

POLLUTED SITES IN FRANCE

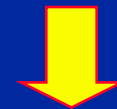
- TOUR DE TABLE -



NATO/CCMS
CARDIFF
24-27/05/2004



SOME DATA ABOUT FRENCH SITUATION



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POLLUTED SITES IN FRANCE

- TOUR DE TABLE -



Historical inventories (01/02/2004)

➡ **54 (+25 in 2004) out of 99 departments**

➡ **108 527 former industrial sites**

3735 inventoried polluted sites (29/01/2004)

➡ **1578 treated with use restrictions**

➡ **396 treated without use restrictions**

➡ **361 with a programmed SRA**

➡ **1460 under evaluation or where remedial works are still underway**

POLLUTED SITES IN FRANCE

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A study on 2287 polluted sites

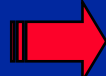
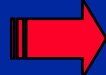
- ⇒ **54.92 % groundwater**
- ⇒ **29.69 % without impact**
- ⇒ **10.54 % water and sediments**
- ⇒ **1.79 % odours**
- ⇒ **0.79 % vegetables**
- ⇒ **0.09 % human health risk**
- ⇒ **2.06 % water catchments closed**

Main pollutants (2545 polluted sites)

- ⇒ **37.88 % HC**
- ⇒ **15.72 % PAH**
- ⇒ **15.39 % Pb**
- ⇒ **10.04 % Zn**
- ⇒ **13.04 % Cr**
- ⇒ **12.29 % Solvents**
- ⇒ **12.16 % Cu**
- ⇒ **10.07 % As**
- ⇒ **8.41 % Ni**
- ⇒ **5.49 % Cd**

POLLUTED SITES IN FRANCE

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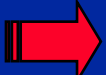
Market in 2002 (+ 22% /2001)  **40 % studies** | **300 M euros**
 **60 % works**

Studies costs are increasing :

- du to regulation and to avoid appeal after results and/or works
- to better size works and use the best available technology

2003 : + 13 %

2004 : + 10 %

But :  **The works market could slow down because remedial objectives depend on the land use allocated to the site.**

POLLUTED SITES IN FRANCE

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CONTAMINATED SOILS MAIN TREATMENTS

➡ LANDFILL :

- HW LANDFILL : 110 to 120 euros per ton**
- LANDFILL INTERMEDIATE COVERS : 60 euros per ton**
- MSW LANDFILL : 60 euros per ton**

