



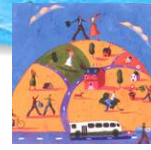
## *Tour de table presentation*

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**Contaminated sites department**  
**ADEME - FRANCE**



## ADEME's activities in the field of contaminated sites and soils

- **Steering and funding research and innovation (€ 1,3M/year)**
- **Conducting operations to secure orphaned contaminated sites**
  - 50/55 sites in operation every year
  - 10 new sites opened every year
  - € 10M/year
- **Providing financial aid for decision making**
  - 30 environmental audits or feasibility studies / year
  - Targeted to local authorities
- **Facilitating re-use of industrial brownfields**
- **Participating in national, European and international exchanges**
  - ERA-NET SNOWMAN
  - EURODEMO...



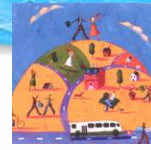
# The contaminated sites management policy : « a tough adolescence »

- Policy set up in the 90's in the frame of the hazardous facilities regulation
- Main goals
  - Inventory of abandoned and active industrial sites
  - Evaluation / prescribed methodology
  - Establishment of priorities
  - Treatment
- No generic values, site specific approach



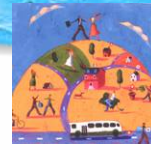
# The contaminated sites management policy : two periods

- **1994/1996 : simplified risk assessments, a scoring system**
  - 1 : site requires further investigation and DRA
  - 2 : site requires monitoring and possibly restrictions of land use
  - 3 : site may be used for a specified purpose without treatment or control measure
- **1999 : detailed risk assessments, the basis for determining the remediation objectives related to the land use**
  - Quantification of risks for human health and water resources
  - Specific tools for ecosystems risk assessment were planned...



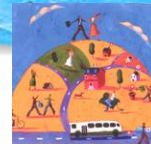
## Lessons learned : +ve

- Relevancy of the management of contaminated sites according to the land-use for a site and the risk base management
- High importance of environmental audits and mechanisms understanding  
(conceptual layout : source – transfer – target)
- Interdependence of sources treatment and monitoring
- Necessity for keeping in mind the industrial history



## Lessons learned : -ve

- **Necessity for moving out of the inventory system**
  - 180 000 sites in the database (former industrial activity)
  - The whole country should be covered soon
  
- **Necessity for breaking away from the linear system**
  - Preliminary site investigations;
  - Simplified risk assessment (SRA);
  - In-depth audit;
  - Detailed risk analysis (DRA).



## Lessons learned : -ve Limits of the Simplified Risk Assessments

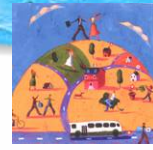
- What knowledge have we gained ?
- What decision could we make ?
- Incorrect use of the « Fixed impact values » based on highly conservative scenarii as remediation objectives
- Necessity to take into account :
  - Inhalation exposure,
  - Comparison with existing statutory values (outdoor air quality, food, drinking water),
  - geochemical background



## Lessons learned : -ve Limits of the Detailed Risk Assessments

- Open tool approach : the selected model and the outcomes were often discussed by the actors involved
- Modelling was sometimes inconsistent with the real uses of the milieus
- Soil ingestion is not the main exposure pathway, inhalation is !
- In too many cases DRA lead to justify to maintain contamination sources
- Comparison of the treatment techniques and evaluation of their costs were often careless



