

Handling of Dredged Material in the Netherlands

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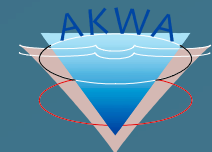
Civil Engineering Division

Dutch Ministry of Transport, Public Works and
Water Management



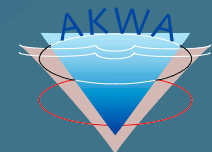
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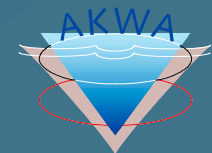
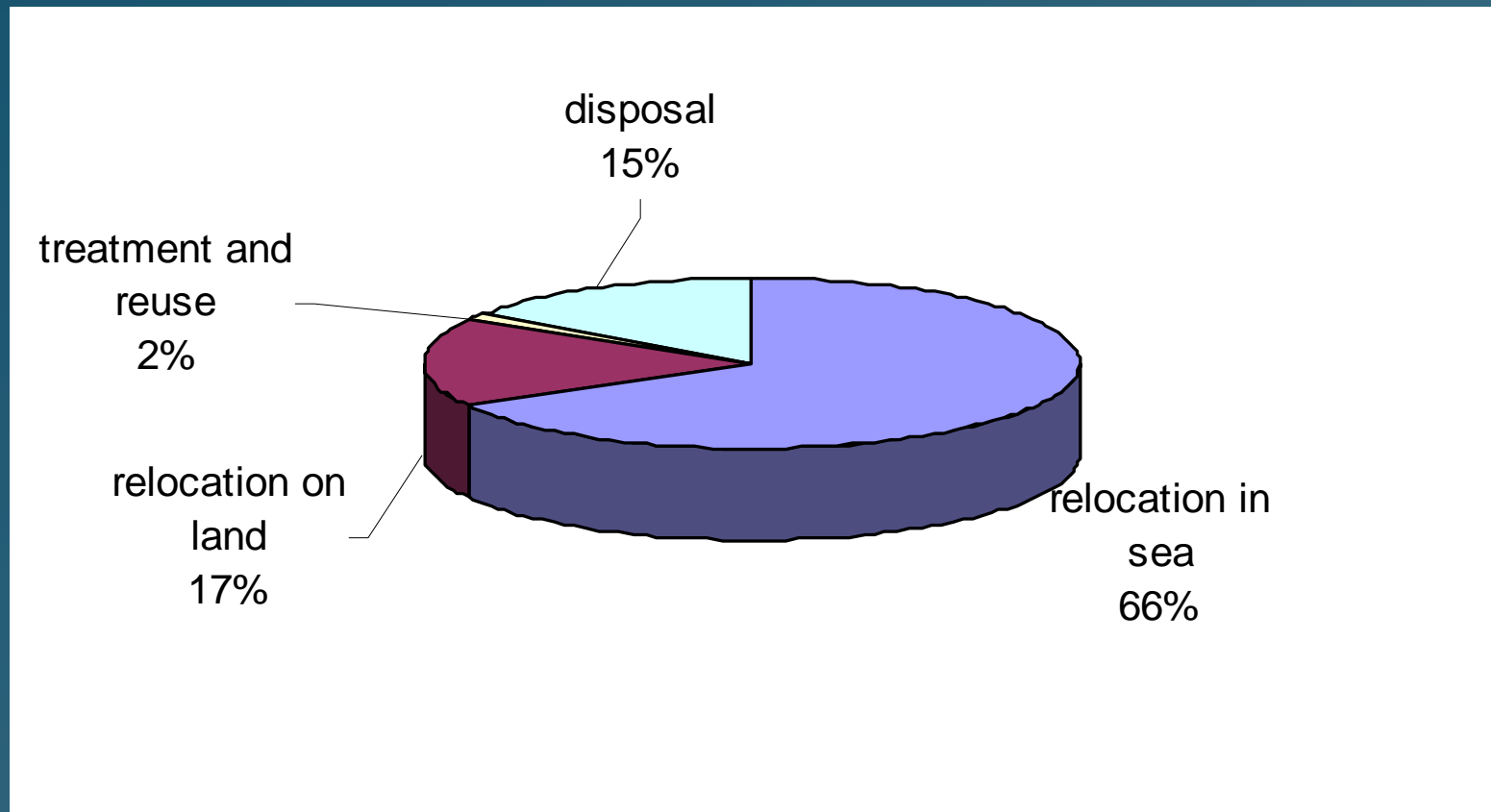


