

Digital Trust  
and Personal Data



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AGENCE FRANÇAISE  
POUR LA BIODIVERSITÉ  
ÉTABLISSEMENT PUBLIC DE L'ÉTAT



# Managing sensitive data for public information: a use cases review of the French water information system

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Access to environmental information is the first pillar of the *Aarhus Convention*

*a right to know  
a link between democracy and public sector openness*

...adopted in UE Directives  
*a 1990 Directive enhancement*

*more data, more themes  
Environment & PSI*

...and in France  
*early in the CADA  
lately in the Digital Republic Act*



	1990	2012
Denmark	0.9	4.2
Netherlands	1.7	3.6
Finland	0.8	3.3
Norway	0.6	3.3
Switzerland	2	3.3
United Kingdom	1	3.3
France	0.7	3.2



## Environmental policy stringency

considers policy-induced cost of polluting by firms across different sectors and policy instruments

*Botta & al, 2014, doi :10.1787/5jxrjnc45gvg-en*

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2006  
*eaufrance*

**EauFrance** stands for the  
French water information system  
*a repository, a tool, a media... about **water**  
hydrology, biology, chemistry, economics...  
a wide scope*

**EC and EEA** through *Eionet*  
*gathers datas for the  
Water Directive Frameworks*



**Open** is our motto  
*Open data  
repositories & APIs  
Open source  
software & hardware*

# Managing sensitive data for public information: a use cases review of the French water information system

**1920 - 2019**

# longest-lasting continuous chronicle (**water levels**)

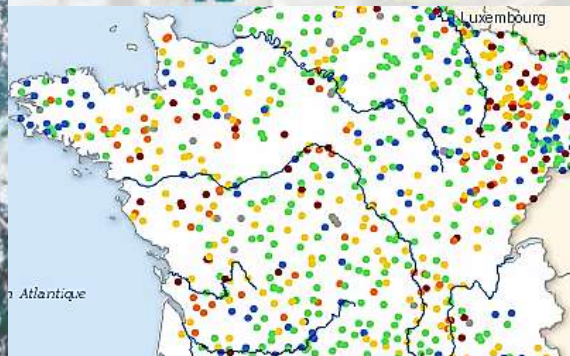
**5 Mdata/yr** since 1964

# best informed continuous chronicle  
(**chemical concentration**)

**620 000 km**  
of rivers in France

# Three use cases with HUDGE economic stakes

## Boat fishing monitoring on rivers



Cartograph', MTES, AFB for WFD, in 2011 - 2016

- better
- Fish
- Quality
- Index
- worse

annually  
**150t of fish**  
caught in rivers  
26t quota for elvers: 10M€/yr<sup>1</sup>

## Water abstraction databank

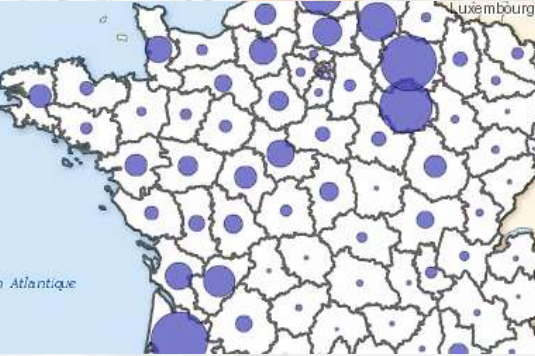


Cartograph', Water Basin Agencies, AFB/BRGM, for BNPE, 2018



about **40km<sup>3</sup>**  
withdrawn<sup>2</sup>  
each year from French rivers

## Plant protection products sales registers



Cartograph', Water Basin Agencies for WFD, 2017 DREAL / INERIS for BNV-d, 2018



**260 700 m<sup>3</sup> of PPP**  
**= 62 250 t**  
of active substance  
sold each year in France

<sup>1</sup>These data only describes declared activity, while *poachings* believed to be at least as important.

<sup>2</sup>Immediately released volumes, for irrigation or power plants, represents up to 800 km<sup>3</sup>/yr.

