

# The problem of oiled seaweed : a pain for coastal municipalities



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Oiled seaweed



- Piles of beach cast seaweed : currents and winds push it onshore



.....and pellets of pollutant deposit on the seaweed



According to the type of deposit :



Sporadic oiling (tarballs / pellets)

# Recovery of oiled seaweed

- Recovery options :
  - Collect oiled materials by hand
  - Manual removal (for example using rakes and forks)  
Transfer of waste can be carried out by vehicles
  - Mechanical removal by specific vehicles  
(*mechanical rake, seaweed rake*)  
or non-specific vehicles  
(*road work vehicles*)



*Manual recovery using forks*



*Seaweed rake*



*Mechanical recovery of oiled seaweed using loader end truck*

# Recovery of oiled seaweed

- Difficulty encountered :
  - Selectivity depends on the technique used

⇒ *municipalities have to manage high quantities of more or less oiled seaweed, often mixed with high quantities of sand*



*Temporary storage of seaweed end sediment*

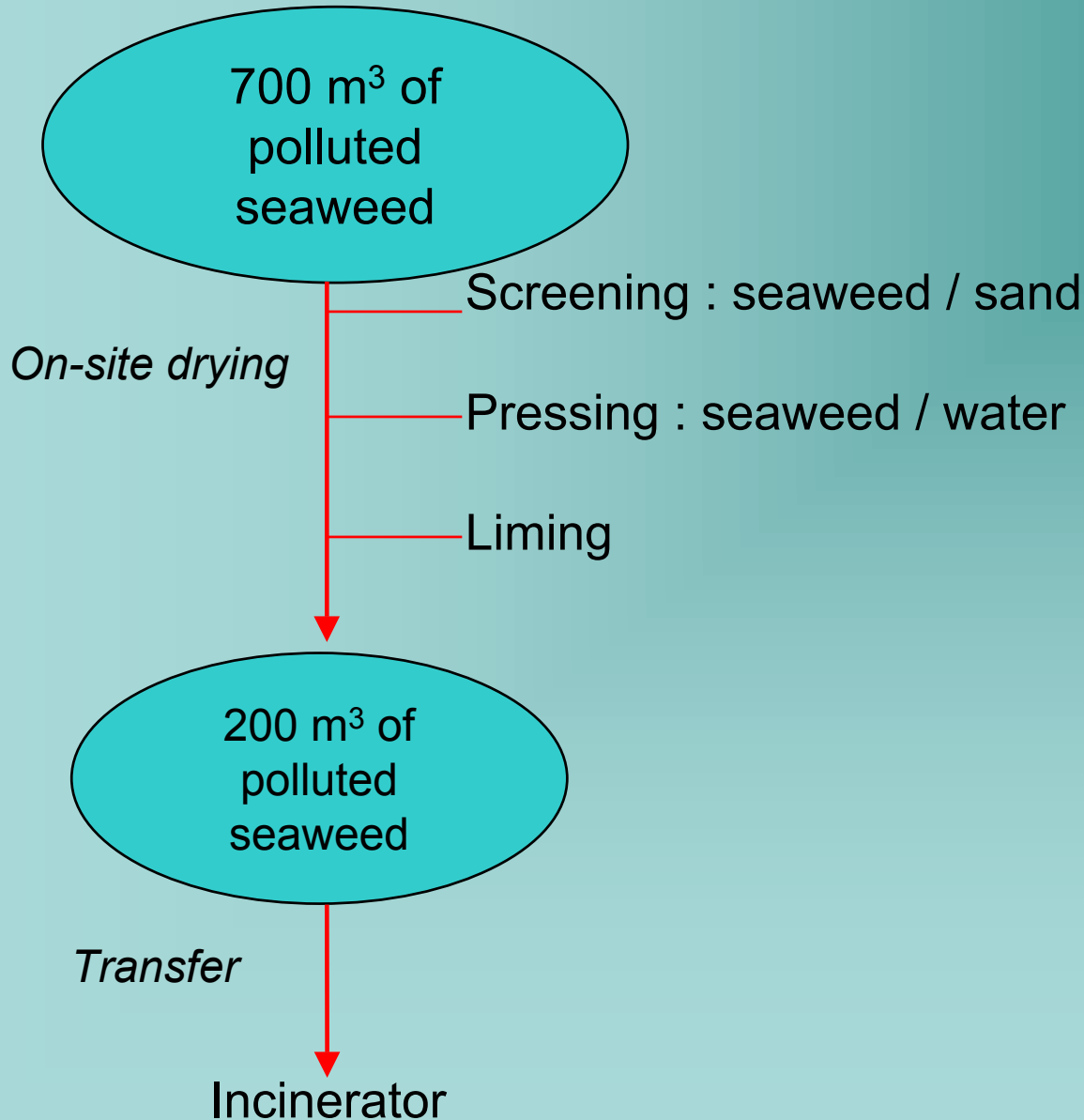
# Disposal options

## ***Prestige*** : oiled seaweed treatment options

	Treatment methods	Cost	Observations	
<b>Oiled seaweed</b>	Burial in landfill site		<b>IMPOSSIBLE</b>	
	Incineration	In the open air		<b>IMPOSSIBLE</b>
		Incinerators used for the disposal of domestic waste	150 to 180 € per ton (+ taxes)	Under conditions, to be discussed with the operators :  - <b>very lightly oiled seaweed, sand-free</b>  - <b>dry seaweed, sand-free</b>
		Industrial incinerators	380 € per ton (+ taxes)	Conditions :  - <b>seaweed “as they are”</b>
	Physical-chemical treatment Screening + liming + incineration	180 € per ton (+ taxes)	<b>On site (storage area)</b>	
	Bioremediation	125 € per ton (+ taxes)	Conditions :  - <b>only fresh and odourless seaweed</b>	

*Document edited by the Regional Direction of Industry, Research and Environment, in charge of the waste management in Brittany*

# Example of oiled seaweed treatment



## Exceptionally widespread pollution - ex : *Erika*

- Application of the Polmar Plan (Land) : financial means are provided by the Polmar fund (a budget line under the Ministry in charge of the Environment)

⇒ Municipalities ask and watch



## Medium-scale pollution - ex : *Prestige, Brittany*

- Expenses are normally incurred by municipalities, but the Polmar fund can provide financial means for exceptional expenses (without implementation of the Polmar Plan)

⇒ Municipalities have to organise - Technical supports and means can be supplied ; financial compensation partly possible (exceptional expenses).

Municipalities are “on the front line”.

## Small-scale pollution - ex : *Operational discharge*

- Municipalities take responsibility and pay for the clean-up

⇒ Do the municipalities have sufficient resources to deal with pollution ?

Risk : Polluted area = Payer

## Alternate option, in the case of lightly oiled seaweed : putting it back into the water

- It consists in :
  - when tide coefficients decrease, lightly oiled seaweed are put back into the water at ebb tide.  
This technique makes it possible to separate tarballs from the seaweed and to deposit them back on the beach.
  - Subsequently, collecting the tarballs by hand.

# Conclusions

☞ When allowed by circumstances and available time, anticipate on the arrival of oil on the shoreline : limit the volume of seaweed likely to be oiled by removing them from exposed areas

☞ Put emphasis on recovery selectivity

☞ Define potential storage sites

List final disposal methods / operators /sites

# Suggestions

☞ **Information of municipalities .....**

*... through a guide ?*

☞ **Training personnel .....**

*... specially dedicated courses at Cedre ?*

☞ **Organisation .....**

*... local “sub-Polmar” contingency plans ?*