



Rijkswaterstaat
Ministerie van Infrastructuur en Milieu

Monitoring Water Quality

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Delta of 4 international rivers

- Rhine
- Meuse
- Scheldt
- Ems

North Sea

Wadden Sea





Monitoring Networks

- Physical monitoring - since ± 1800
 - Chemical monitoring – since 1952
 - Biological monitoring - since 1992
-
- Automated water quality monitoring
– since 1978





To which extent and how are
the monitoring results taken
into account in water policy
implementation?



Information Management

Demand

- *NIEUWE WET- EN REGELGEVING (KADERRICHTLIJN)
- *ONDERNEMINGSPLAN 2015
- *NETWERKVISIE
- *BUSINESS ARCHITECTUUR

Alignment

IV-STRATEGIE
KADERS VOOR IV
PROCES

- *WERKWIJZER BC
- *AANPAK IA
- *FORMAT VOOR JAARPLAN

Supply

- *NIEUWE TECHNOLOGIEN
- *IV ARCHITECTUUR (DATA & ICT)
- *ALLIANCIES
- *NIEUWE WET- EN REGELGEVING (INSPIRE, OPEN DATA)

Strategic

Tactical

Tactisch

NIEUWE WENS VAN
DE GEBRUIKER

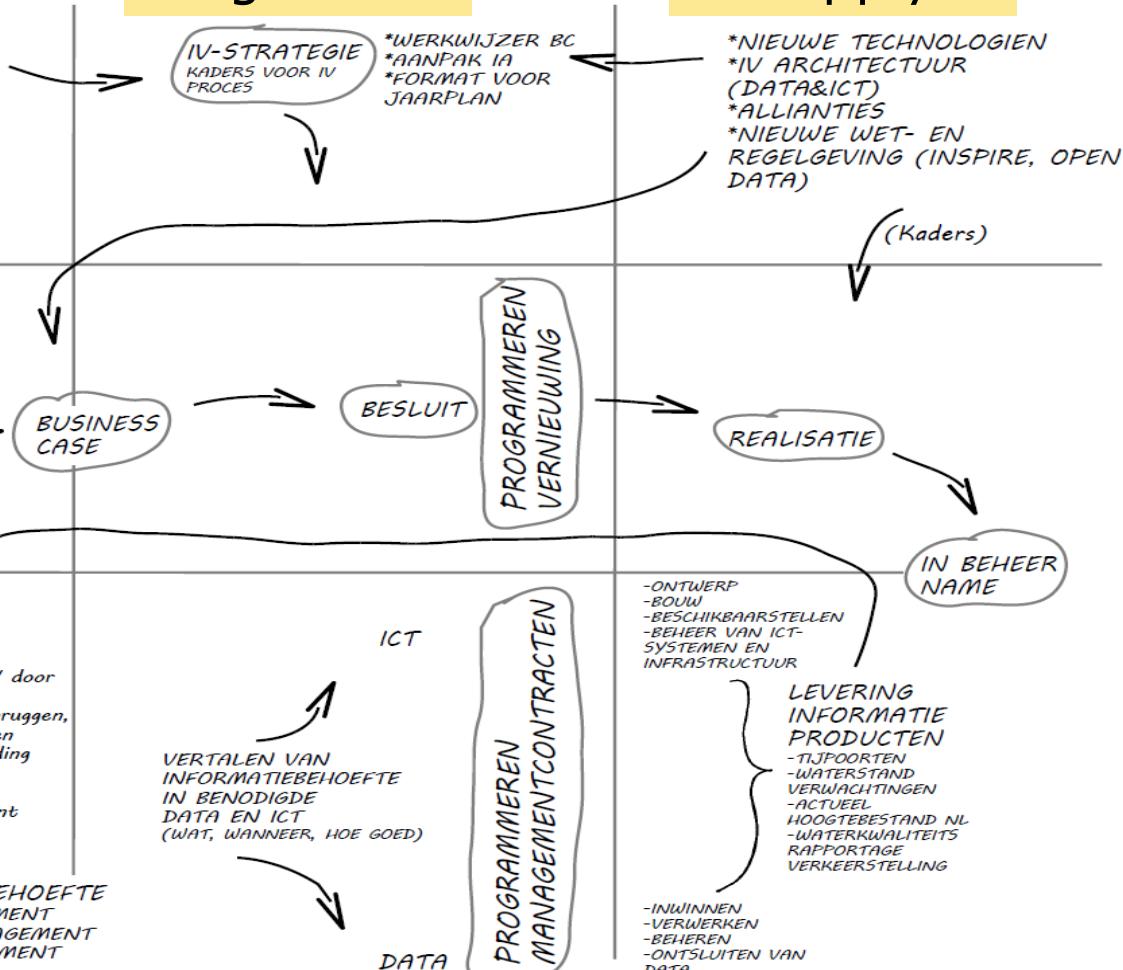
- MISSIE RIJKSWATERSTAAT
- Droge voeten
 - Vlot en Veilig Verkeer
 - Voldoende en schoon water
 - Betrouwbare Informatie



