiquepron\*, Olivier Picard\*, Aurélien Bansept\*\*, Eric Toppan\*\*, Nicolas Wilhelm\*\*\*

- \* Centre National de la Propriété Forestière -Institut pour le Développement Forestier
- **\*\*** Fédération Forestiers Privés de France
- **\*\*\* Syndicat Intercommunal des Eaux des Moises**



COST is supported by the EU Framework Programme Horizon 2020



- Forest water: a richness ?
- How to develop partnerships ?









In France, 55% think that wastewaters are directly retreated in plants to produce drinking water (survey C.I.EAU / TNS SOFRES - 2008)





What's the value of good quality water for drinking purposes, from the start, thanks to forest ?

#### Natural image of woodland water

- **Method:** contingent valuation, based on household surveys. Assessment of preferences between 2 different water origins



Water pumped from the river Moselle heavily treated

Water from woodland sources, with little treatment

- **Résults:** Households are willing to pay more for having or keeping tap water from woodland sources.
- $\Rightarrow$  It is worthwhile to promote water from woodland sources natural: communication, certification label for "water from forests"

## **Catchments in agricultural plains**

Case study of Rennes
Creating woodland to protect water

#### **Protection costs study**

71.5 ha afforested for water protection,

costs 6 300 €/ha (14 700 €/ha including land purchase).

Over 10 years:

- Protection costs (including agricultural measures)
   = 0.16 €/m<sup>3</sup> (1/4 due to woodland planting)
- **Costs avoided** (changing the catchment) =  $1.50 \in /m^3$



Here the local authorities fund the land purchase and woodland planting to create protective forest cover

## **Catchments in agricultural plains**

## Case study of Rennes

An efficiency indicator of this approach:



## **Catchments in mountainous forests**

Case study of the Syndicat intercommunal des eaux des Moises (SIEM) Interreg Alpeau project

Pumping lake water: 41 times more expensive than water from woodland springs.

Treatments costs: pumping is 93 times more expensive than woodland springs (0.26 versus 0.03 €/m<sup>3</sup>).





An accidental increase of turbidity may cost 69 000  $\in$ : more than 5  $\in$  by subscribers. Without the loss in terms of image and confidence for subsribers !



## Case study of Masevaux

#### Forest management dedicated to water quality, catchments

of springs in forest

Additional forest management costs: from **40 €/ha/year** 





It is vital to preserve woodland springs, which can be used to supply natural water at very competitive costs

A richness... but also costs !

#### Need to restore a balance in water policies

Only a regulatory procedure (catchment protection perimeters):

- easements generally not remunerated in forest sector
- land purchase

Often not known by foresters: compliance is uncertain

Regulation is necessary but is not an end in itself. It must be implemented or even supplemented.

#### **Two ways forward:**

- improve the dialogue and payment for easements
- developp partnerships with contractual arrangements



Developing partnerships

Those are the goals of:

# « Eau + For » program

Developed by French private forest organizations, in close collaboration with local water supply services - with financial support of France Bois Forêt, the French interprofessional organization of wood and forest sector



Contracts for which services ?

- increase forest cover (afforestation),
- support particular forest practices for water,
- lead and coordinate forest management on sensitive areas,
- to commit to a "forest water" label/certification









## **13 main sites identified**

00

- Sites where an action for partnership has been initiated
- Site with a fulfilled partnership

- How to develop partnerships ?
  - The Syndicat intercommunal des eaux des Moises (SIEM)





# Fragmented ownership in mountainous forest

Middle water protection zone: 50 ha, 124 parcels,102 owners

- How to develop partnerships ?
  - The Syndicat intercommunal des eaux des Moises (SIEM)



#### A real partnership:

An association gathering the local water supply service and the foresters (ASL forestière du Mont-Forchat). 5 years contract signed in 2014.

#### Origin of the partnership:

Since a turbidity accident caused by logging operations, the SIEM wants to develop prevention in forest areas of the catchment

#### The actions:

- Establishment of a global sustainable management document
- Construction of a forest road
- Contract with  $6 \in /m^3$  of wood for additional harvesting costs

## Limits, a big gap between

- General speeches
  - 2012, WWF6: green economy
  - 2007, Ministerial Conference on the Protection of Forest in Europe, Varsaw resolution (PES)
- Actual decisions
  - For many water producers « Forest is not an issue » and regulations are adequate.

Exclusive priority on polluted watersheds;

- Many foresters are not involved: don't want another process with constraints.

Some prefer « doing right, without telling they do so ».

#### > Tools to develop partnerships

A technical guide "Protect and value forest water", with operational forest guidelines to protect water quality.

Take advantage of the good image of water from forests: label "eau forestière" (forest water), in collaboration with Ecocert company.

Share methods and animation costs with other environmental services: carbon, biodiversity... in addition with wood production.



## • CONCLUSION

French private foresters have operational technical and contractual tools to optimize drinking water protection. They are ready to commit themselves, but they can't do it alone

At present, the demand for this service remains limited, few partnerships with water suppliers of « elite level »

Partnerships with water operators are necessary for two key resources:

✓ to optimize protection of vulnerable catchments

✓ for an efficient and sustainable wood mobilization

Focus on implementation of regulatory procedures and on partnerships with companies on high value water catchments



The Vittel PES programme has persuaded farmers to reconvert to extensive low-impact dairy farming, including abandoning agrochemicals, composting animal waste and reducing animal stocks.

Case study: Vittel (Nestlé Waters)



PES achieve miracles in books, in practice, what could it do for foresters?

# Thanks for your attention





#### **Contacts**:

Julien FIQUEPRON	+ 33 (0)3 83 90 57 91
Olivier PICARD	+ 33 (0)1 47 20 97 09
Eric TOPPAN	+ 33 (0)1 47 20 56 56
Aurélien BANSEPT	
Nicolas WILHELM	+33 (0)4 50 72 40 26

julien.fiquepron@cnpf.fr olivier.picard@cnpf.fr eric.toppan@foretpriveefrancaise.com aurelien.bansept@laposte.net nwilhelm@eaux-moises.com

#### To go further:

http://www.cnpf.fr/n/woodlands-for-drinking-water/n:263 http://www.cnpf.fr/n/the-forest-development-organizations/n:249

## Technical guide <u>Protect and value forest water</u>

PROTÉGER ET VALORISER L'EAU FORESTIÈRE





Guide pratique national, réalisé dans le cadre du programme « EAU + FOR » - 2014

## Forest guidelines to protect water quality:

Different hydrogeological contexts :

- Springs, wells, drilling
  - geology: alluvium (porous aquifer)
  - geology: granite, schist, gneiss... (porous fissured aquifer)
  - geology: karst (karstic aquifer)

– River intake, dam

#### Field form and diagram of sensivity : instructions



**Recommendation example**: It is compulsory to create forest roads or tracks outside of the very high sensivity zone (at less than 75 m of the catchment), with additional costs of few hundreds to several thousands of €/ha. (major risk is turbidity)