



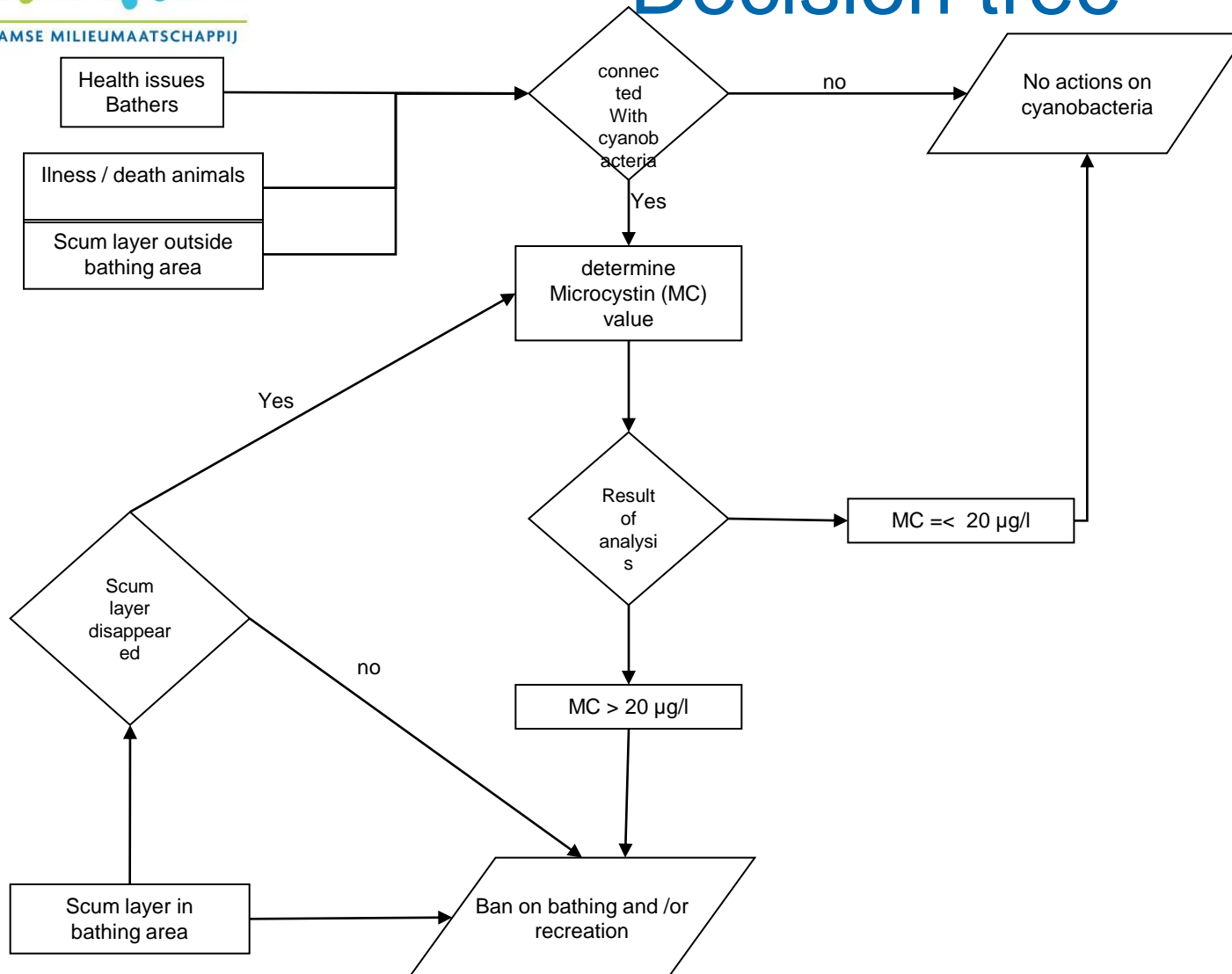
VLAAMSE MILIEUMAATSCHAPPIJ

Monitoring, risk assessment and  
communication concerning  
cyanobacteria blooms in the  
Flemish region

- ***Visual control (weekly) by the sample taker of the VMM includes***
  - transparency;
  - Odour and colour;
  - Dead fish or birds;
  - Scum layer in bathing area;
  - Control of sample

- ***Visual control by exploitant (at least weekly)***
  - Controls entire pond on scum layers
  - Scum layer present: report this to VMM and Public Health Inspection
  - Also presence of death animals is reported