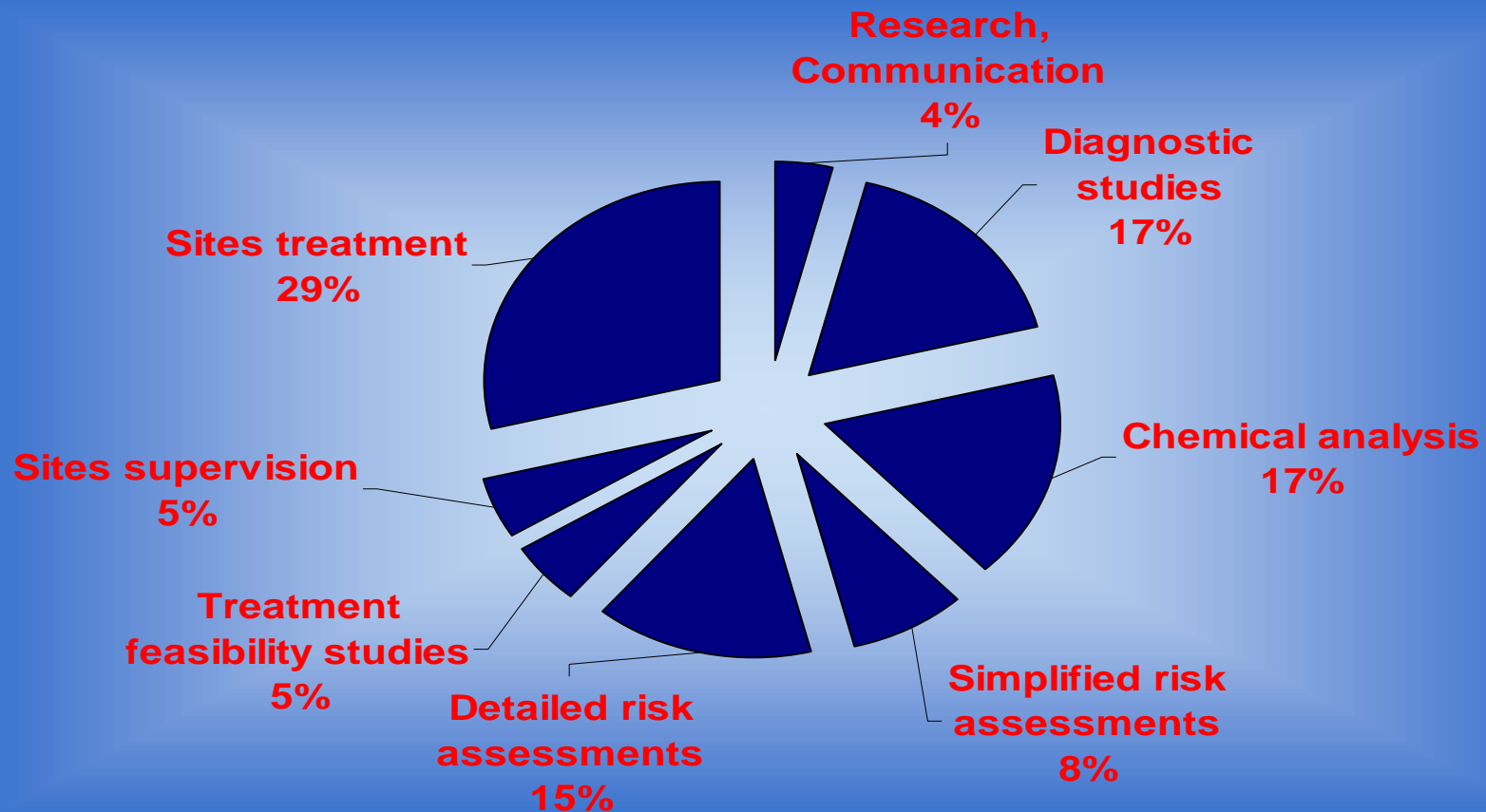
➡ BIOPILES :

- 35 to 70 euros per ton**

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Cleaning up and engineering companies turnover in 2000



