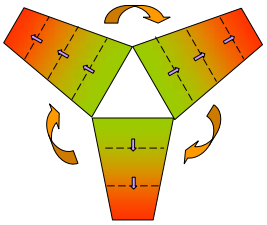
ROYAL HASKONING



Practitioner workshop on asset management

Next steps to implementation and future research needs

Jaap Flikweert & Paul Sayers

Next steps

ROYAL HASKONING

- Asset performance tools
- Link with Creating Asset Management Capability (CAMC) and other programmes
- Future research needs

APT Vision

Asset Performance Tools:

Programme to implement asset management R&D

Manage the assets more effectively and efficiently by using:

- risk-based hierarchy of data, tools and techniques
- best available evidence and knowledge to guide asset management decisions
- consistent set of tools, guidance and training tailored to suit skills

Integrated tiered framework of tools

- Integrated:

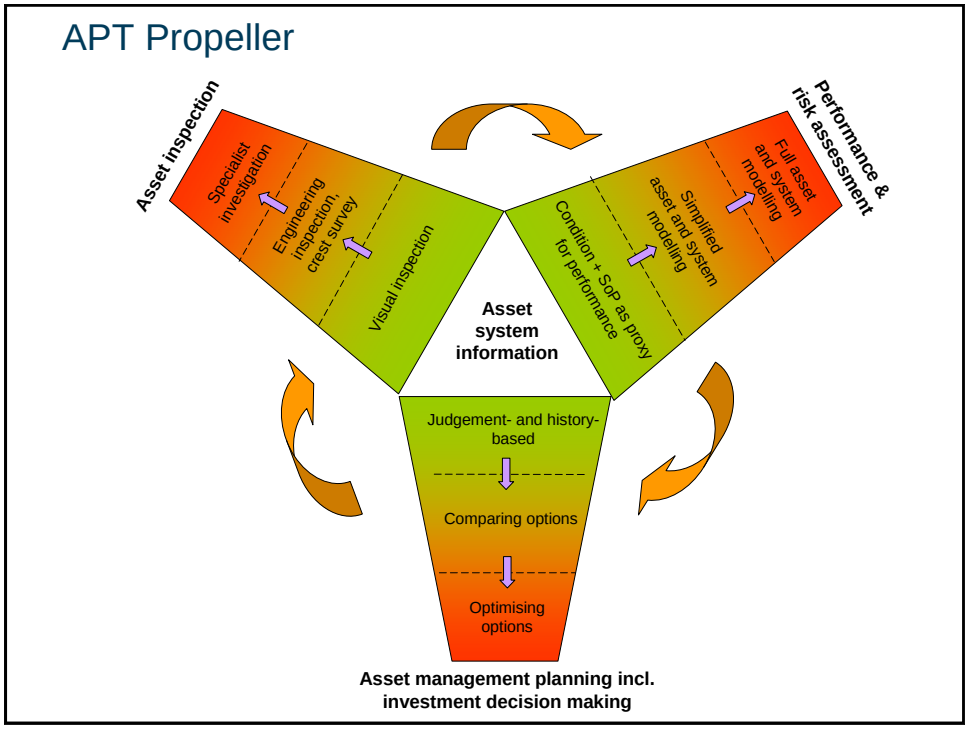
  inspection – assessment – planning - data

