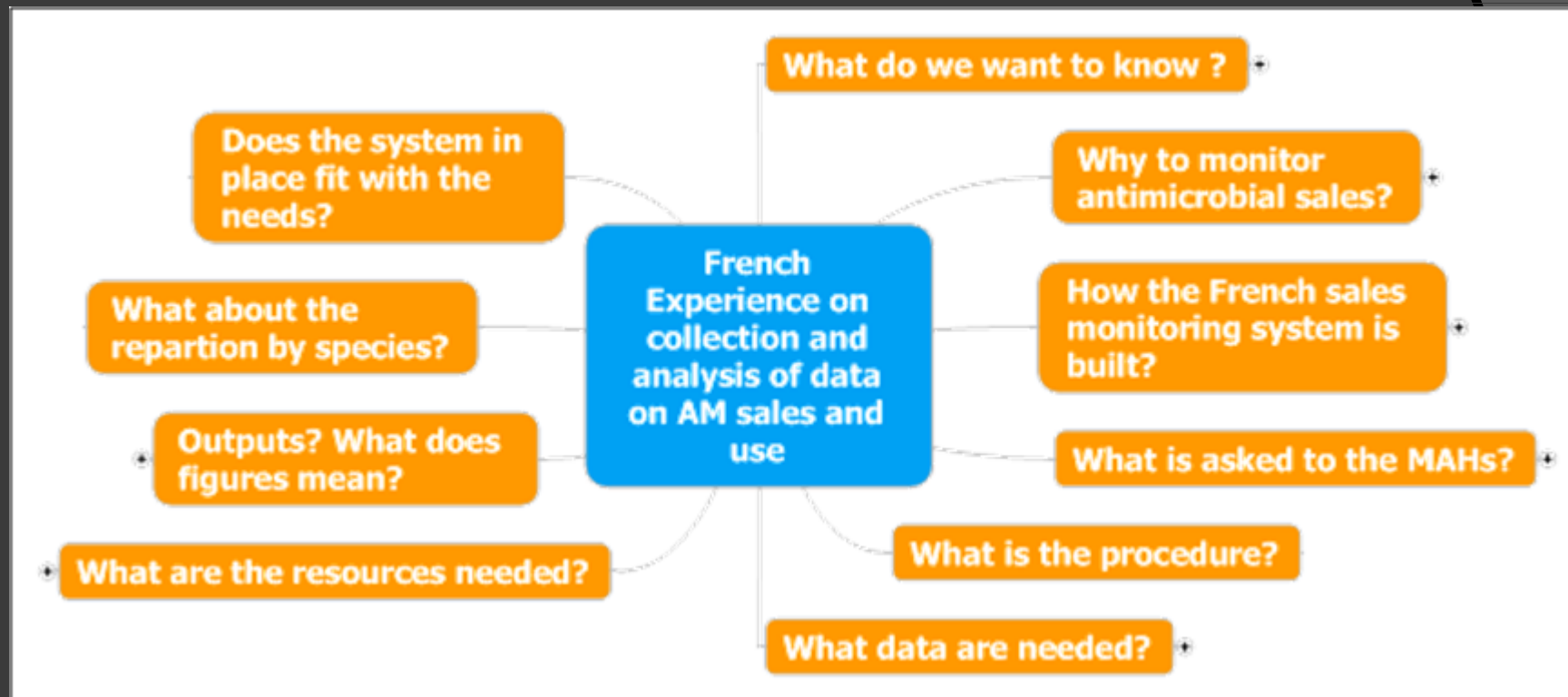




What do we want to know ?

- have a picture of the use of antimicrobial
- be able to see evolutions

But need to be careful to:

- **Level of details** (*Nice to know, Need to know*)
↳ **cost / effectiveness**

Why to monitor AM sales?

Sales Monitoring

Resistance Monitoring

Are essential elements for risk analysis

➤ Risk Assessment

- « Exposure » to Antimicrobials

Picture

➤ Risk Management

- Help for decision on RM options
- Monitoring of RM decisions
- Effect of RM measures

Evolutions

➤ Risk communication

- Tool for risk communication

How the French sales monitoring system is built?