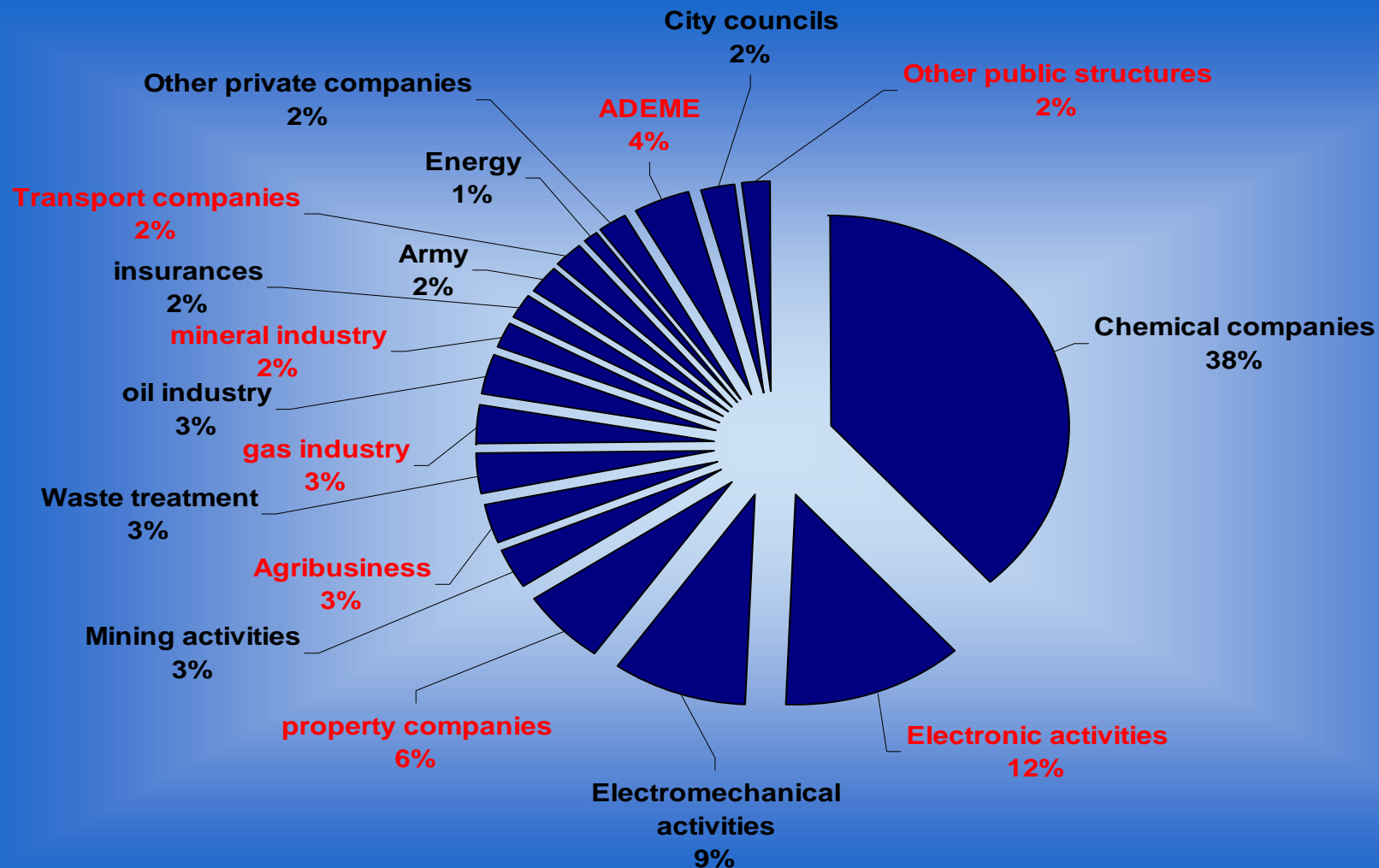
French Ministry of Environment (2002)

POLLUTED SITES IN FRANCE

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Operating costs in 2000 for contaminated sites



French Ministry of Environment (2002)

POLLUTED SITES IN FRANCE

- TOUR DE TABLE -



POLLUTED SITES ADEME's FINANCING IN 2003



Contracting authority for 60 orphan polluted sites

 **11 000 000 €**

Research and development

 **1 500 000 €**

Inventories, communication...