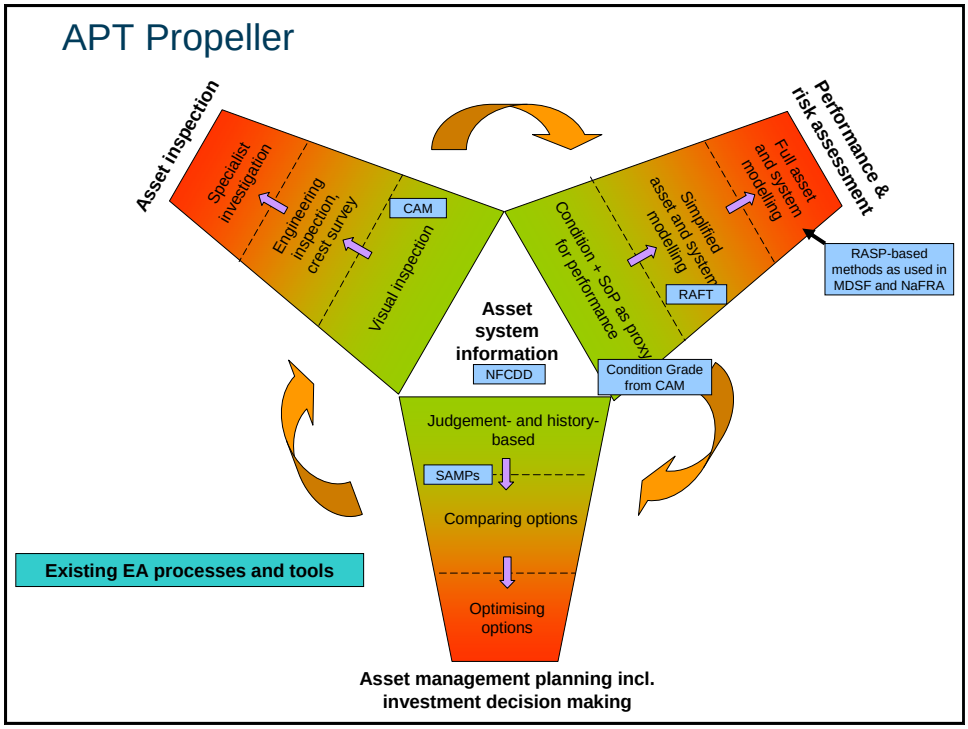
- Tiered:

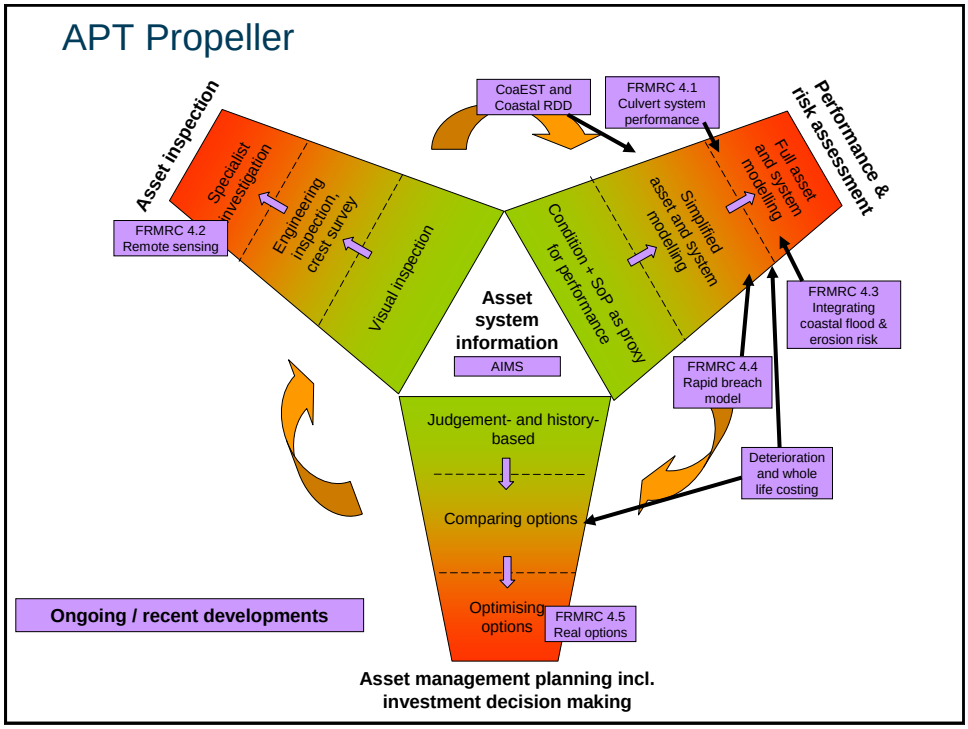
  simple where possible,
  complex where needed