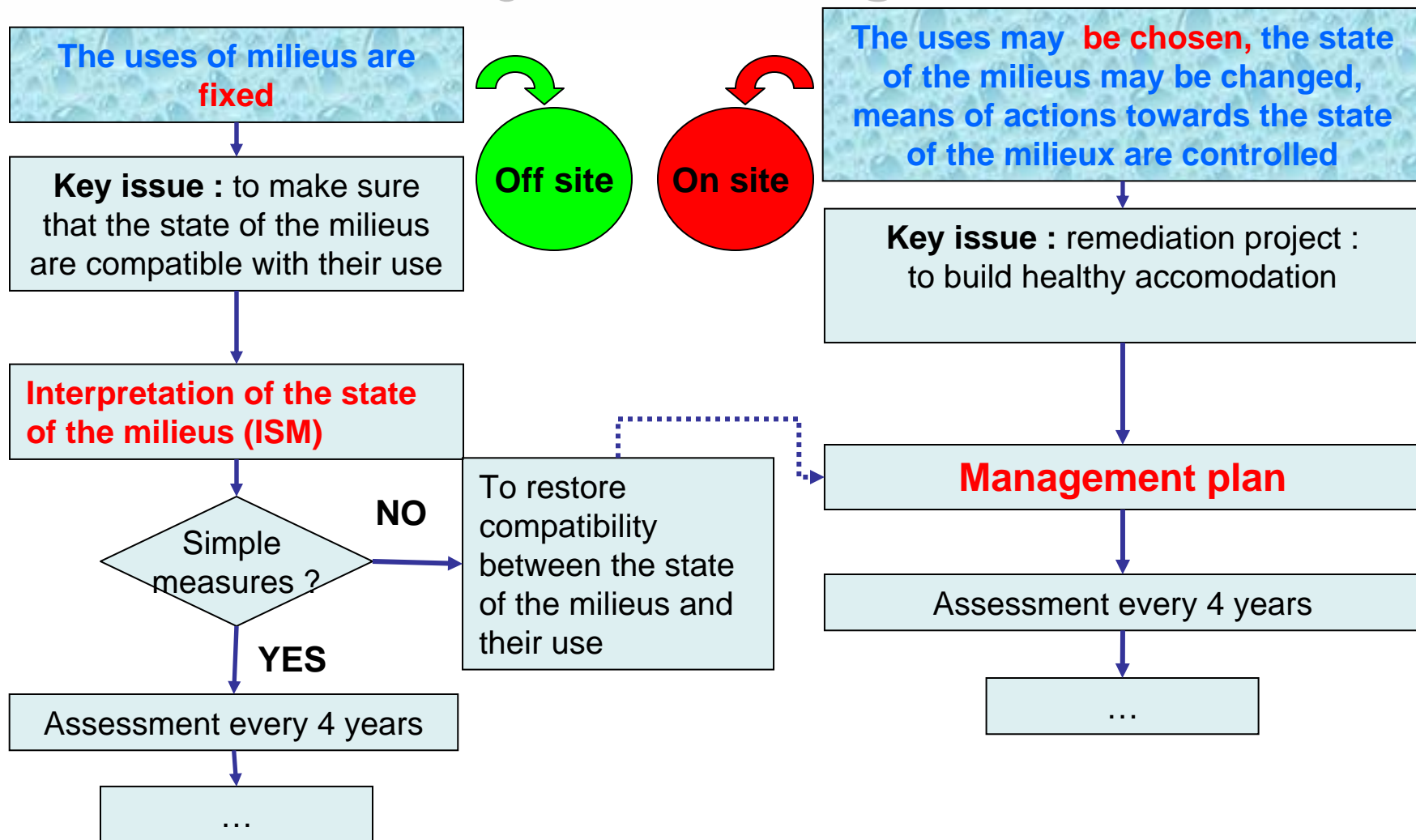


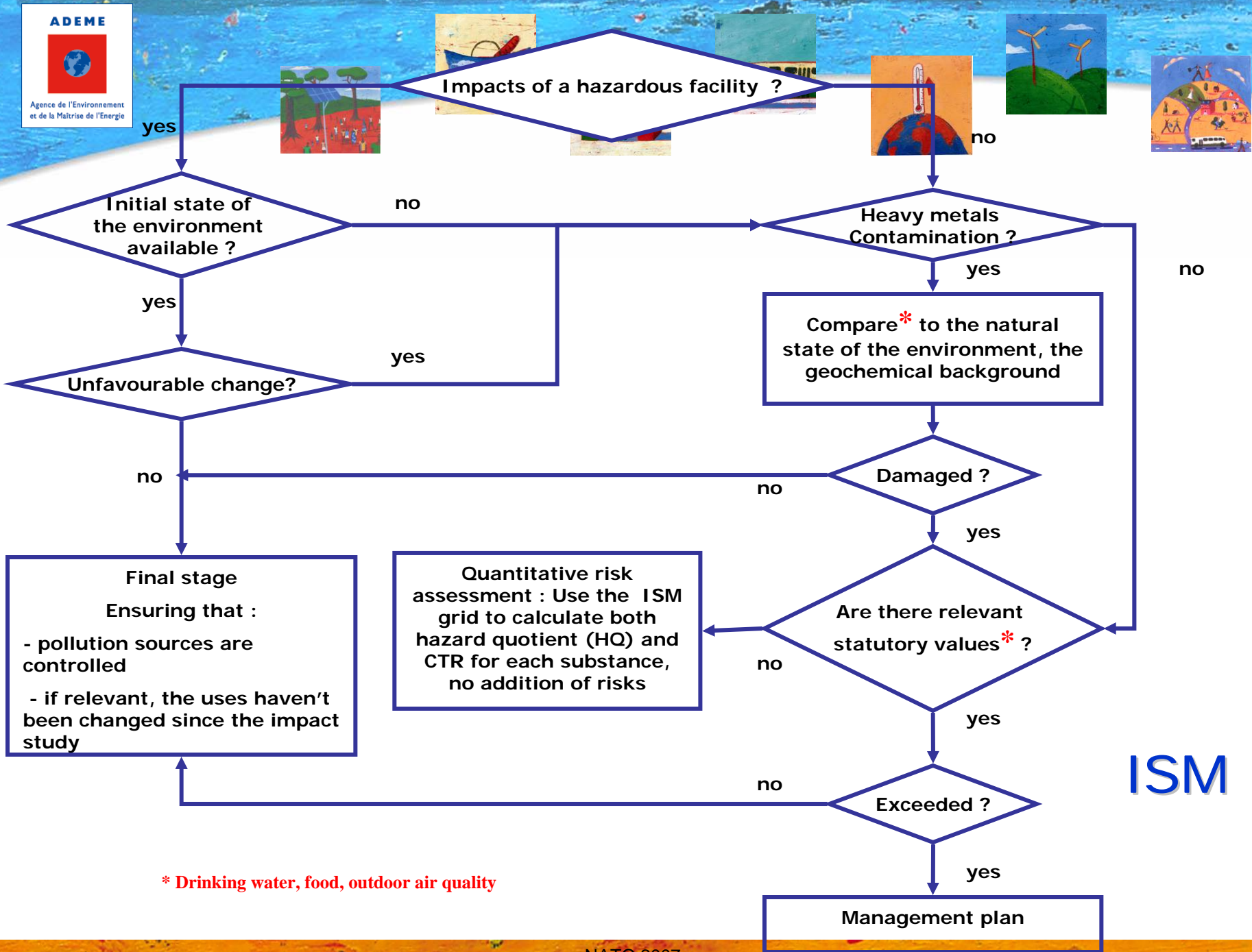
# New policy 8 Feb 2007 : different ways of management in different situations

- Former industrial activities, a common legacy : **site management according to land-use**
  - Pollution sources should be investigated and treated taking into account treatment costs.
  - Residual pollution might remain when contaminant transfers are brought under control and we must remember where it is.
  - A global environmental audit should be carried out.
- The future : **prevention of any effect on the environment**
  - Applying all the hazardous facilities regulations, including environmental monitoring;
  - If prevention fails : we need to repair the damages and to restore the environment to its original condition.



# Two ways of management





\* Drinking water, food, outdoor air quality

**ISM**



## Specific management of the results of the ISM calculation grid



**DQ < 0,2  
CTR < 10<sup>-6</sup>**

**0.2 < DQ < 5    10<sup>-6</sup> < CTR < 10<sup>-4</sup>  
Grey area**

**DQ > 5  
CTR > 10<sup>-4</sup>**

yes

Simple measures  
solve the problem ?

no

yes

Compiled experiences  
solve the problem ?

no

Quantitative sanitary  
risk assessment

Satisfactory  
results ?