 **700 000 €**

POLLUTED SITES IN FRANCE

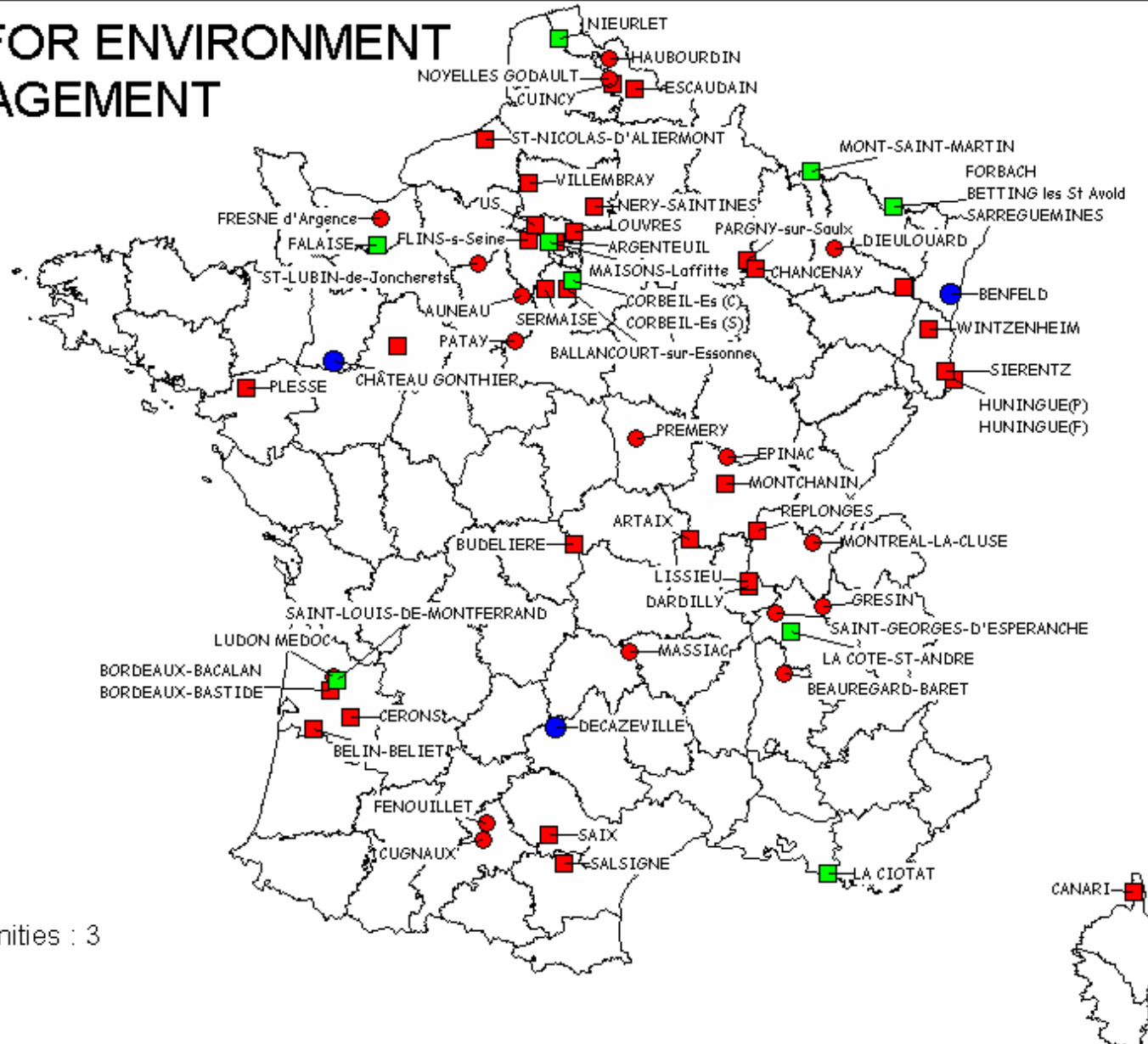
- TOUR DE TABLE -



FRENCH AGENCY FOR ENVIRONMENT
AND ENERGY MANAGEMENT

ADEME

2003 report an orphan
contaminated sites
management



- New studies/works : 17
- Ongoing studies/works : 33
- Ended studies/works : 10
- ADEME subsidies to local communities : 3