Operational

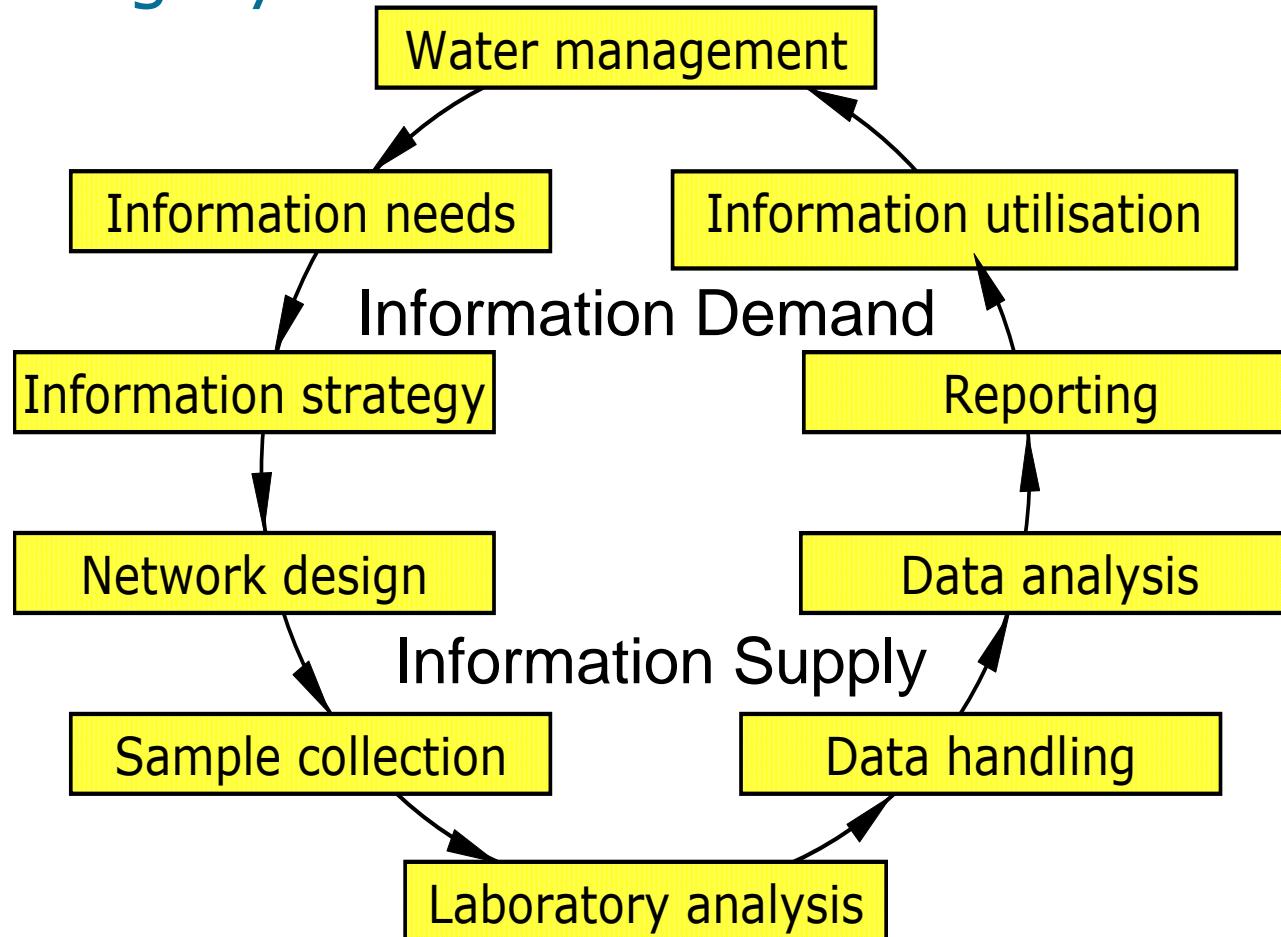
Operationeel

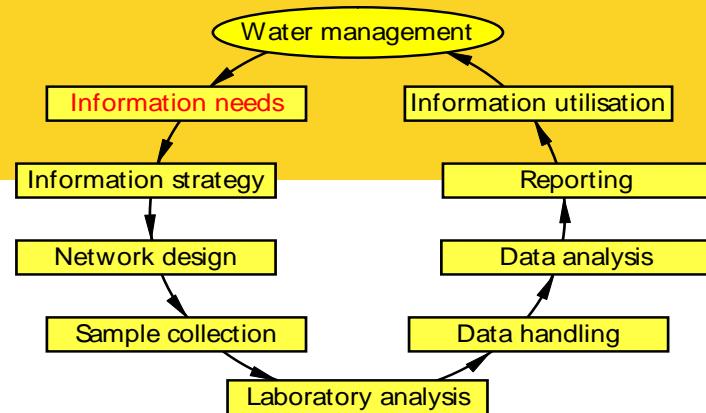
- INFORMATIEBEHOEFTEN
- ASSETMANAGEMENT
 - VERKEERSMANAGEMENT
 - WATERMANAGEMENT





Monitoring Cycle

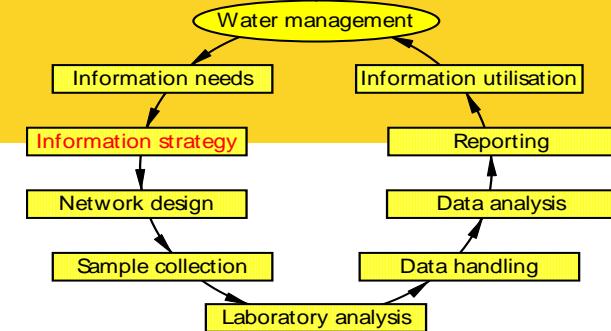




Information Needs

Water quality monitoring necessary for:

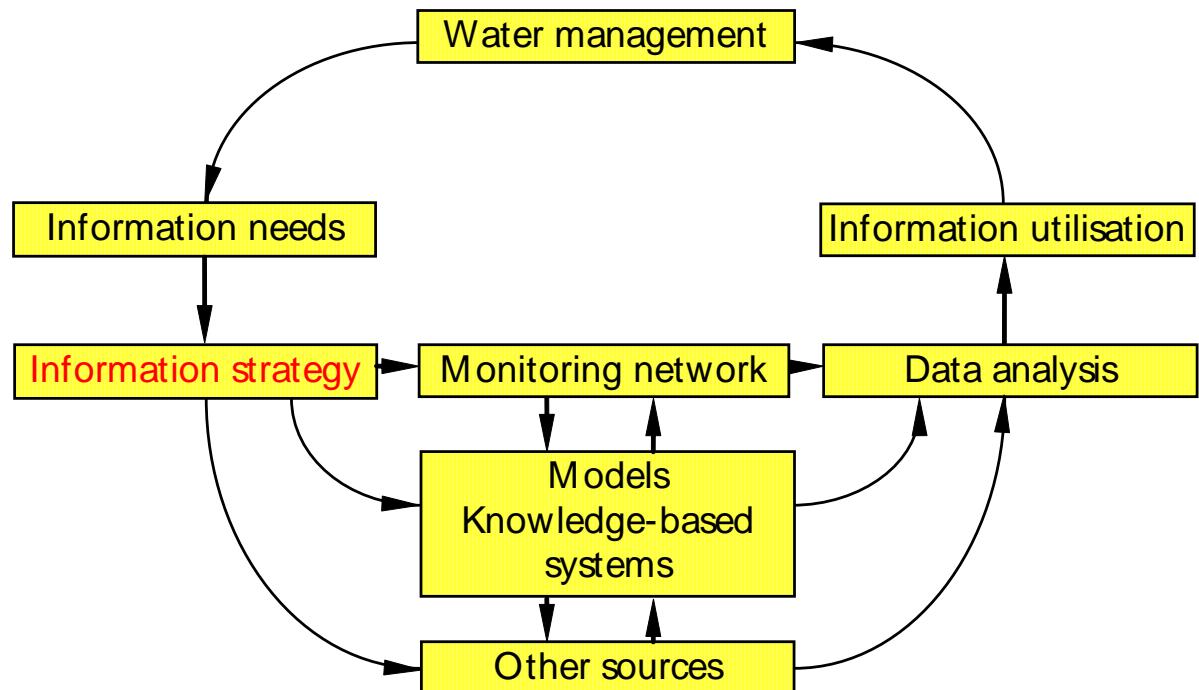
- **National water management**
 - policy evaluation
 - determination of measures and assessment of their effectiveness
 - status and trends in concentrations and in loads
 - compliance testing
- **International agreements / obligations**
 - OSPAR
 - TMAP
 - International River Commissions
- **EU (European Union) obligations**
 - Water Framework Directive (WFD)
 - Marine Strategy Framework Directive (MSFD)
 - Nitrate Directive
 - Natura 2000