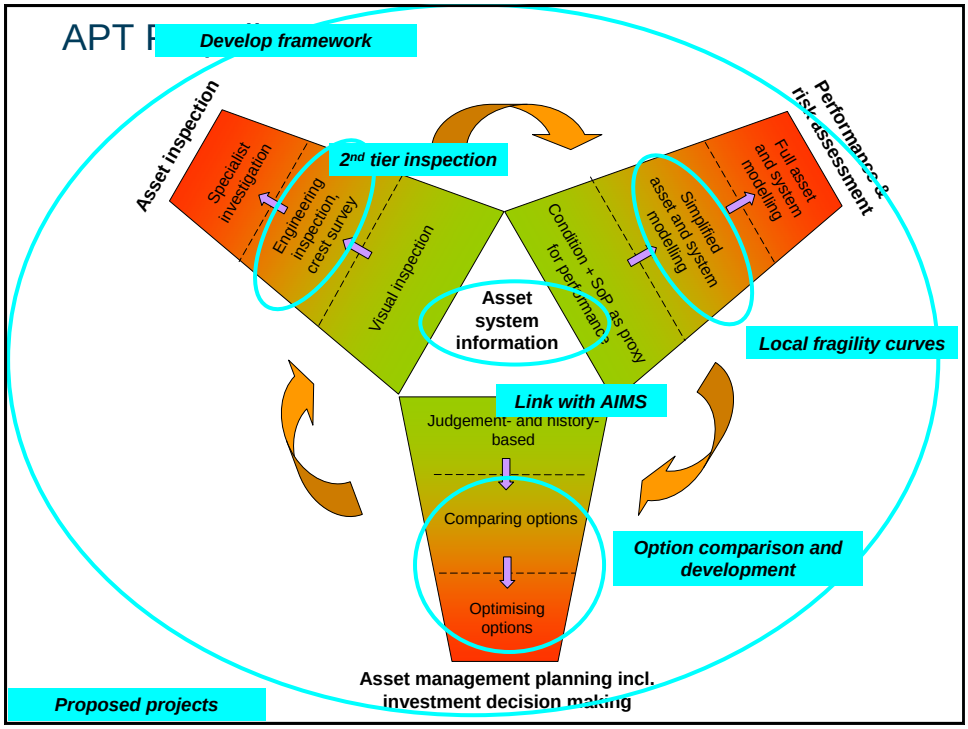
- Methods – tools – guidance - training

from PAS55 (BSI, 2004)

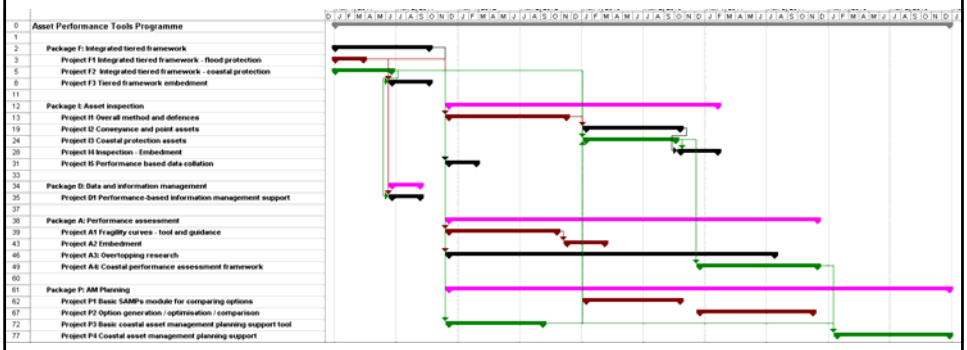

APT Propeller
Asset inspection
Specialist investigation
Engineering inspection, crest survey
Visual inspection
Performance & risk assessment
Full asset and system modeling
Simplified asset and system modeling
Condition + SoP as proxy for performance
Asset system information
Judgement- and history-based
Comparing options
Optimising options
Asset management planning incl. investment decision making


APT Propeller
Asset inspection
Specialist investigation
Engineering inspection, crest survey
Visual inspection
CAM
Performance & risk assessment
Full asset and system modeling
Simplified asset and system modeling
RAFT
RASP-based methods as used in MDSF and NaFRA
Condition + SoP as proxy for performance
Condition Grade from CAM
Asset system information
NFCDD
Judgement- and history-based
SAMPs
Comparing options
Optimising options
Existing EA processes and tools
Asset management planning incl. investment decision making


APT Propeller
Asset inspection
Specialist investigation
Engineering inspection, crest survey
Visual inspection
Condition + SoP as proxy for performance
Simplified asset and system modeling
Full asset and system modeling
Performance & risk assessment
CoaEST and Coastal RDD
FRMRC 4.1 Culvert system performance
FRMRC 4.2 Remote sensing
FRMRC 4.3 Integrating coastal flood & erosion risk
FRMRC 4.4 Rapid breach model
Deterioration and whole life costing
Asset system information
AIMS
Judgement- and history-based
Comparing options
Optimising options
FRMRC 4.5 Real options
Ongoing / recent developments
Asset management planning incl. investment decision making