## Two axes to understand F-WIS specificities

### ... about data process and technical features

- ✓ “standard” indicators,
- ✓ the **inherent information** of each record,
- ✓ the **data structure**.

Complex

◆ *Describing a fishing trip with tools and catches, is more “complex” than a common sale declaration.*

➔ *In the end, what matters is an idea of the effort needed to prepare data for dissemination.*

Level of  
technical  
complexity

for data processes  
and protection

Simple

### ... about social needs, expectations and public topics

- ✓ international and Community laws,
- ✓ the **need of local adjustments**,
- ✓ the **weight of economic issues**.

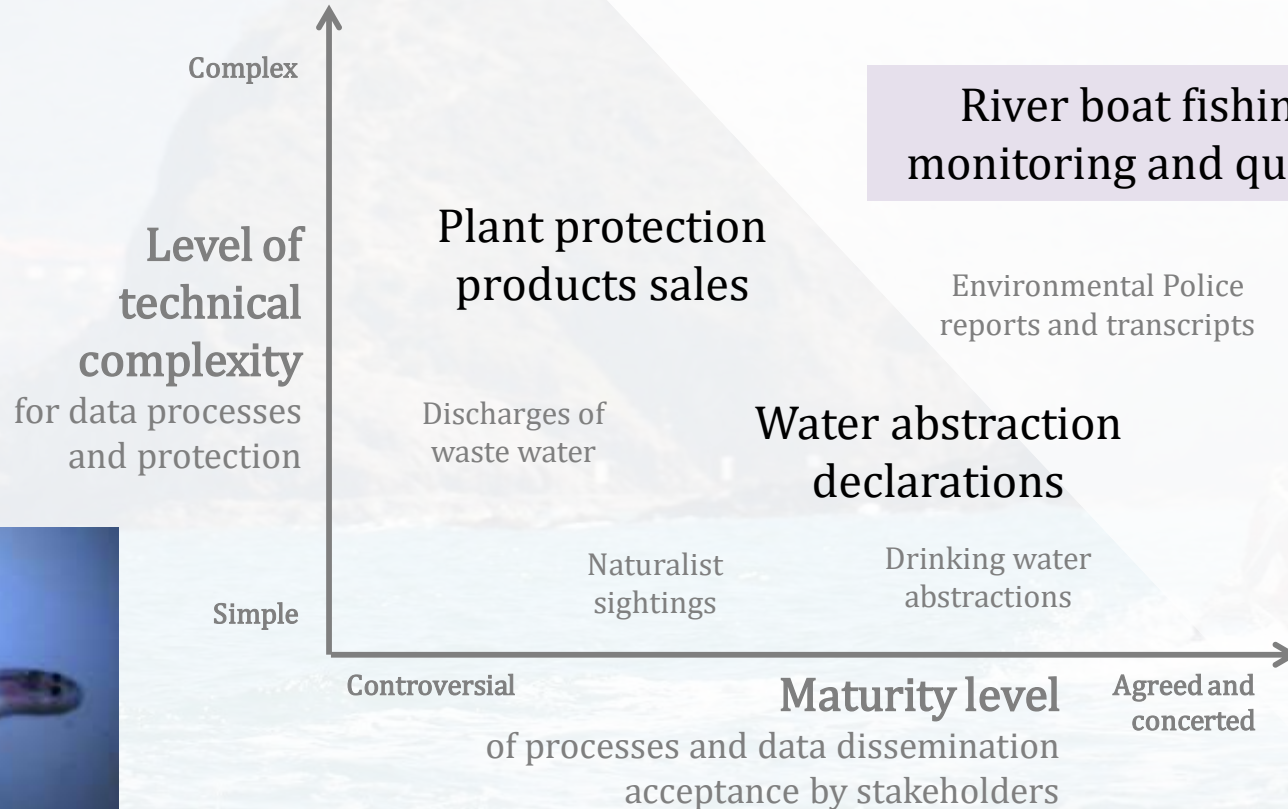
Agreed and  
concerted

➔ *In the end, what matters is an idea of the stakeholders acceptance and of the secrecy of data.*

Maturity level  
of processes and  
data dissemination  
acceptance  
by stakeholders

Controversial

Overall use cases presentation,  
according to their technical complexity and the  
acceptance of related data dissemination processes.