Information Strategy

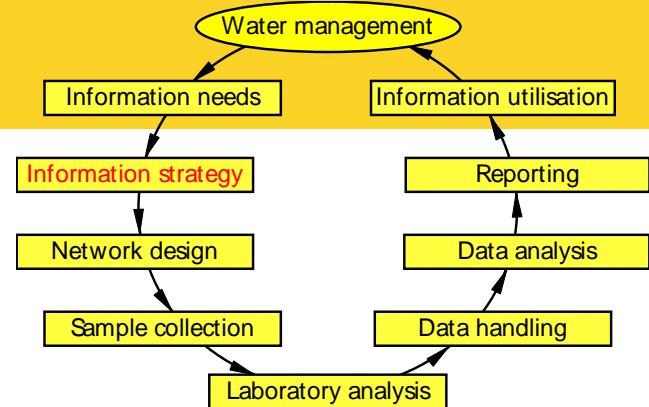
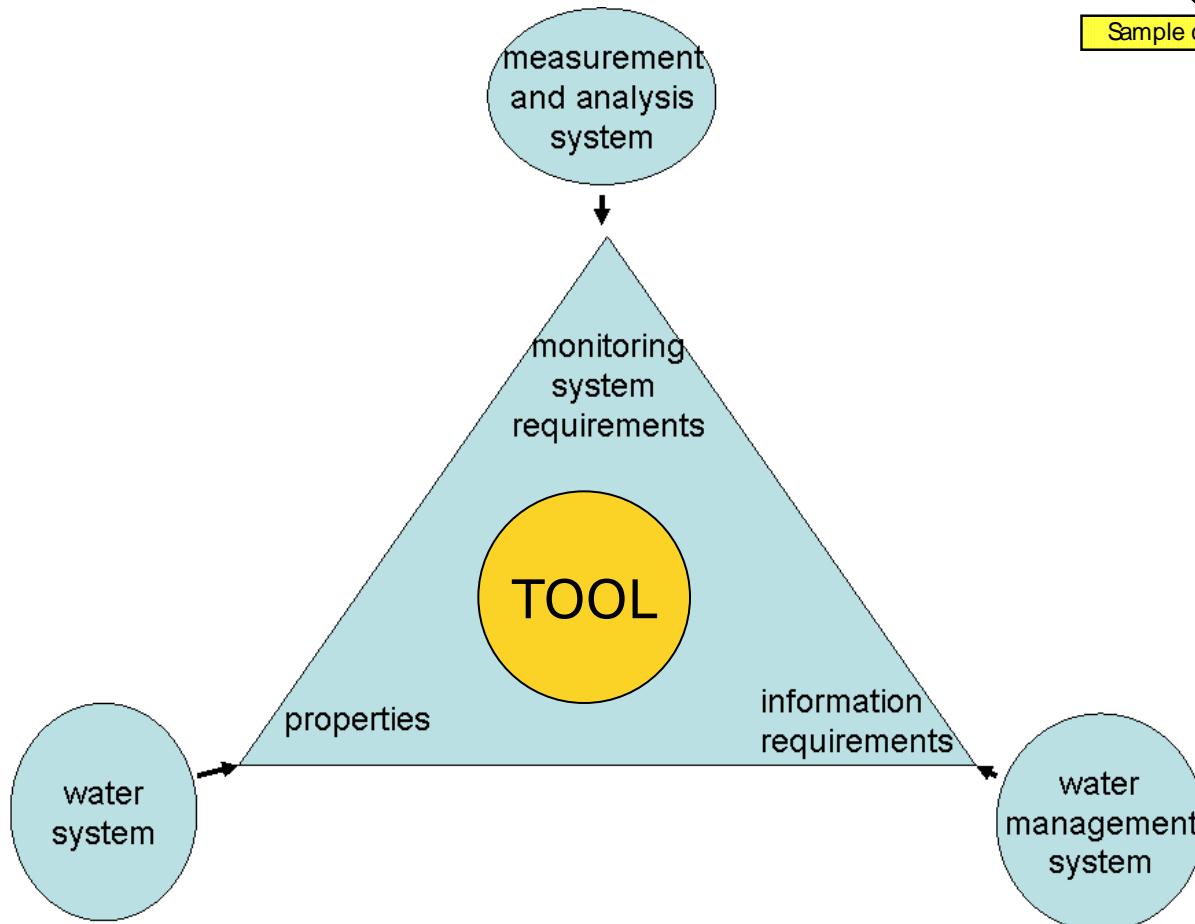
Sources of Information