no

yes

no

# ISM

**Final stage**

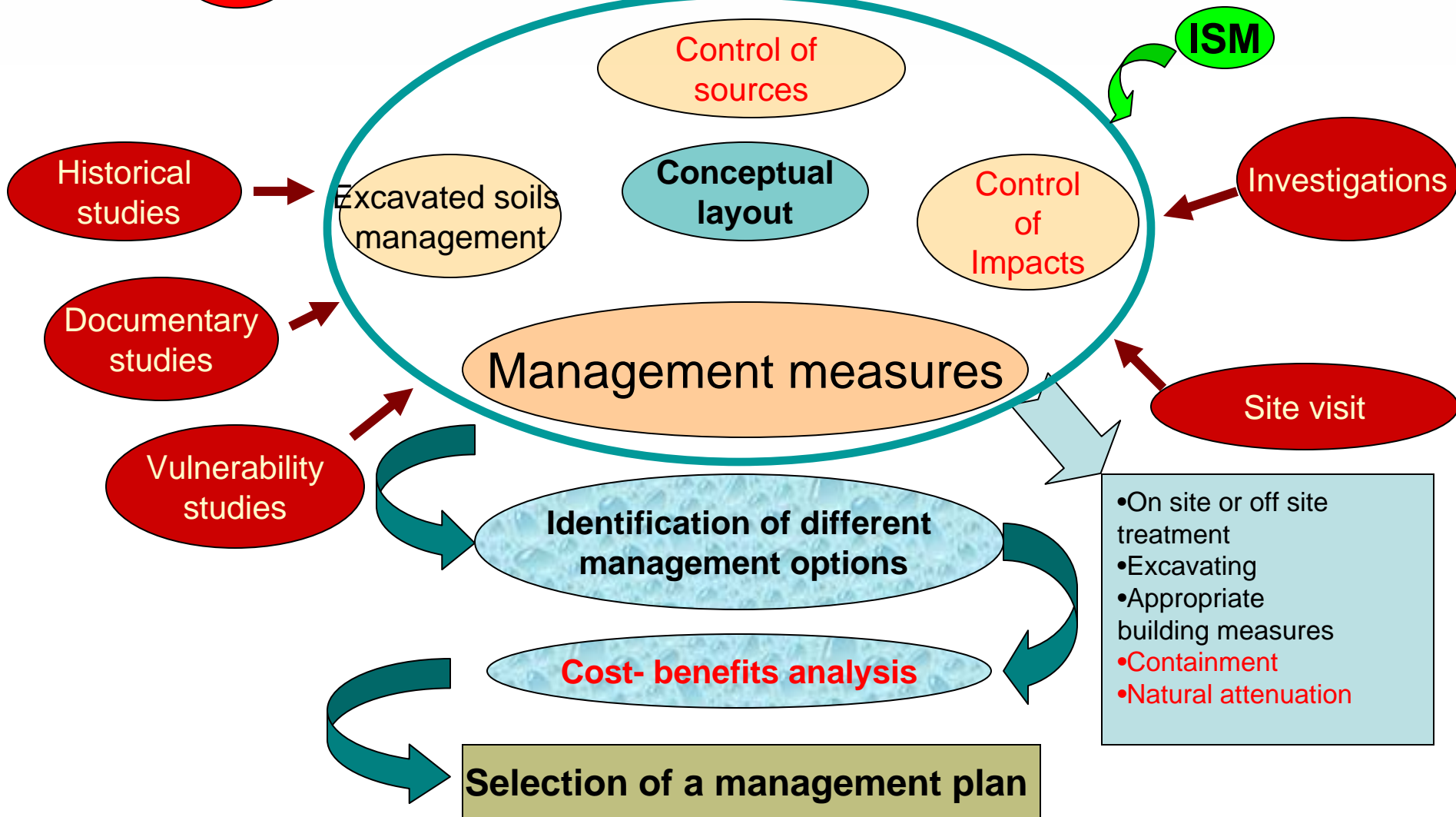
- ensuring that the pollution sources are controlled
- if necessary, limiting uses, monitoring and setting up assessment every 4 years

**Management plan to restore the compatibility between the use and the state of the milieus and /or to control the source**