© L. Saint-Olympe, AFB 2007

# Boat fishing monitoring on rivers

*expertise and support to the profession to underpin an ambitious policy*



©AFB 2019

**Highly sensitive information**  
because stakeholders patterns and strategies can be deduced  
from data. **Poaching** exacerbates market competitiveness.

**An important technical inherent complexity**  
due to equipment and practice description.

**Data publication relies on 2 assets**  
a long-standing **support** for  
economic actors (fishermen)

**technical and analytic  
skills**, for accurate  
anonymisation  
and APIs.



1984

National law  
about  
**quota**



2009

Washington  
convention



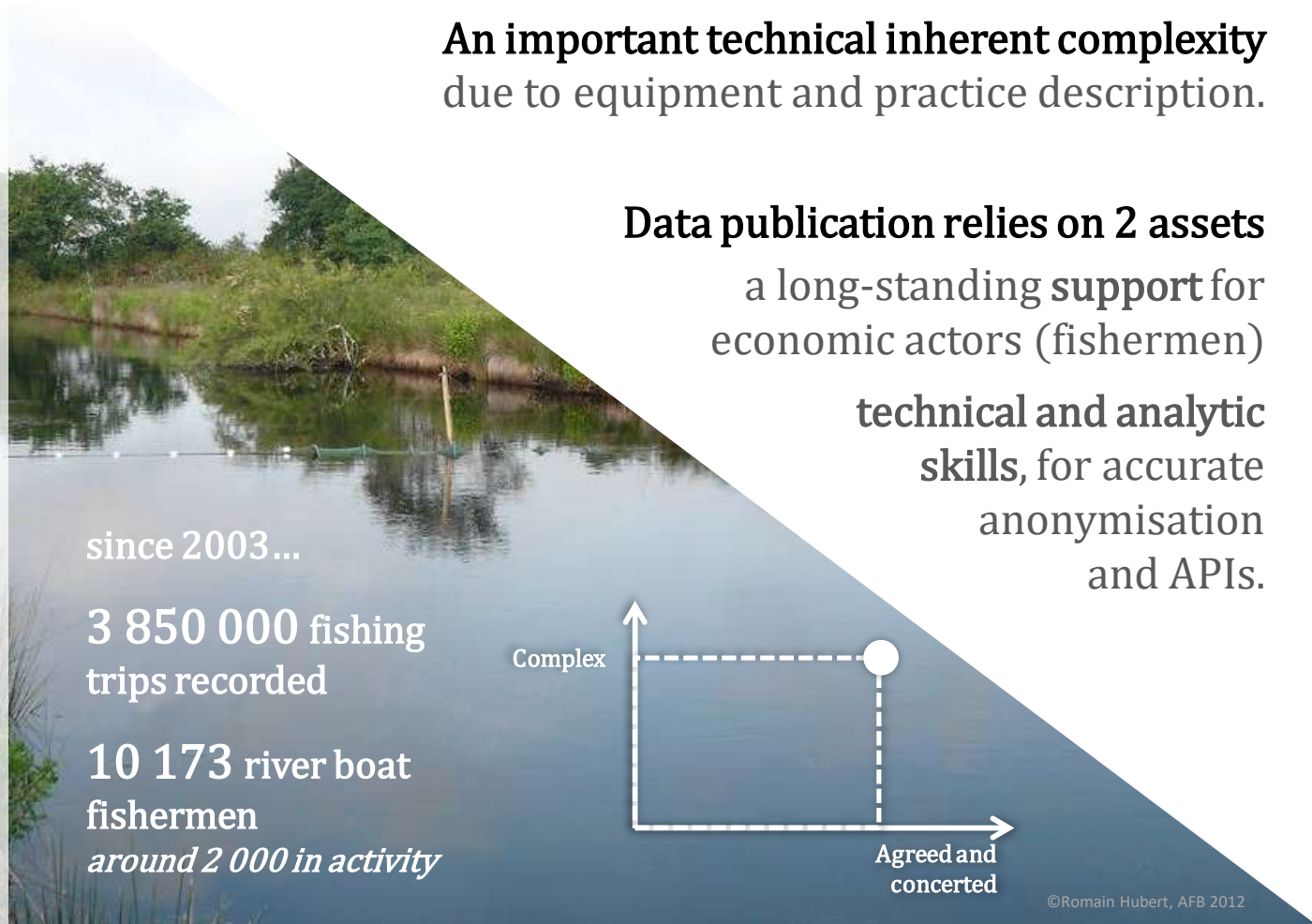
2009

Data collection  
**framework**



**poaching**

is still a great pressure on  
fish population. Police and  
stakeholders act for more  
info.

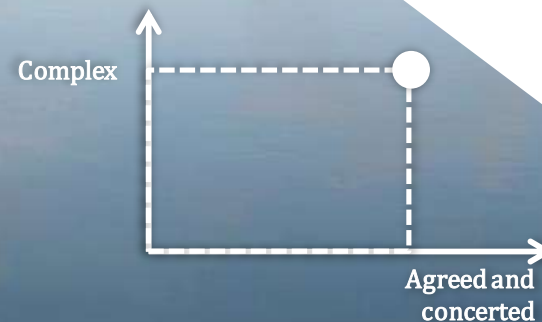


since 2003...