- Monitoring is not the only source
- Models, knowledge based systems
- Other sources



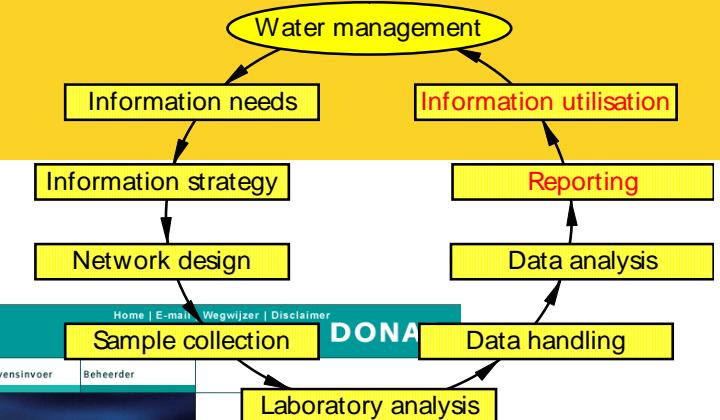


Information Strategy



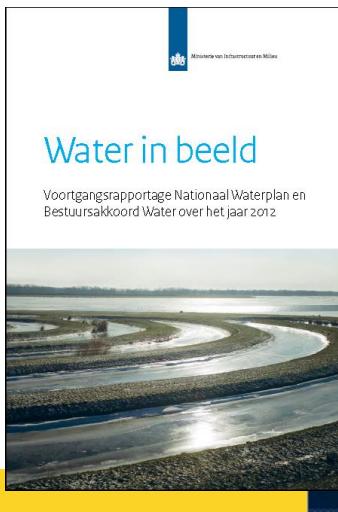


To whom are the results of the exploitation of the data and in what form?



Information Use and Products

- Central database
- International Reporting
- Primary Reports
- Water system Reports
- Thematic reports
- Operational Plans
- Products of Others



The screenshot shows the DONAR website interface. At the top, there's a navigation bar with links for 'Geïnteresseerde', 'Gegevensgebruiker', 'Gegevensinvoer', and 'Beheerder'. Below this is a main content area featuring a large image of a bird in flight. To the left is a sidebar with links for 'Gebruikersondersteuning', 'Nieuws', 'Nieuwsbriefen', 'Projecten', and 'Links'. The central part of the page has sections for 'Welkom op de DONAR', 'Dienstcatalogus', and 'Jaarverslag'. On the right, there are sections for 'Sample collection', 'Laboratory analysis', and 'Data handling'.