Introduction

- Frequent dredging necessary in delta area
- Reasons for dredging
 - Shipping
 - Water discharge
 - Environment
- Large amounts of DM 25-30 Mm³/yr
 - Mainly from maintenance dredging mainport Rotterdam



Present destinations

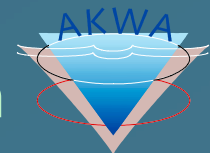


Problems with destinations for DM

- Relocation at sea (90%): environmental restraints
- Relocation on land (30%): lack of space and acceptance
- Treatment: expensive, small scale, no market for products
- New CDF's : Nimby

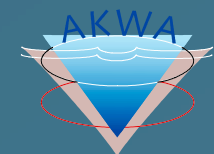
Destinations for DM become more scarce and more expensive

Largest problem DM from fresh waters especially in urban areas

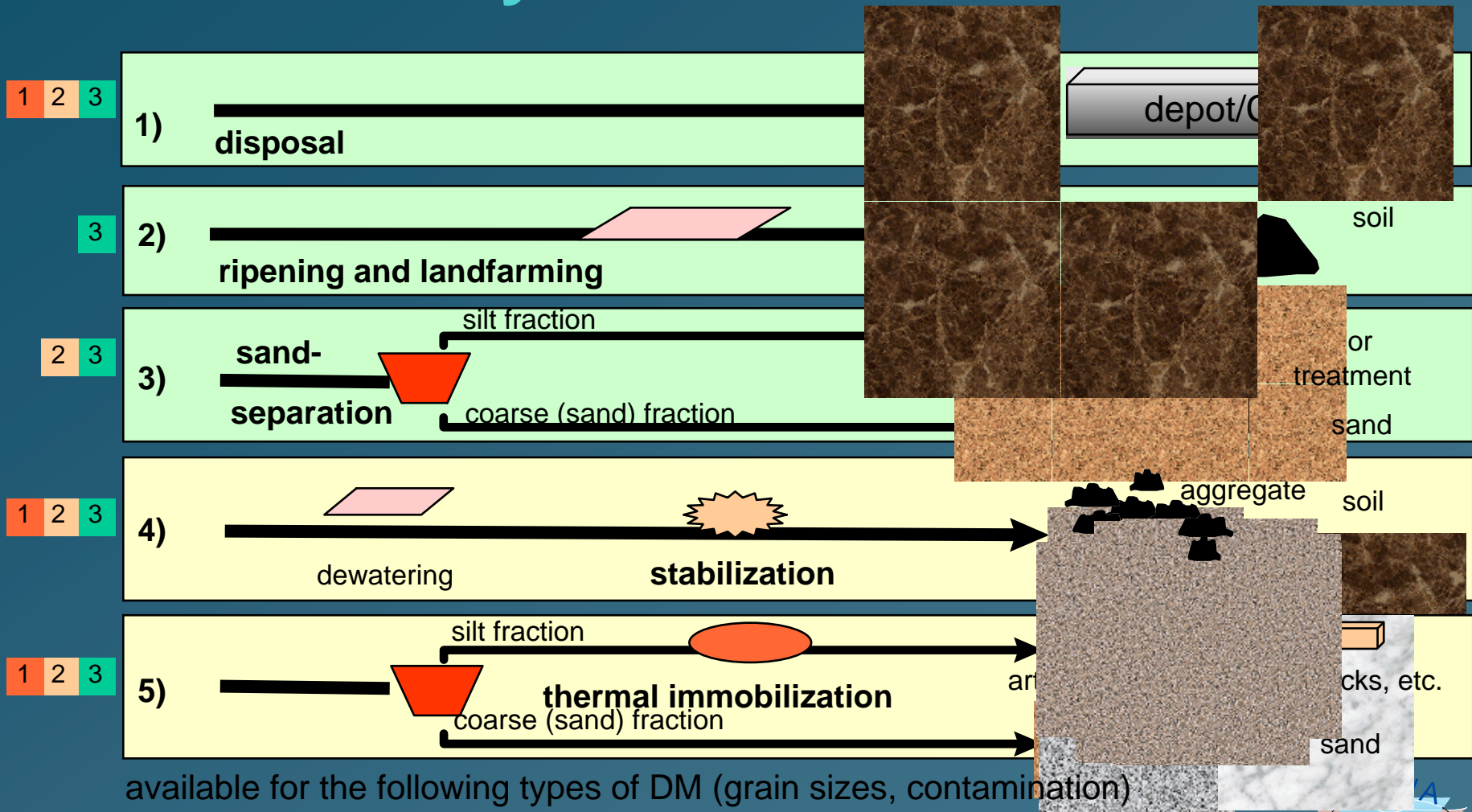




Ripening fields and sedimentation basins near CDF Slufter



Technically feasible treatment chains



available for the following types of DM (grain sizes, contamination)

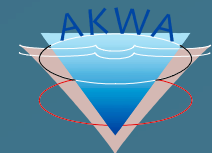
1 fine, cocktail

2 (moderately) sandy, cocktail

3 (moderately) sandy, PAK/oil

Techniques

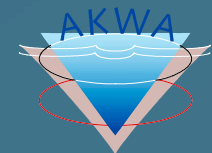
- Simple techniques
 - Sandseparation/ripening/landfarming/bioremediation/
chemical immobilisation or stabilisation
 - restricted use depending on qualities CDM,
standards for building materials and market
- Advanced techniques: thermal immobilisation
 - after pretreatment also for heavily contaminated
DM