ADEME/DSSP/DM le 05/03/04

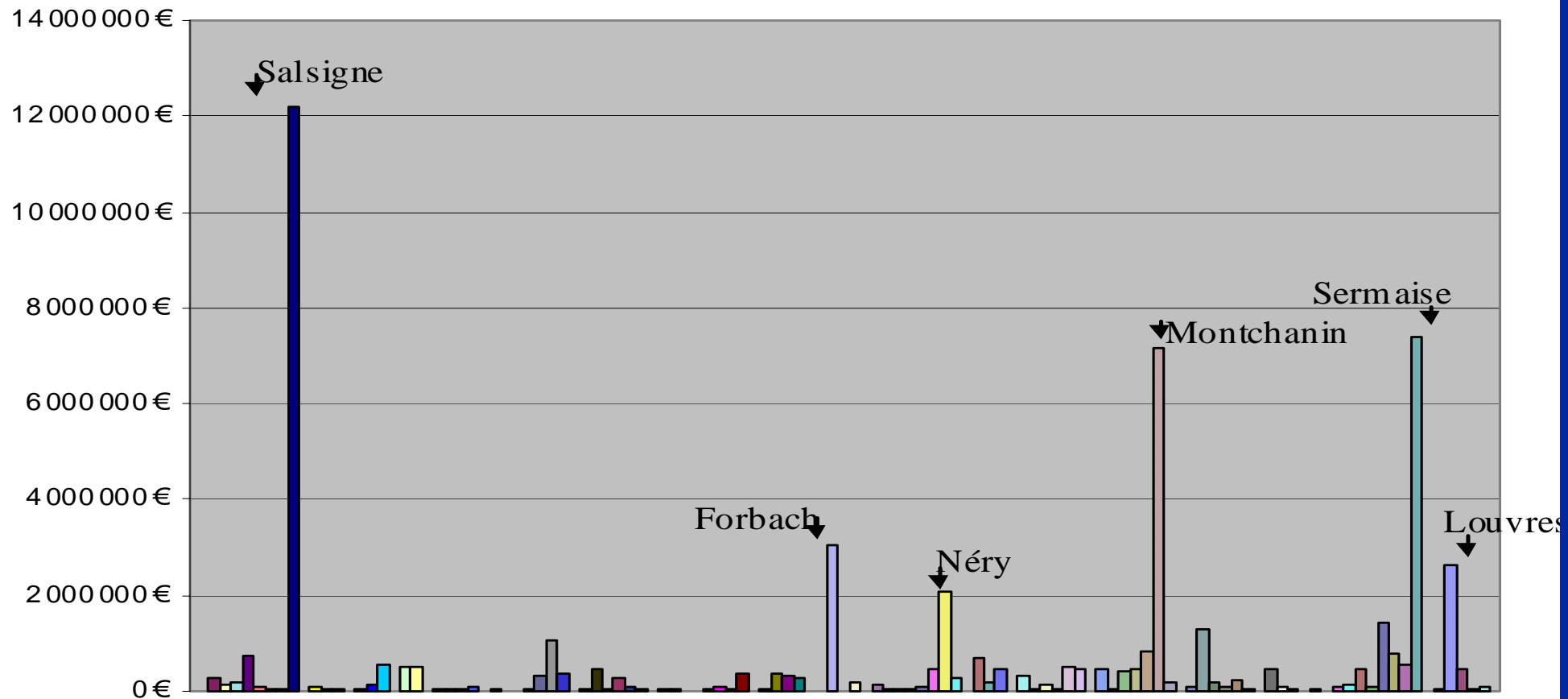
POLLUTED SITES IN FRANCE

- TOUR DE TABLE -



115 ORPHAN CONTAMINATED SITES

Operating cost : 56 097 200 € (funds of government) from July 1996 to May 2004

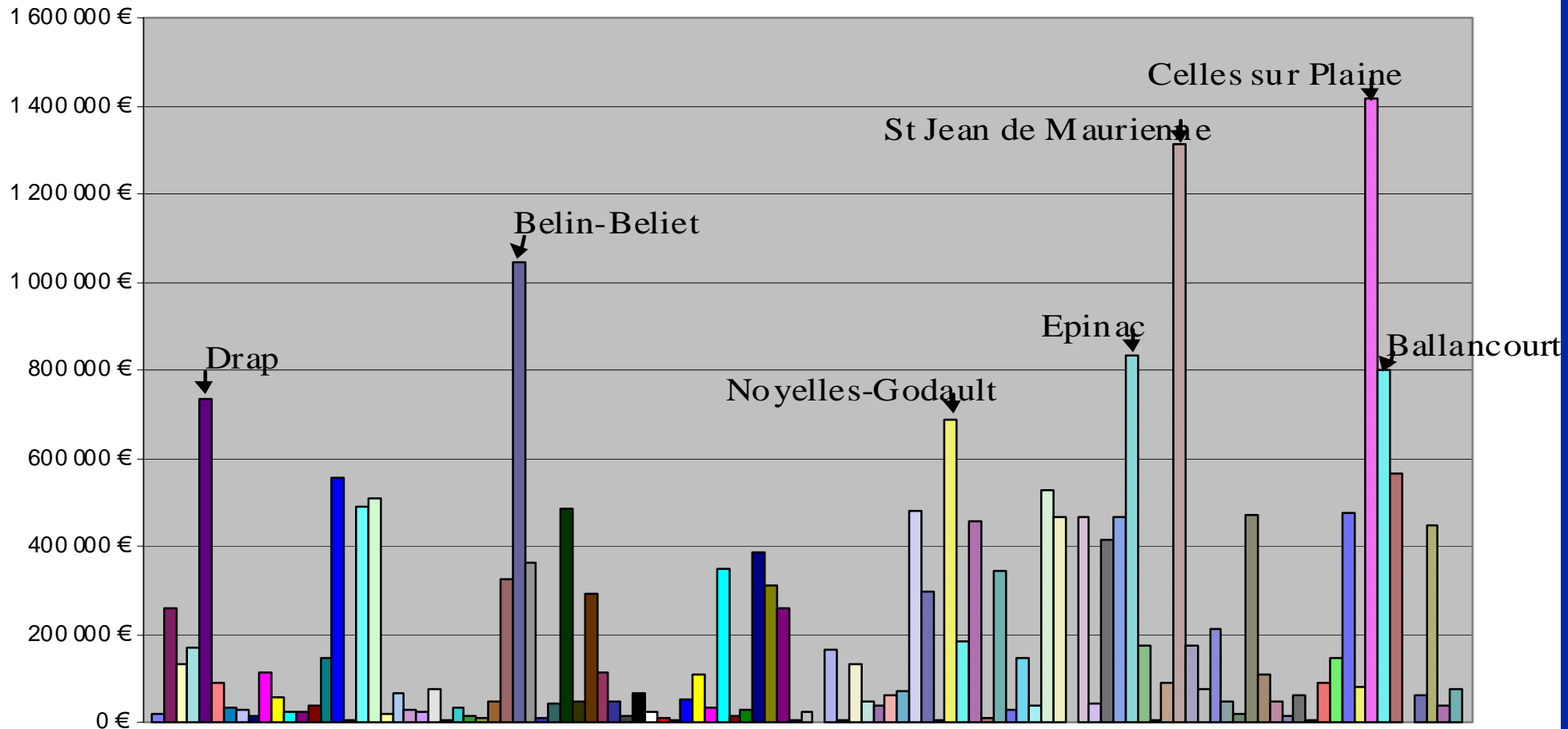


POLLUTED SITES IN FRANCE

- TOUR DE TABLE -



109 ORPHAN CONTAMINATED SITES < 1 500 000 €
 Operating cost : 21 614 600 € (funds of government) from July 1996 to May 2004



REHABILITATION OF OLD LANDFILLS IN FRANCE - TOUR DE TABLE -



... IN FRANCE , TOO !!!



REHABILITATION OF OLD LANDFILLS IN FRANCE - TOUR DE TABLE -



2002 MUNICIPAL WASTE FLOW IN FRANCE

- Household Waste : 24 Mt

- Other Municipal Waste : 22 Mt

= 46 Mt in 1331 treatment plants

REHABILITATION OF OLD LANDFILLS IN FRANCE - TOUR DE TABLE -



WHICH TREATMENT FOR MSW IN FRANCE

Biological Treatments (322 plants) : **4.17 Mt**

Material Recycling (296 plants) : **5.23 Mt**

Incineration with Energy Recovery (116 plants) : **11.80 Mt**

Incineration without Energy Recovery (52 plants) : **0.78 Mt**

Landfilling (classe 2 : 361 landfills) : **23.68 Mt**

(average age : 19 years)

REHABILITATION OF OLD LANDFILLS IN FRANCE - TOUR DE TABLE -



NUMBER OF LANDFILLS IN FRANCE

361 Municipal Waste Landfills > 3000 t/yr

= (20 % of the total, 80 % in weight)

208 of them > 20 000 t/yr,

70 of them > 100 000 t/yr (3.5 % of the total, 60% in weight)

6 000 to 9 000 Municipal Waste Landfills < 3000 t/yr

(80 % of the total, but 2% in weight)

only 2 000 have an administrative permit !!!