Water in beeld

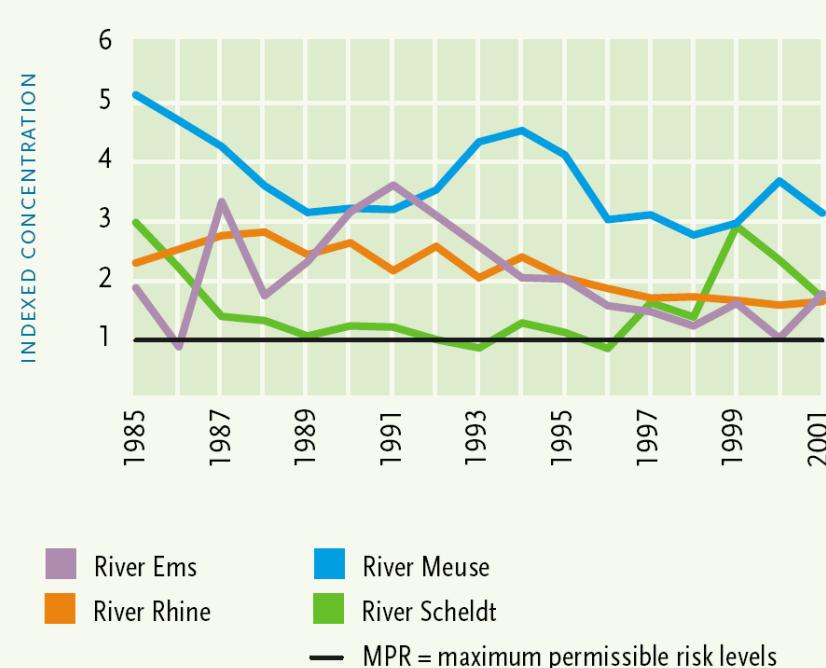
Voortgangsrapportage Nationaal Waterplan en Bestuursakkoord Water over het jaar 2012



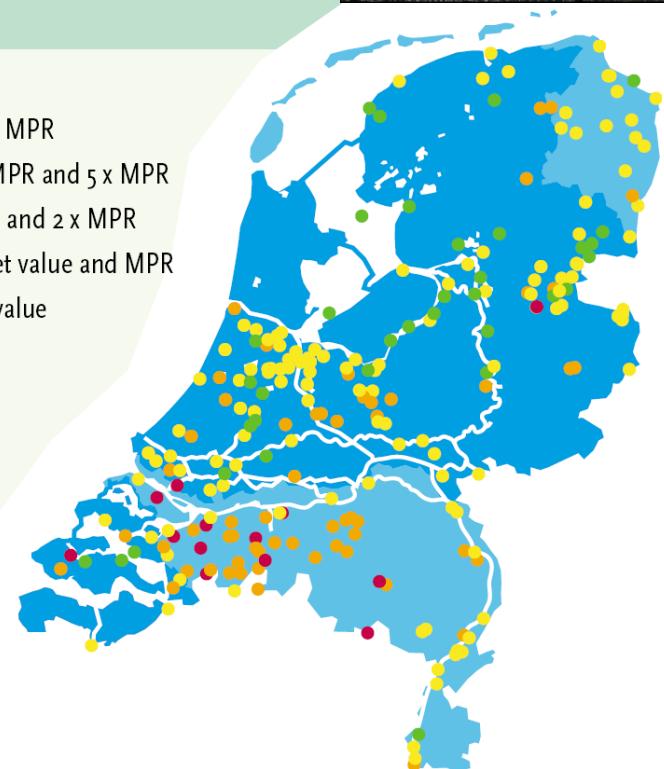
Reports to national parliament EU-reports Reports for international commissions

2.1.4

Copper in surface water



- more than 5 x MPR
- between 2 x MPR and 5 x MPR
- between MPR and 2 x MPR
- between target value and MPR
- below target value





Water Framework Directive Portal Surveillance & Operational Monitoring

- Internet based database
- Interactive
- <http://krwportaal.nl/portaal>
- <http://www.informatiehuiswater.nl>
- <http://www.helpdeskwater.nl>

The screenshot shows the homepage of the Informatiehuis Water website. At the top, there's a logo for 'Informatiehuis Water' with a stylized water drop icon. Below the logo, there are links for 'Home', 'Datapolicy', and a search bar labeled 'zoek'. The main content area features a large image of water droplets. On the left sidebar, under 'Producten en diensten', there are links for 'Aquostandaard', 'Aquokit', 'Spoorboekje Waterkwaliteit', 'KRW-portaal', 'Waterkwaliteitsportaal', and 'Informatiebeleid'. Other links in the sidebar include 'Over IHW', 'Nieuws', and 'Account aanvragen'.