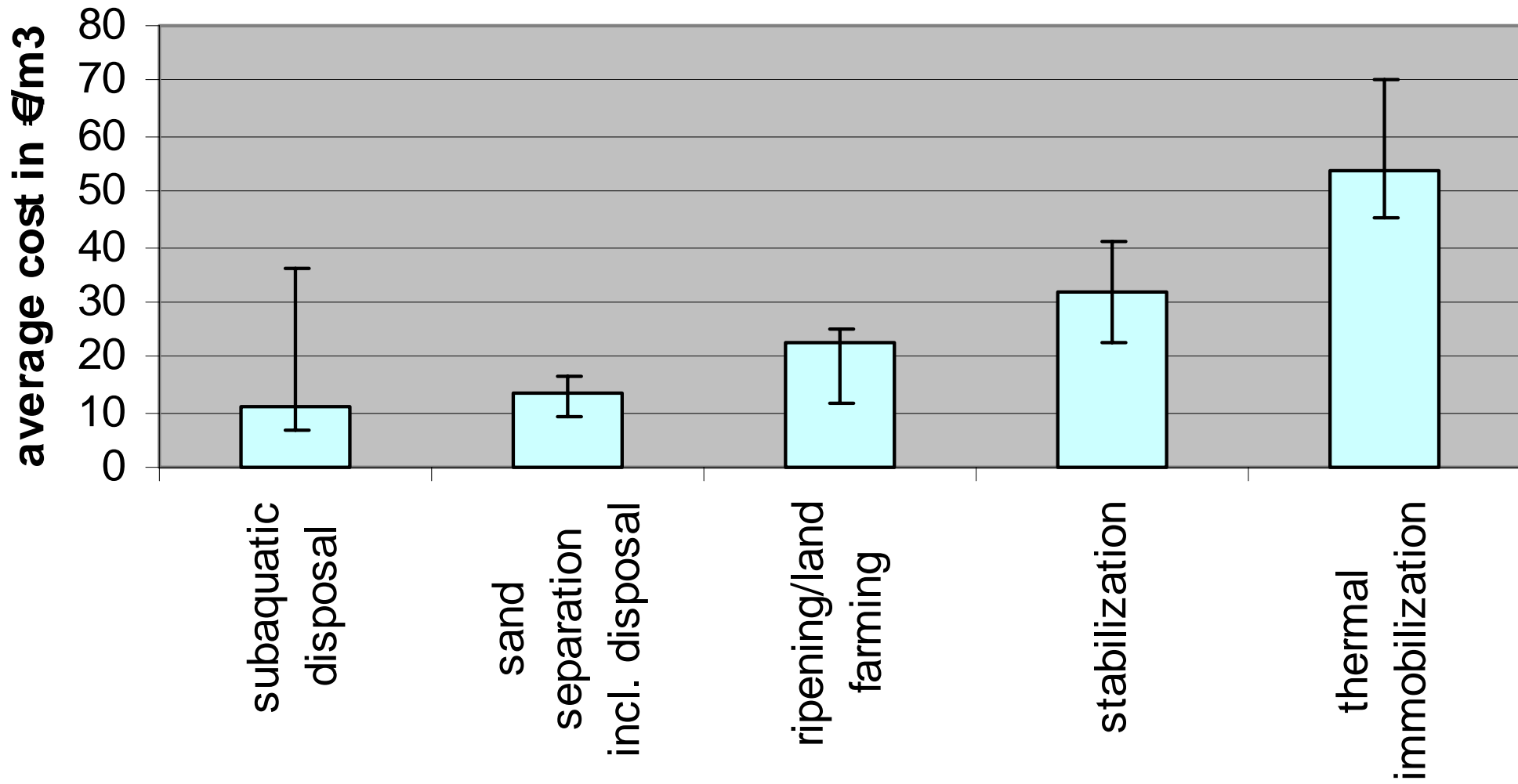


Simple techniques



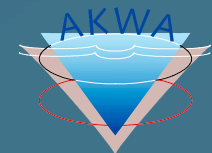
Thermal immobilisation





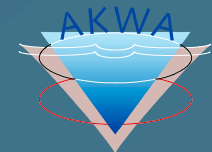
Problem analysis of treatment

- Treatment up to now very limited and small-scale
 - higher costs of treatment compared with disposal
 - no guaranteed or continuous supply for treatment to justify the high investments
 - lack of market for products as secondary raw materials
 - limitations for beneficial use due to standards for the products



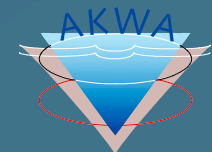
R&D on treatment and disposal

- Conclusion for Dutch policy 1998:
 - Only sand separation is feasible
 - Confined disposal is an environmental sound solution: several large CDF's were planned



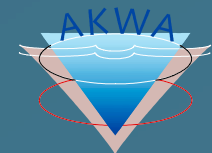
Developments

- Public resistance against new CDF's (NIMBY)
- Private sector: Lobby for treatment
- Political pressure to carry out a pilot project on large scale treatment
- National survey of feasible techniques and costs by AKWA in close co-operation with the private sector



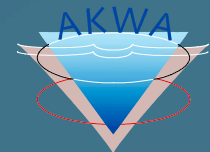
Outcome of national survey

- Treatment is in general more expensive than disposal
- More treatment should not be at the expense of dredging
- More treatment means that more budget is needed
- Highest efficiency with 'simple treatment' in combination with disposal
- If thermal immobilization is introduced then for hot spots
- Treatment of all DM is too expensive; disposal remains necessary