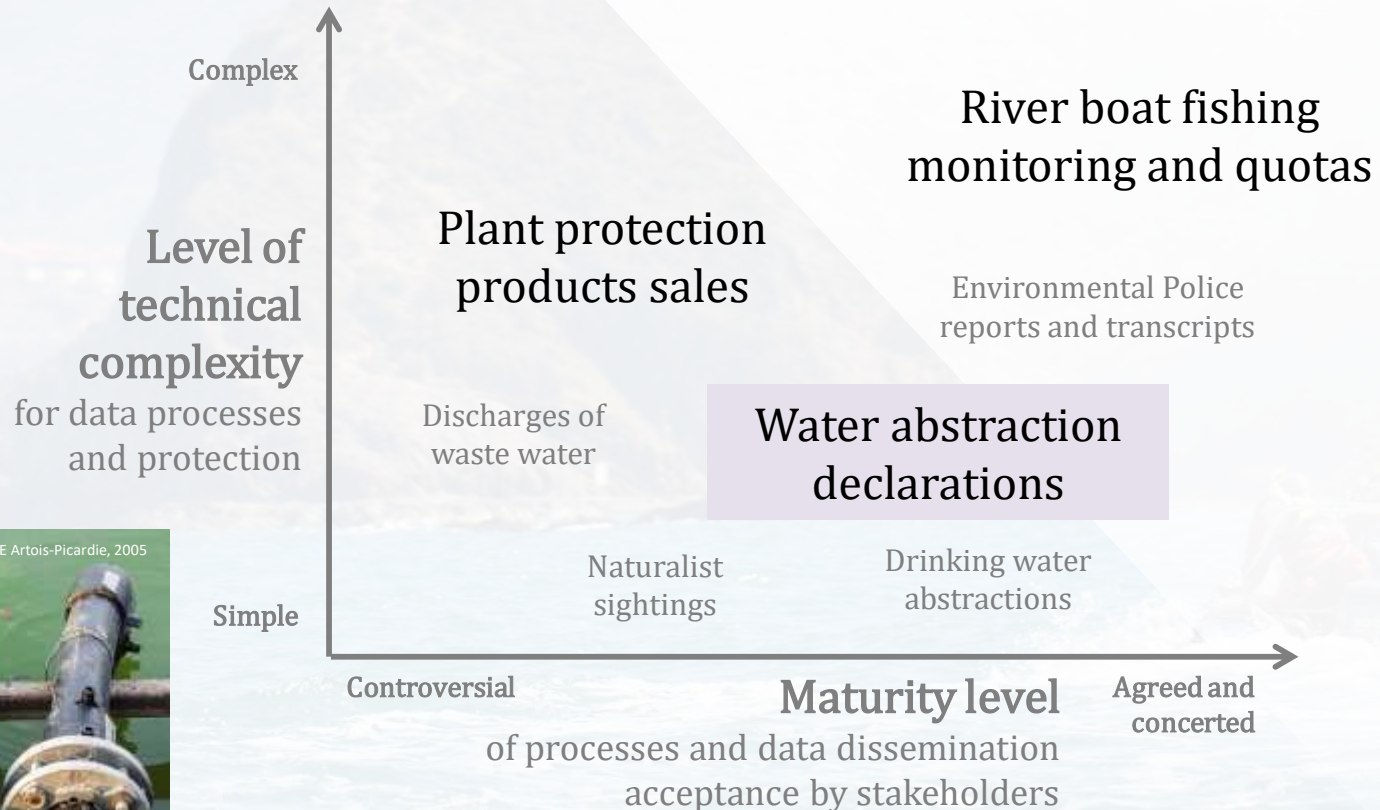
3 850 000 fishing  
trips recorded

10 173 river boat  
fishermen

*around 2 000 in activity*



Overall use cases presentation,  
according to their technical complexity and the  
acceptance of related data dissemination processes.



## The water abstraction databank

*a legal framework  
allowing the share of nearly raw data*





©O. Abellard, AFB 2012

**Sensitive data *you cannot hide***  
with social, economic, environmental, safety and security stakes.  
***Physical location*** can easily be founded by citizens.

**Yearly declaration & spatial accuracy**  
Data are given yearly, for each withdrawal facility.  
Positions are blurred using municipality centroid.

**Open data thanks to strong pillars**  
a significant consideration  
in regulatory processes  
a profound technical history,  
supported by equipment  
and data engineering

 1992  
National law  
about obligations

 2000  
Water  
framework  
directive

 2007  
National law  
about obligations

 2011  
National decree  
for fee  
calculation  
2013  
integration  
process into  
organic  
finances Law

since 2008...