REHABILITATION OF OLD LANDFILLS IN FRANCE - TOUR DE TABLE -



LANDFILLING ECONOMIC DATA FOR FRANCE

Price per ton (2002) : 45 to 100 euros (average : 70 euros)

Market : 1 310 million euros

Taxe per ton : 9.5 euros (7.5 if ISO 14 000 certified)

(but 19 euros if illegal landfill !!!)

REHABILITATION OF OLD LANDFILLS IN FRANCE - TOUR DE TABLE -



FRENCH POLICY FOR OLD LANDFILLS

Letter from the Minister of Environment to the Department Prefects (24 February 2004) (reference : law 13 July 1992)

« 01 July 2002 : only landfilling of non recyclable waste and non organic waste : definition of ULTIME WASTE»

for 15 April 2004, national list of :

- all unauthorized landfills receiving waste
- all unauthorized and closed landfills

and stop landfilling in such landfills before 31 December 2004

REHABILITATION OF OLD LANDFILLS IN FRANCE - TOUR DE TABLE -



1 - INVENTORIES IN EACH DEPARTMENT -

2 - RISK ASSESSMENT STUDIES -

(NEARLY SAME APPROACH THAN FOR POLLUTED SITES BUT SIMPLIFIED IF NECESSARY)

3 - CLASSIFICATION ACCORDING

TO THE RISK -



A REHABILITATION PLAN FOR EACH DEPARTMENT

REHABILITATION OF OLD LANDFILLS IN FRANCE - TOUR DE TABLE -

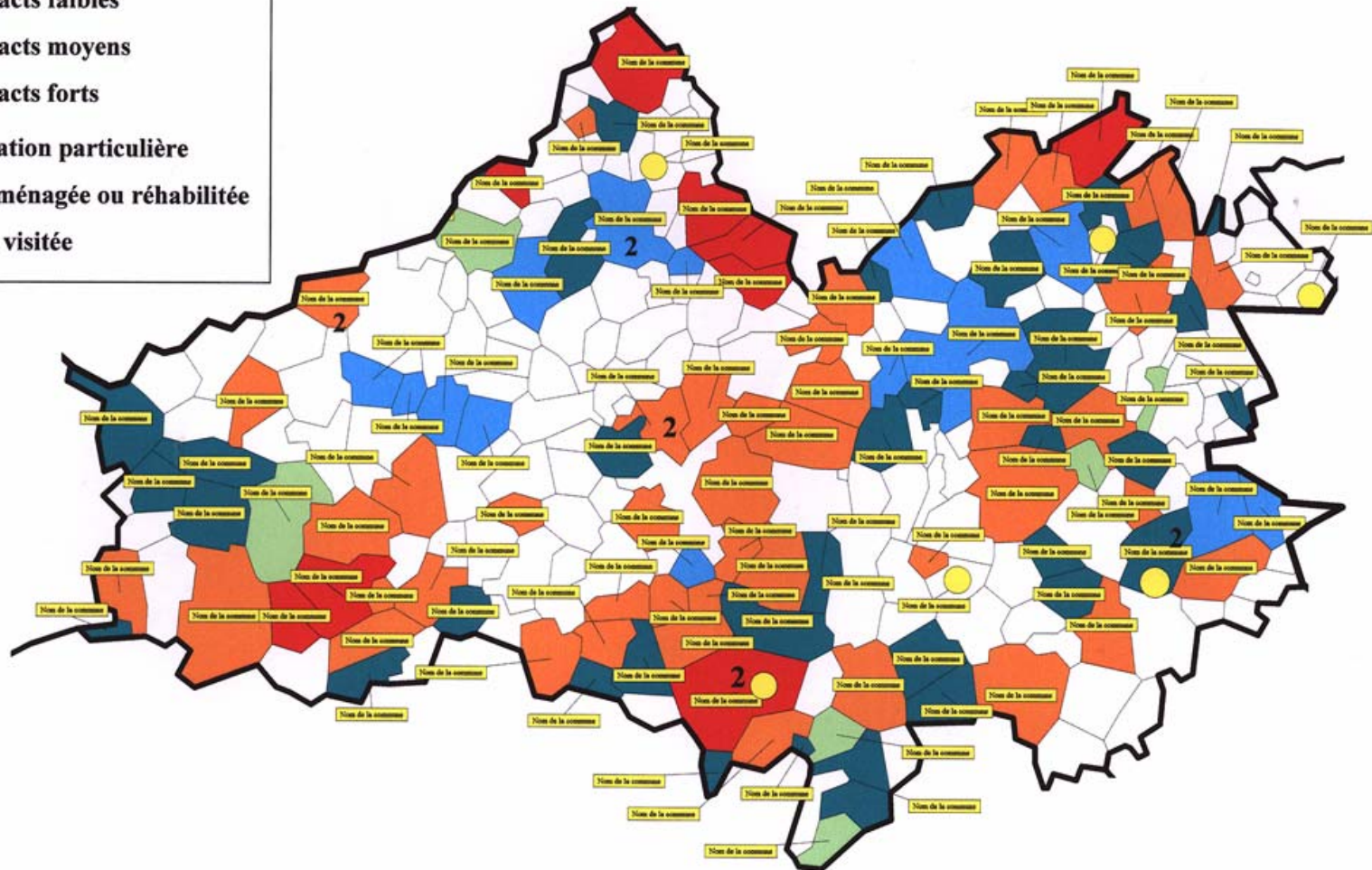
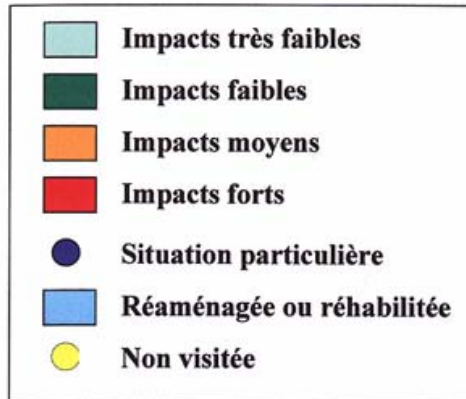