# Decision tree

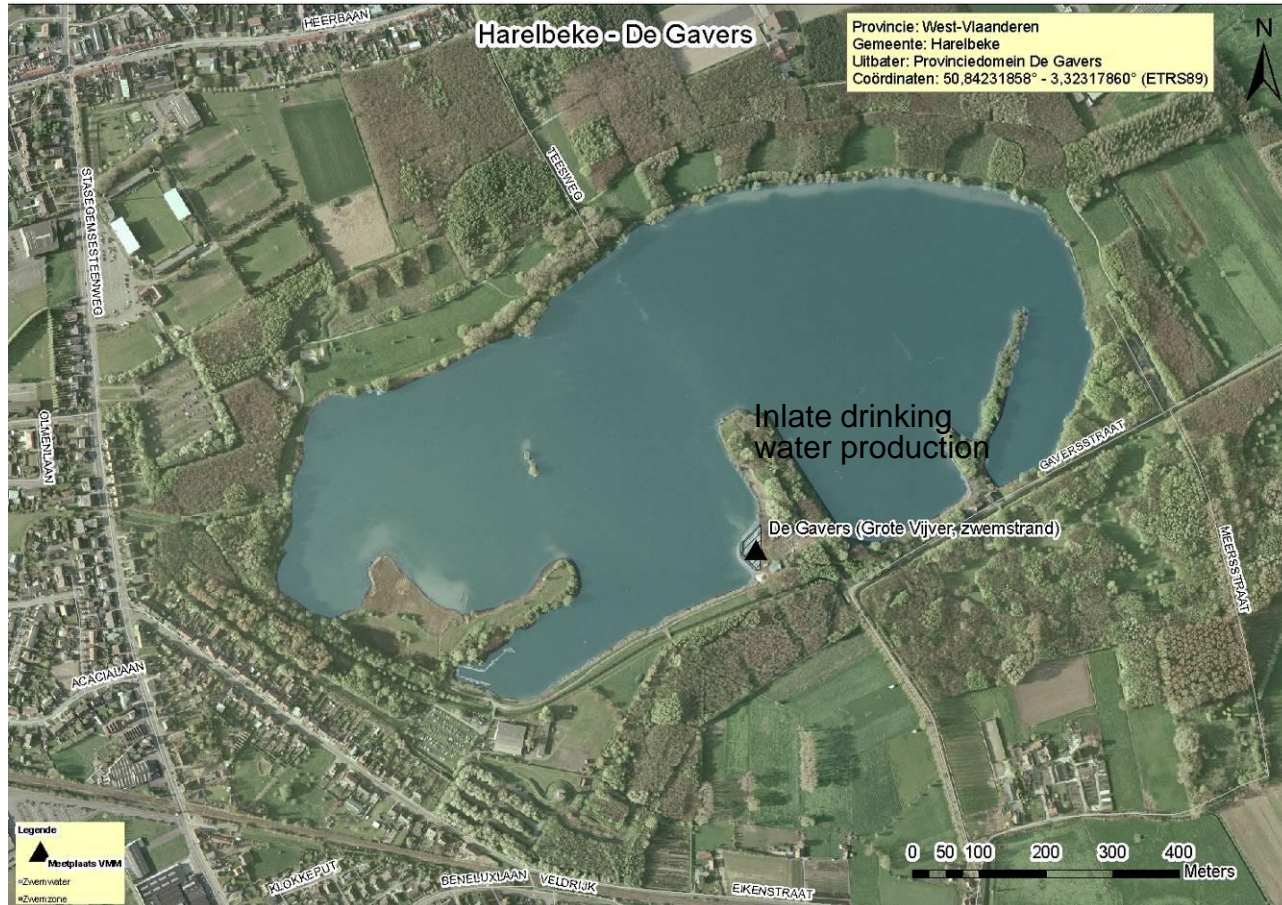


- ***At bathing site : Public warning***
  - Adapted to local situation
  - Informs the public about the possible risks
- ***Information to public during ban on bathing / recreation***
  - Information placed at VMM info pole
  - Special signs placed to notify public of ban and reason for ban

# Examples of cyanobacteria blooms in Flemish Region

- De Gavers – Harelbeke 2007
  - March 2007: reports of death fish
  - Dissection : cause of death: cyanobacteria
  - *Aphanizomenon flos-aquae*
  - Ban on recreation till 04 april
  - Drinking water production: no cyanobacteria found
  - High nitrate level, low phosphate level

# Examples of cyanobacteria blooms in Flemish Region



# Examples of cyanobacteria blooms in Flemish Region

- Ter Heide – Rotselaar 2009
  - Report of scum layer on 29/07
  - Ban on bathing and recreation
  - No microcystis
  - End of ban on 02/08
  - Low nutrient level
  - Reason unsure



# Examples of cyanobacteria blooms in Flemish Region

- De Vijvers – Averbode 2009
  - Scum layer on 31/08, notified by sample taker
  - Microcystis level: 27µg/l
  - *Cylindrospermopsis raciborskii* and *microcystis*
  - Pond closed to infrastructure works
  - Total nitrogen: 3,2 mg N/l; Total Phosphate : 0,13 mg P/l

# Examples of cyanobacteria blooms in Flemish Region

- Paalse Plas – Beringen 2010



# Examples of cyanobacteria blooms in Flemish Region

- Paalse Plas – Beringen 2010
  - Notified on 12/07 by sample taker
  - Hot weather end of june, begin of july
  - Low nutrient level (below detection limit)
  - Colony Canadian geese present
  - 12/07: microcystis > 80µg/l
  - 15/07: no microcystis found
  - Ban on bathing and recreation from 12/07 till 16/07

# Examples of cyanobacteria blooms in Flemish Region

- Donkviijver – Oudenaarde 2010



# Examples of cyanobacteria blooms in Flemish Region

- Donkvijsver – Oudenaarde
  - Only water recreation, no swimming
  - Scum layer notified by operator
  - Microcystis level: 207
  - Ban on recreation till end of season
  - *M. aeruginosa*, *M. flos-aquae*, *Anabaena subcylindrica*, *A. planctonica*, *Planktothrix agardhii*, *Woronichinia naegliana*, *Aphanizomenon flos-aquae* and *Cylindrospermopsis raciborskii*

# Examples of cyanobacteria blooms in Flemish Region

- Schulensmeer – Lommel
  - No swimming, only water recreation
  - Multiple reports of cyanobacteria
  - High nutrient levels due to connection with Demer
  - *Microcystis flos-aquae*, *M. aeruginosa*, *Microcystis viridis*, *Aphanizomenon flos – aquae*, *Woronichinia naegliana* en *Anabaena flos-aquae* found in samples