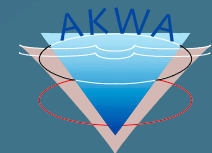
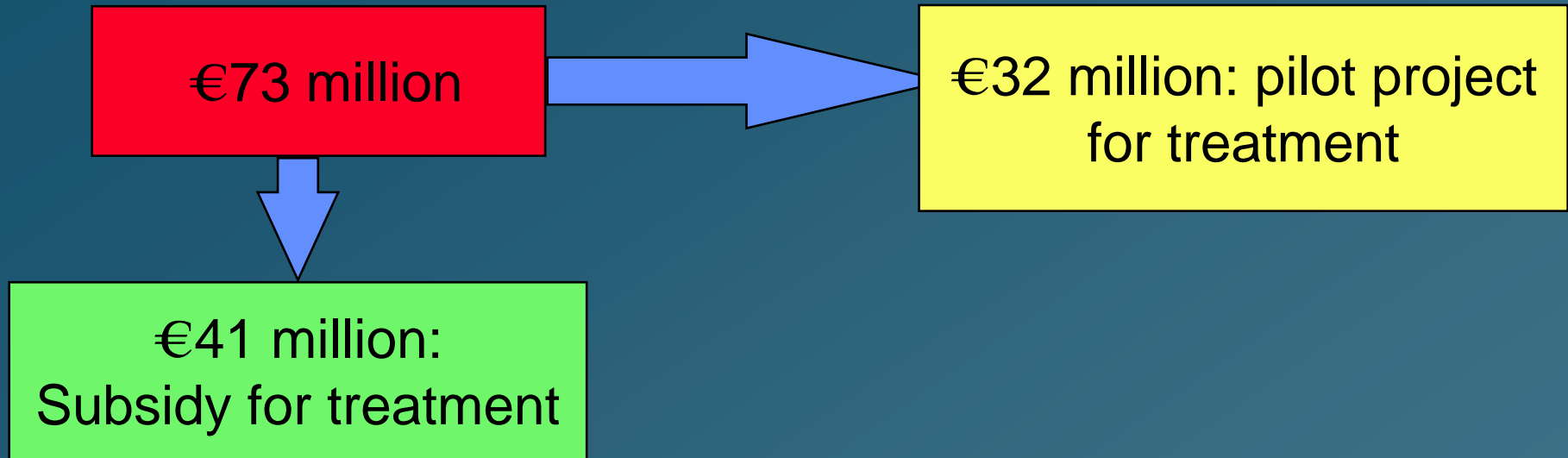


Political decisions

- Dutch policy is aimed at more treatment based on
 - less disposal
 - production of building materials
- More budget for treatment of CDM during test period of 4 years
- Confined disposal (and CDF's) remain necessary (in combination with treatment)
- Ultimate goal is a structural reversal to more treatment if the test period is succesful