APT P
Develop framework
Asset inspection
Specialist investigation
2nd tier inspection
Engineering inspection, crest survey
Visual inspection
Condition + SoP as proxy for performance
Simplified asset and system modeling
Full asset and system modeling
Performance & risk assessment
Asset system information
Local fragility curves
Link with AIMS
Judgement- and history-based
Comparing options
Optimising options
Option comparison and development
Proposed projects
Asset management planning incl. investment decision making

APT – Indicative programme

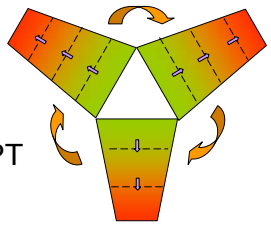


Link with CAMC

- Creating Asset Management Capacity (CAMC):
  On-going programme of improvements for management of flood and coastal risk assets.
- Asset Information Management System (AIMS):
  CAMC Phase 1 deliverable; new asset inventory to replace NFCDD.
- Programme:
  - April 2012: AIMS ready for EA use
  - October 2012: AIMS ready for partner organisation use
  - Followed by later phases of CAMC

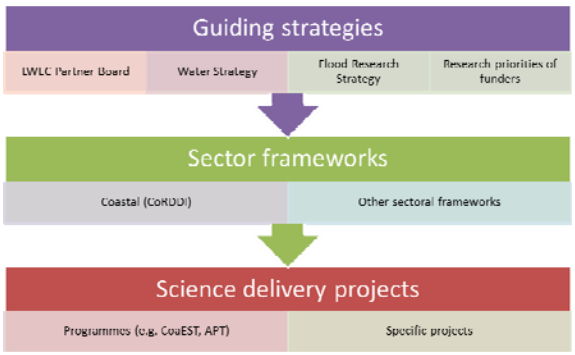
Link with CAMC

- CAMC develops basic asset management tools
- APT develops more advanced tools
  → to be integrated into CAMC interface
- Basic research to feed into later stages of APT



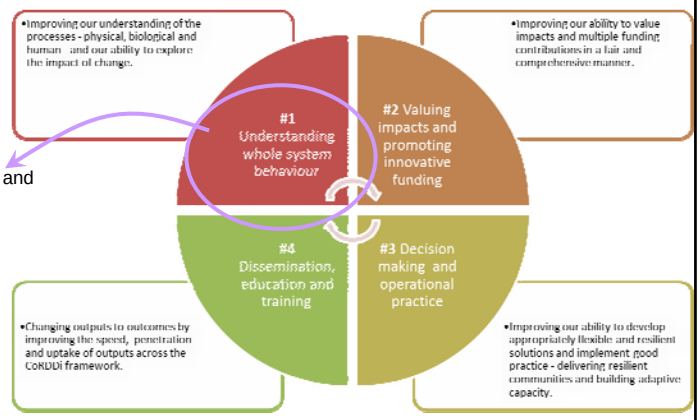
Future research needs

From LWEC Floods Strategy



Future research needs

From Coastal Research Development and Dissemination Strategy (CoRDDi)



Includes asset management and performance – of individual assets and groups of assets

Future research needs

Emerging from FRMRC2

From today's presentations:

- User focused tool for blockage
- Overtopping / breach tools
- Making kinematic GPS accessible

Future research needs

Emerging from FRMRC2

Moving beyond event based management toward a more dynamic view…..

- Process-driven deterioration
- Blockage – further work, validation and debris transport, testing and predictive capability
- Resilience of dynamic asset systems – natural recovery and change (dunes, channels etc)
- Full-system performance – pumps, gates, channels and linear defences
- Optimisation reflecting the realities of the decisions making processes and constraints

Future research needs

Internationally:

- Floodprobe and Urbanflood
- International Levee Handbook
- The Netherlands:
  - Improving inspection
  - Multifunctional flood defence
- US Army Corps of Engineers – levee safety program – better databases and field tools for attributing risk

Future research needs

But where do you see the main gaps?

- Key areas for better guidance & tools?
- Key areas for better science?