The screenshot shows the Kaderrichtlijn Water Portaal (KWP) interface. The title bar reads 'Kaderrichtlijn Water Portaal - Microsoft Internet Explorer van Het Net'. The main window displays a map of the Netherlands with numerous blue dots representing monitoring locations. A legend on the right indicates different monitoring types. The left sidebar has tabs for 'Algemeen', 'Kaart', 'Downloaden', 'Uploaden', and 'Voortgang'. The bottom right corner features a small graphic with the text 'NEDERLAND LEeft MET WATER'.

The screenshot shows the Helpdesk Water website. The top navigation bar includes links for 'Homepage', 'Actueel', 'Onderwerpen', 'Organisatie', and 'Waterbegrippen'. The main content area is titled 'Helpdesk Water' and contains a section for the 'English summary European Water Framework Directive'. It includes a detailed description of the directive's goals and a table comparing surface water and groundwater status. There are also sections for 'Organisation', 'Public participation', and 'Publications'. A sidebar on the right has links for 'stel ons een vraag' and 'Questions?'. The bottom right corner features a small graphic with the text 'VIER DRIE EENHEIDEN HET WATER'.

Rijkswaterstaat

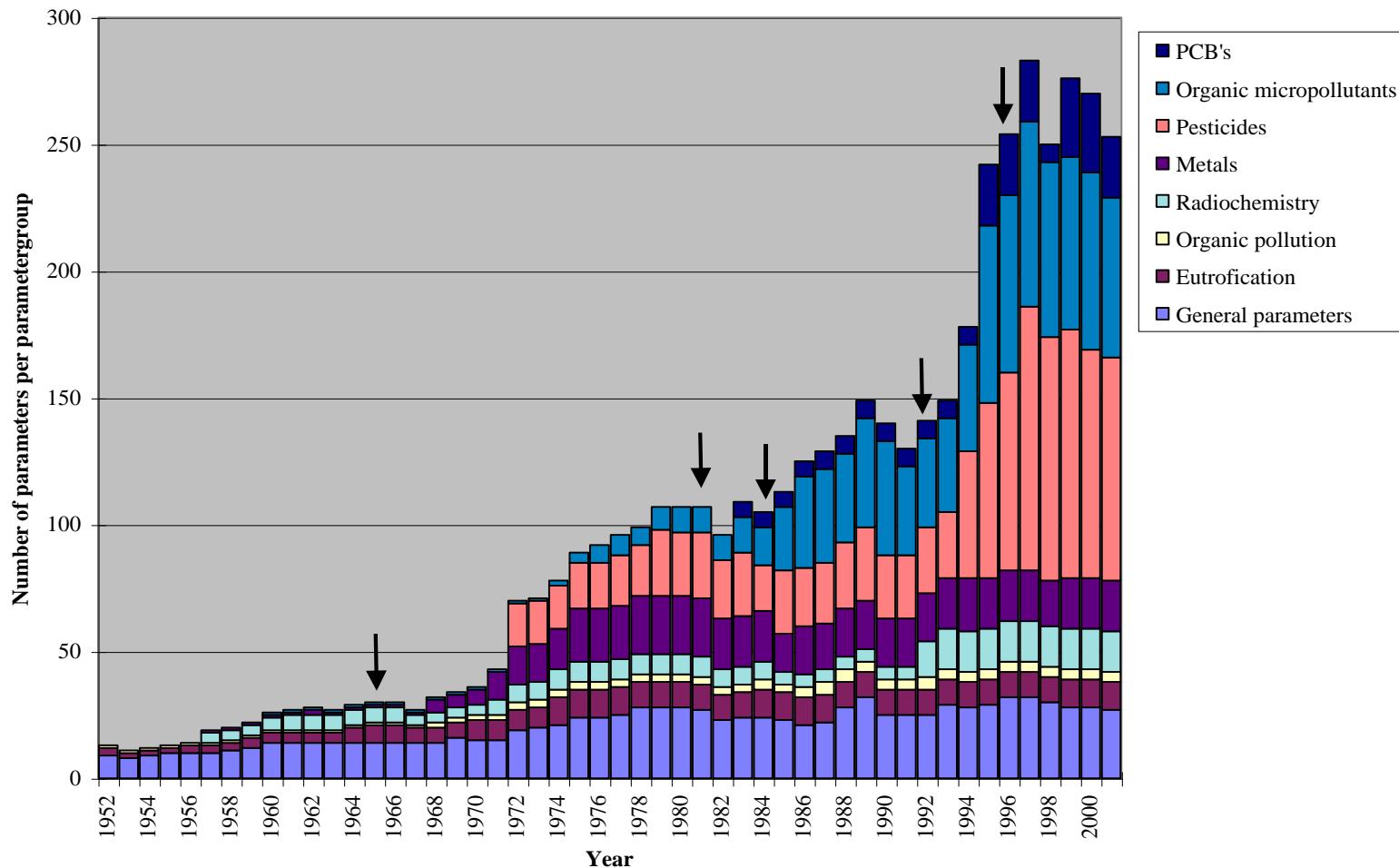
INBO 2013 - Workshop on Monitoring 13 November 2013