Origin

- 1999
- OIE guideline
- agreement Industry ANMV/AFSSA sponsorship
Ministry of Agriculture



Principles

- Confidentiality ensured
- Simple questionnaire
- 100 % answers
- Check quality of data



Ministère de l'Agriculture, de l'Alimentation,
de la Pêche et des affaires rurales

What is asked to MAH?

- ◉ For each sale package of each VMP containing antimicrobial :
 - ID number (CIP code)
 - Number of sales

What is the procedure ?

● Procedure

- ask in November Number of sale for each sale package of each VMP containing antimicrobial for the previous year
- 3 month for the industry to reply
- If no answer, contact MAH
- check the validity of the data base
- Enter sales figures in the database
- check declaration with regards to previous year declarations
- check with regards to annual taxes declarations
- make calculations / estimations by species :
- Produce report
- Internal and external consultation on the draft report (Afssa laboratories, Ministries, Industry)
- Take into account (or not) comments
- publication of the report

Data needed for a survey based on MAH declarations?

- ⦿ Sales figure for each sale package for each VMP containing Antimicrobials
- ⦿ Data base on Veterinary Medicinal Products
- ⦿ Data on number of animals in the country

Database Fields

- ◉ VMP Name
- ◉ MAH name
- ◉ Id Sale package
- ◉ Sale package description
- ◉ Number of sold units
- ◉ Active ingredient
- ◉ Quantity of active expressed in mass of the active entity of the molecule.
- ◉ Conversion factor IU/g for some Active ingredients
- ◉ Pharmaceutical form
- ◉ Route of administration
- ◉ Target Species
- ◉ Posology mg/Kg
- ◉ Treatment duration

What are the ressources needed?

- One staff (statistician) half time

Outputs?

- Tons of Antimicrobials
- Tons of Antimicrobials/ potential Body weight treated
- Number of treatments
- DDD, DDA, DDA kg ...
- Be careful with regards significance of figures!!!

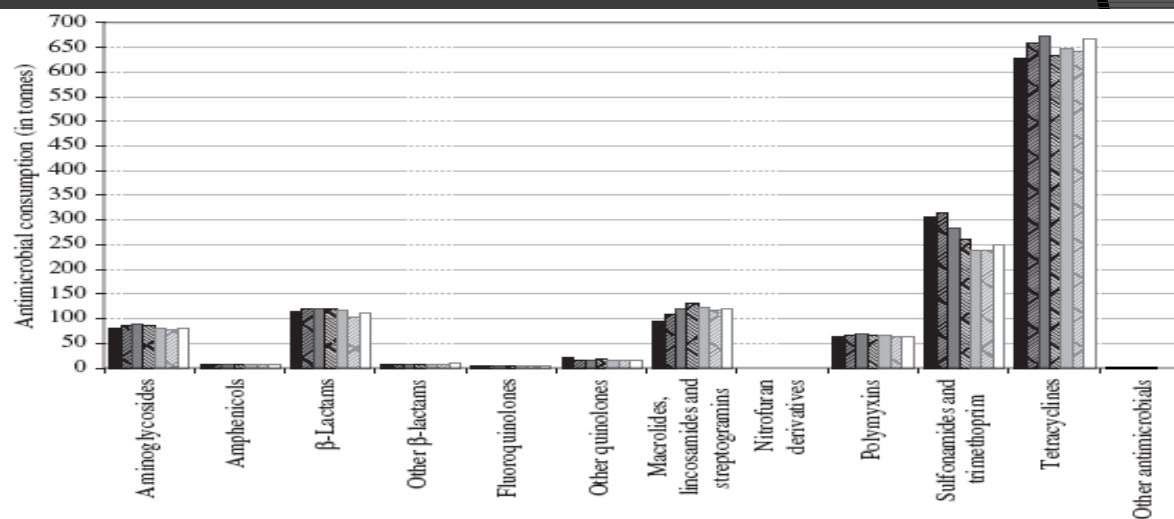
Example: 2007 parenteral Fluoroquinolones