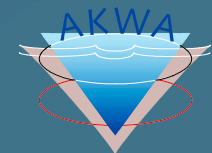


Extra budget

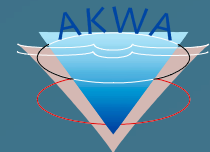
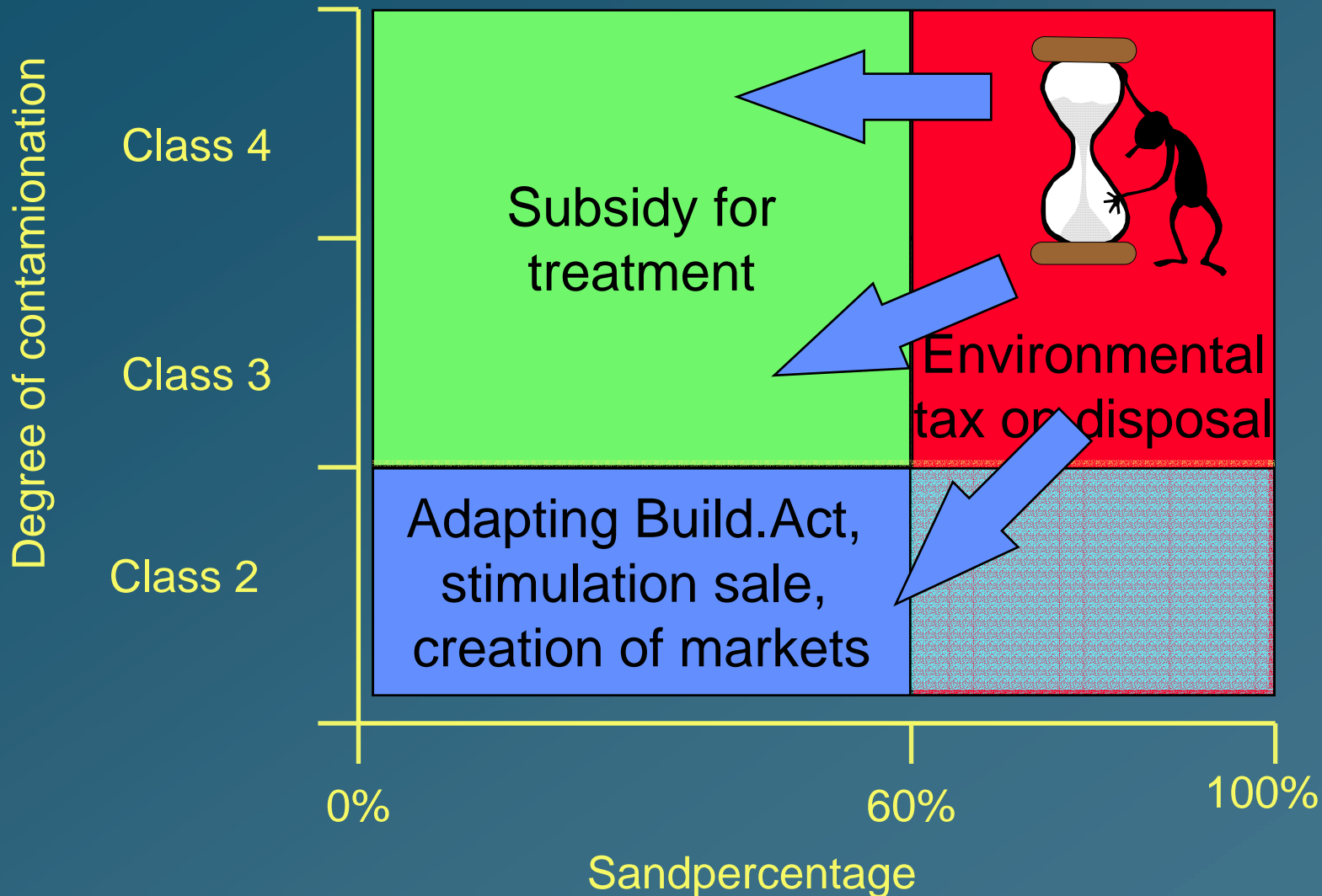


Policy instruments to stimulate treatment

- Subsidy for treatment of CDM
- Environmental tax on the disposal of “treatable” DM (at the moment DM >60% sand)
- Creation of markets for products from treatment
 - adaptation of legislation on building materials
 - application of products in governmental projects

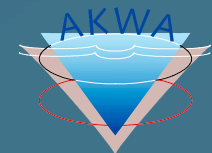


Interrelation policy instruments



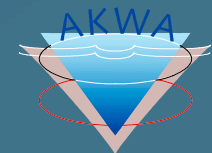
Conclusions for the Netherlands

- Treatment of CDM is a political goal in order to reduce disposal and produce building materials
- Dutch policy measures are taken to promote treatment during a test period of 4 years
- It is now up to the private sector to take the opportunities and demonstrate that treatment is feasible
- Future decisions depend on the results of the test period



General conclusions

- Source control is a needed to reach a sediment quality in the future, which does not pose a risk to aquatic systems or upland use.
- In the meantime, treatment and confined disposal remain necessary
- Investment in source control upstream is often more economical than treatment downstream
- If the higher costs for treatment are not compensated this may lead to less dredging
- Confined disposal will remain a necessary option



General recommendations

- An adequate legal framework for the handling of sediments is needed (basis EWFD)
- If treatment is the political goal consider
 - (temporary) financial impulse
 - increase of budgets for dredging to compensate for the higher costs of treatment
 - create markets for products of treatment
 - adaptation of legislation for beneficial use