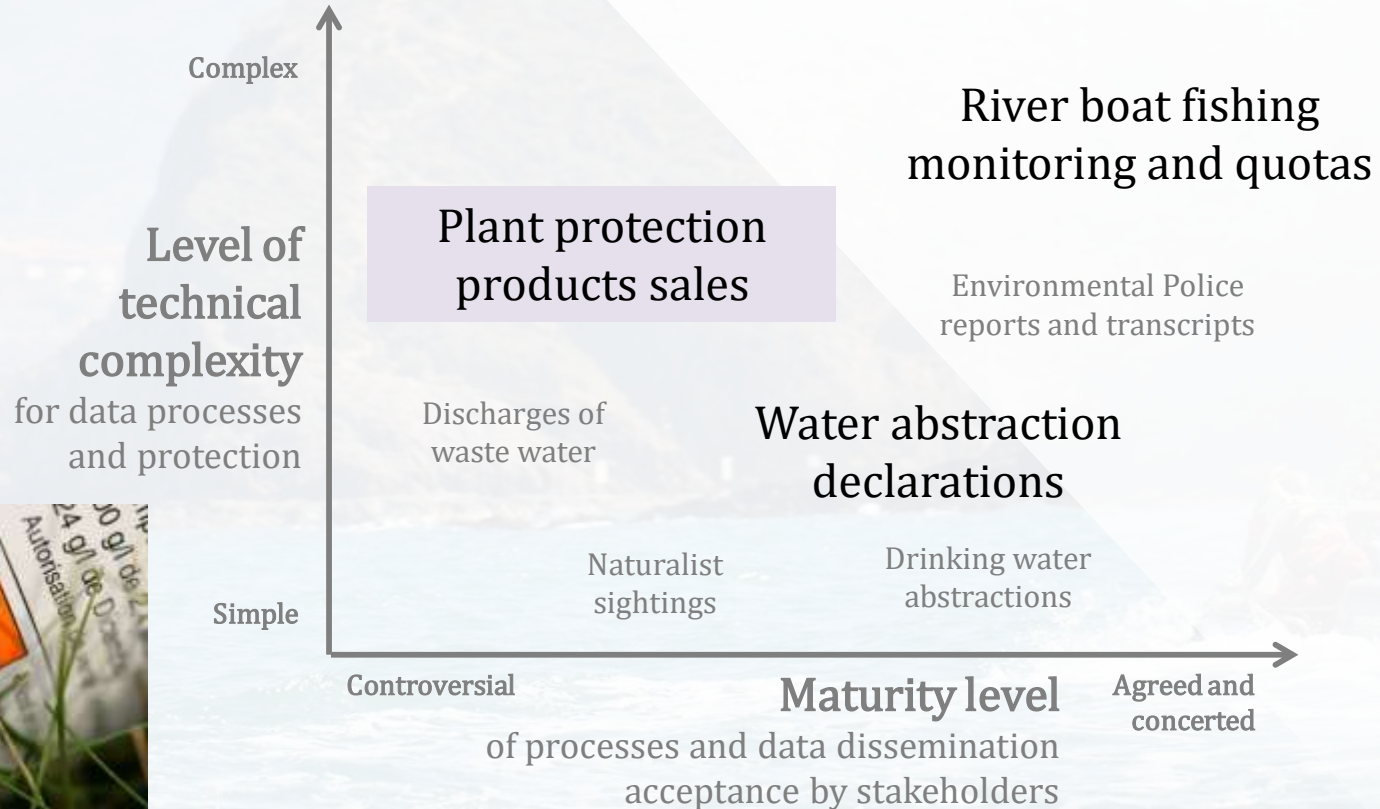
623 000 water  
withdrawals declared

116 500  
withdrawal facilities

Complex

Agreed and  
concerted

Overall use cases presentation,  
according to their technical complexity and the  
acceptance of related data dissemination processes.



## Plant protection products sales registers

*a complex and controversial matter*



© enviro2b, 2017

**A very precise information... the same goes for stakes !**  
The millions of exhaustive sale declaration is an **information duty**.  
For stakeholders, it is also a **breach** in statistical secrecy,  
especially when **regional combination** is not possible.

**A iconic societal concern, a well-known conflict**  
Public information and pollutant emissions laws  
are widely conveyed. But here, sales data  
and economic concerns are closely linked.

Not an **open dataset**, but an **open case**.  
As long as **anonymity** and **provincial  
aggregation** are respected,  
data can be retrieved.  
*Is it really enough ?*

**60s** scientific communities  
**awareness**

1967  
1976  
1988  
1993  
chemical substances  
**regulations**

1998  
Aarhus convention

2000  
Water framework directive

2003  
Kiev protocol

2006  
2009  
REACH directive & regulations

since 2013  
multiple returns & appeals  
(national, european)

since 2010...  
**14 100 000**  
sale transactions  
**2 650**  
PPP suppliers



technical skills, IT processes  
&  
functional and political topics

**Technical feasibility**  
doesn't seem to be the  
main barrier in studied  
cases, whereas **established  
know-how and expertise** is  
a key element for success.

« open data by design »  
&  
departmenting task forces

**Open data strategies**  
should still prevail in  
public services, where  
**departmenting data,  
informatics, scientific,  
organizational and legal  
task forces** is a great  
concern.

local data strategies  
&  
shared / open developments

**International frameworks**  
and **initiatives** should  
prevail on local  
engineering, regardless of  
local data strategies, as far  
as national securities and  
policies are heeded.

*(...) implementing open data and engineering guided  
by the balanced measurement of social issues versus  
scientific and informative weight.*

“

**Artificial intelligence**  
is already being tested to help  
environmental Police,  
with technical insights

**Data about biodiversity**  
and large scale phenomena,  
supported by  
crowdsourcing

**And tomorrow ?**



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