1,7% of Total weight Active by injectable route
but

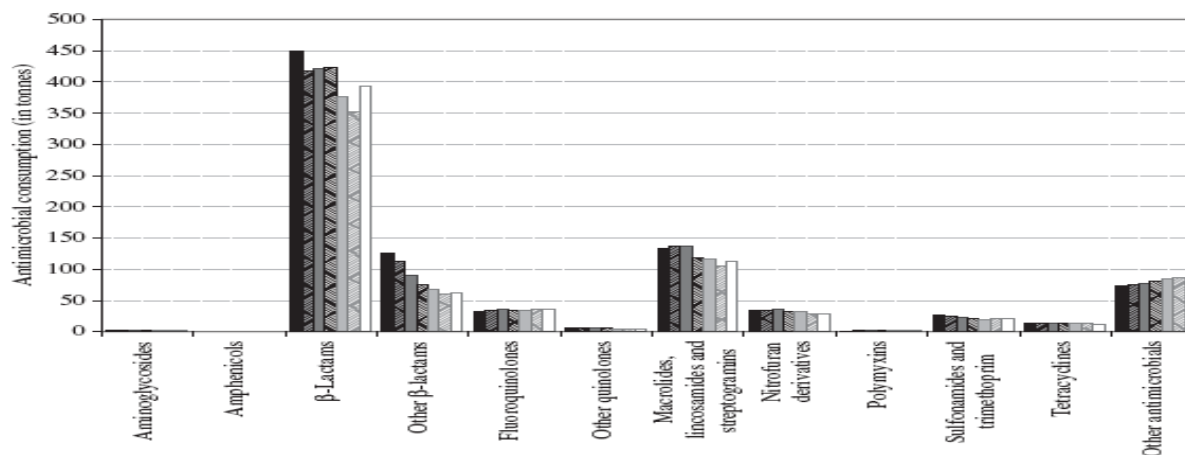
Outputs

- 2007: 1349 tonnes used in veterinary medicine

Antimicrobials
animals



Antimicrobials
humans



Outputs

Table 2. Antimicrobial consumption and biomasses estimated in human and animal populations in France, from 1999 to 2005

	Amount of antimicrobial drugs sold (tonnes)		Population body mass (tonnes)		Antimicrobials sold related to biomass (mg/kg of live weight)	
	human	veterinary	humans	animals	human	veterinary
1999	896.20	1316.31	3 597 843	17 122 220	249.1	76.9
2000	861.08	1386.22	3 634 603	17 410 934	236.9	79.6
2001	845.18	1380.31	3 671 731	17 864 462	230.2	77.3
2002	809.44	1331.53	3 709 154	17 268 049	218.2	77.1
2003	755.90	1304.76	3 747 650	16 722 083	201.7	78.0
2004	716.24	1273.14	3 781 175	15 966 824	189.4	79.7
2005	759.67	1320.10	3 810 215	15 795 105	199.4	83.6

Repartition by species

- Difficult as a VMP can be authorised for different species.
- Different methods used ...
- Aim has a good estimate.

Example Macrolides

			Method 1	Method 2	Method 3
	%Min	%Max	Extrapolation	Proportional	Bayesian
Bovine	0,44%	33,74%	18,07%	12,40%	17,63%
Porcine	43,29%	93,76%	50,21%	63,83%	65,14%
Poultry	1,05%	43,79%	23,45%	18,93%	11,69%

Species issue

- ◉ What level of accuracy is needed?
 - For exposure assessment , a 10 % difference in the repartition, does it matter?
- ◉ As the calculation method is applied to all results (all years), not so important to have exact repartition.
 - Important to be able to see evolutions

Picture

Evolutions

Example evolution

<i>Poultry Fluoroquinolones</i>	<i>2005</i>	<i>2006</i>	<i>2007</i>
<i>Number of treatments of 1 kg</i>	<i>31 651 800</i>	<i>34 382 800</i>	<i>38 513 800</i>
<i>Animal Population tonnes (10^3 kg)</i>	<i>2 292 500</i>	<i>1 904 546</i>	<i>1 986 391</i>
<i>% de Body weight treated</i>	<i>1,38%</i>	<i>1,81%</i>	<i>1,94%</i>

Conclusion

Simple, cost effective,
system that fits to the
needs...

Thank you
for your attention