What indicators are used in view of supporting decision making process?



Monitoring Strategy - number of parameters





Priorities in Information Management 2014

Vraag	Prioritering vernieuwing en vervangingsprojecten WM-WVL	basisfuncties	SLA principes HWS	Bestuurlijke ambities
	project	Prio	wettelijke taken basisfuncties	
*NIEUWE WET-EN REGELGEVING (KADERRICHTLIJN) *ONDERNEMINGSPLAN 2015 *NETWERKVISIE *BUSINESS ARCHITECTUUR	Afronding centralisatie LMW uitbesteding B&O/achterstallig onderhoud	1 xx	afmaken voor nieuw hoogwaterveiligheid	
Strategisch (Kaders)	Bestuurlijke afspraken nieuwe inbeheernames OLO, AGNL, ICAWEB	1 x	voldoende water	x
	Caribisch Nederland	1 x	x	xx
	Havik II	1 xx	x x	xx
	Hoogwaardige afvoermetingen bij Sint Pieter	1	xx x	x
	I&M meetnet incl LMW2 (NWCL project)	1 x	xx x	xx
	Modelaanpassingen Eems-Dollard	1 x	x	xx
	Next Generation Hydrosoftware	1 xx	xx x	x
	Verbetering IV waterberichtgeving	1 x	xx	xx
	Vernieuwing IV zeehaven Maasmond	1 x	x x	x xx
	WaterDataNet incl opslag mariene projecten	1 xx		x x x
	Waterportaal	1 xx		x x
	Betere debietmeting waterverdeling bij hoge afvoeren	2	xx x	x
	Digitale Delta	2 x		xx x
	Herziening KRW dochterrichtlijn prioritaire stoffen	2	x	xx
	IV Deltaprogramma	2	x x	xx x
	Oplevering en inbeheername Maaswerken	2	xx x x x x	x
	Peilbeheer IWP: landelijke uitrol	2 x	x	xx
	Vervanging stofverspreidingsmodellen crisismanagement	2	x	xx
	Water aan- en afvoerfunctie van kanalen Zuid-Nederland	2	x	x x
	Grondwaterstanden-vervanging informatiesysteem	3	x	x
	Microplastics	3	x	x
	Samenwerking waterschappen rond meetnetten-laboratoria	3	x	x
	Temperatuurverwachting bij dreigende ijsvorming	3	x x	x x

Vraag

Strategisch (Kaders)

Tactisch

MISSIE RIJKSWATERSTAAT

- Droge voeten
- Vlot en Veilig Verkeer
- Voldoende en schoon water
- Betrouwbare Informatie

EEMS RIJN MAAS SCHELDE

INFORMATIEBEHOEFS

- ASSETMANAGEMENT
- VERKEERSMANAGEMENT
- WATERMANAGEMENT

GEBRUIK van IV door Werkprocesses

- Bediening van bruggen, stuwen en sluizen
- Verkeersbegeleiding
- Baggeren
- Kustsuppletie
- Crisismanagement
- etc

NIEUWE WENS VAN DE GEBRUIKER

BU CA

Operationeel



Management Area of Main Water Systems

- 90,278 km² of surface water
- 35 kilometres of dunes
- 214 kilometres of dikes and dams
- 10 weirs
- Afsluitdijk and Houtribdijk (two dikes)
- 4 storm surge barriers





Thank you