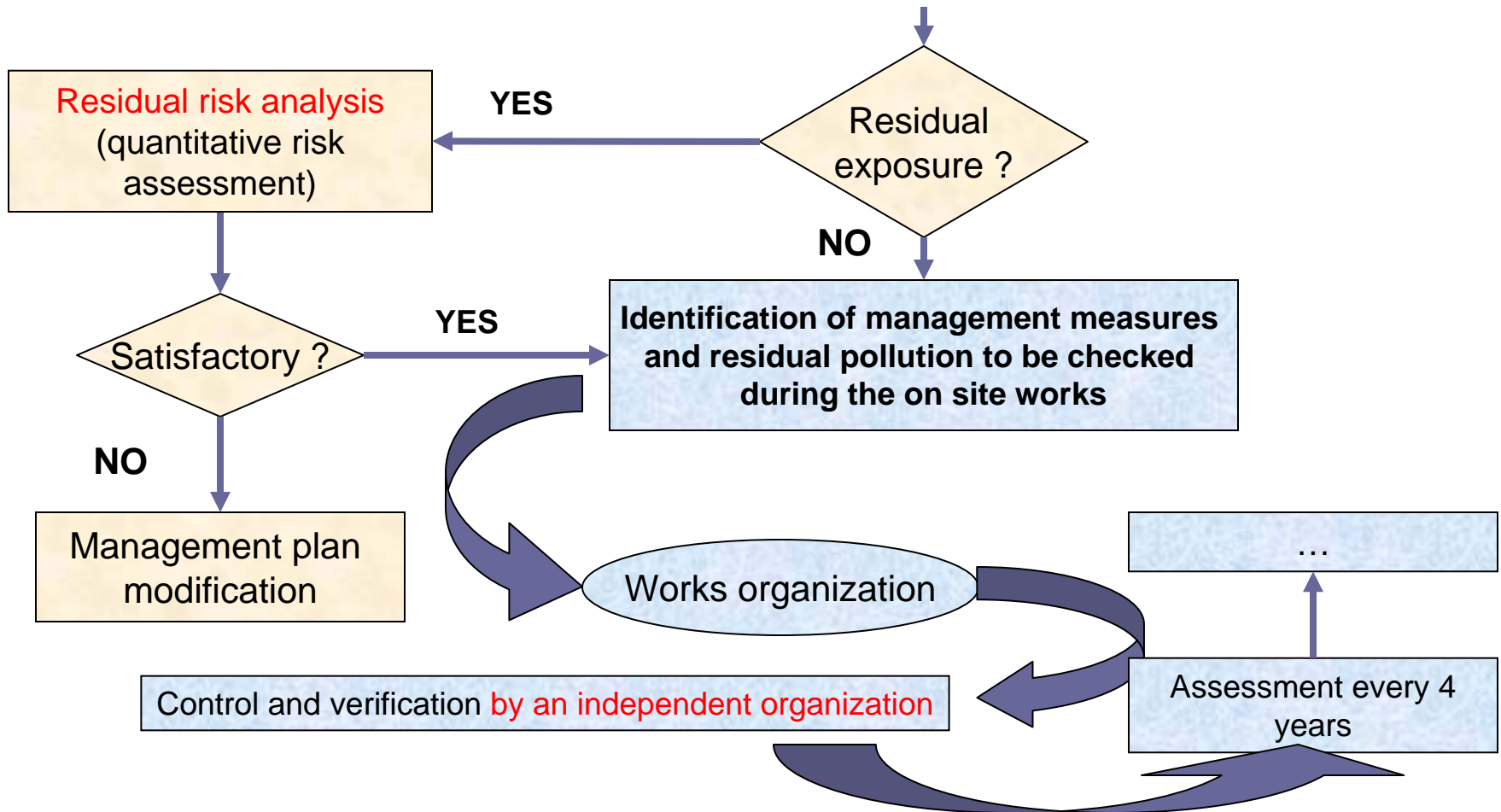
On site

# Management plan





# Selected management plan





## Other on going topics

- **Certification of consultants and contractors**
- **Management of excavated soils**
  - Conditionally reuse of excavated soils with low contamination
  - Specific limit values
- **Development of financial guarantees to avoid orphaned sites**
- **Integration of the contaminated sites management policy in town planning**