RISK CALCULATION SHEET

Commune de Déchargée de			
Critères	Note maximale	Coefficient	Note globale du critère
<i>Evaluation des risques pour les eaux souterraines</i>			
· substratum	3	3	9
· eaux souterraines	1	3	3
· volume du dépôt	2	2	4
· âge du dépôt	5	2	10
· nature du dépôt	4	2	8
			34
<i>Evaluation des risques pour les eaux de surface</i>			
· substratum	3	2	6
· eaux de surface	5	4	20
· volume du dépôt	2	2	4
· âge du dépôt	5	2	10
· nature du dépôt	4	2	8
			48
<i>Evaluation des risques pour les rivières</i>			
· habitations	4	6	24
· volume du dépôt	2	2	4
· âge du dépôt	5	2	10
· nature du dépôt	4	2	8
			46
<i>Evaluation des risques pour les milieux naturels</i>			
· paysages temlieux	5	6	30
· volume du dépôt	2	2	4
· âge du dépôt	5	2	10
· nature du dépôt	4	2	8
			52
Note finale : 344			

REHABILITATION OF OLD LANDFILLS IN FRANCE - TOUR DE TABLE -

REHABILITATION PRIORITIES MAP



REHABILITATION OF OLD LANDFILLS IN FRANCE - TOUR DE TABLE -



IT 'S THE LAST NATO/CCMS MEETING FOR ME
SINCE MIDDLE OF APRIL, I HAVE A NEW POSITION IN ADEME

**HEAD OF
WASTE DATA AND PLANNING DEPARTMENT**

THANKS TO USEPA PEOPLE WHO MAKE A SIZEABLE WORK
THANKS TO PEOPLE ORGANISING IN EACH COUNTRY
THANKS TO PEOPLE PARTICIPATING WITH HIGH SCIENTIFIC
VALUE

