

**Asset managers, policy
makers and customers talking
the same language –
a key for moving our infrastructures
into the future**

Helena Alegre

Chair of the IWA Strategic Asset Management SG
Senior Researcher at LNEC (Portugal)



International
Water Association

(Senior Vice-President)



International
Water Association

(Chair)

Specialist Group
Strategic Asset
Management



LABORATÓRIO NACIONAL
DE ENGENHARIA CIVIL

(Senior researcher)



International
Water Association

Specialist Group
Strategic Asset
Management



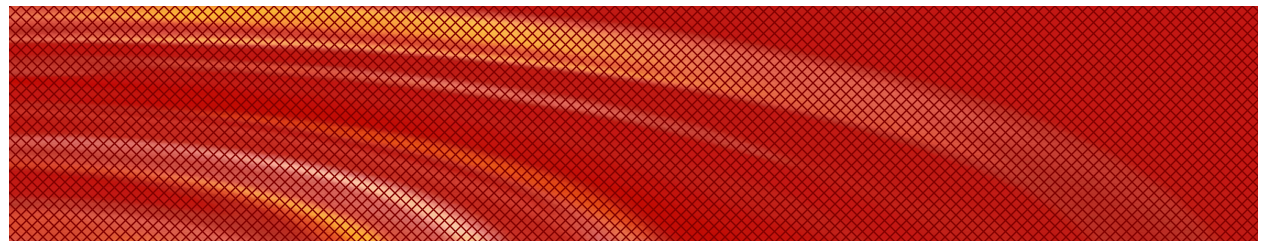
Changing hats now...

Presentation layout

- Infrastructure asset management
– the SAM SG vision
- About SAM within IWA
- Main outcomes from LESAM 2011
- IAM and communication
- Concluding remarks

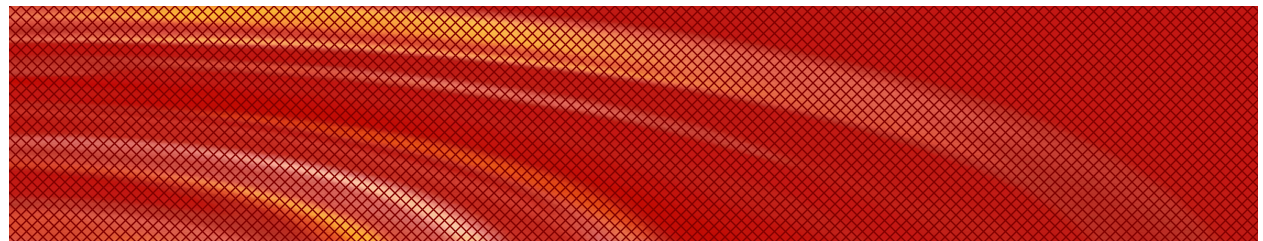


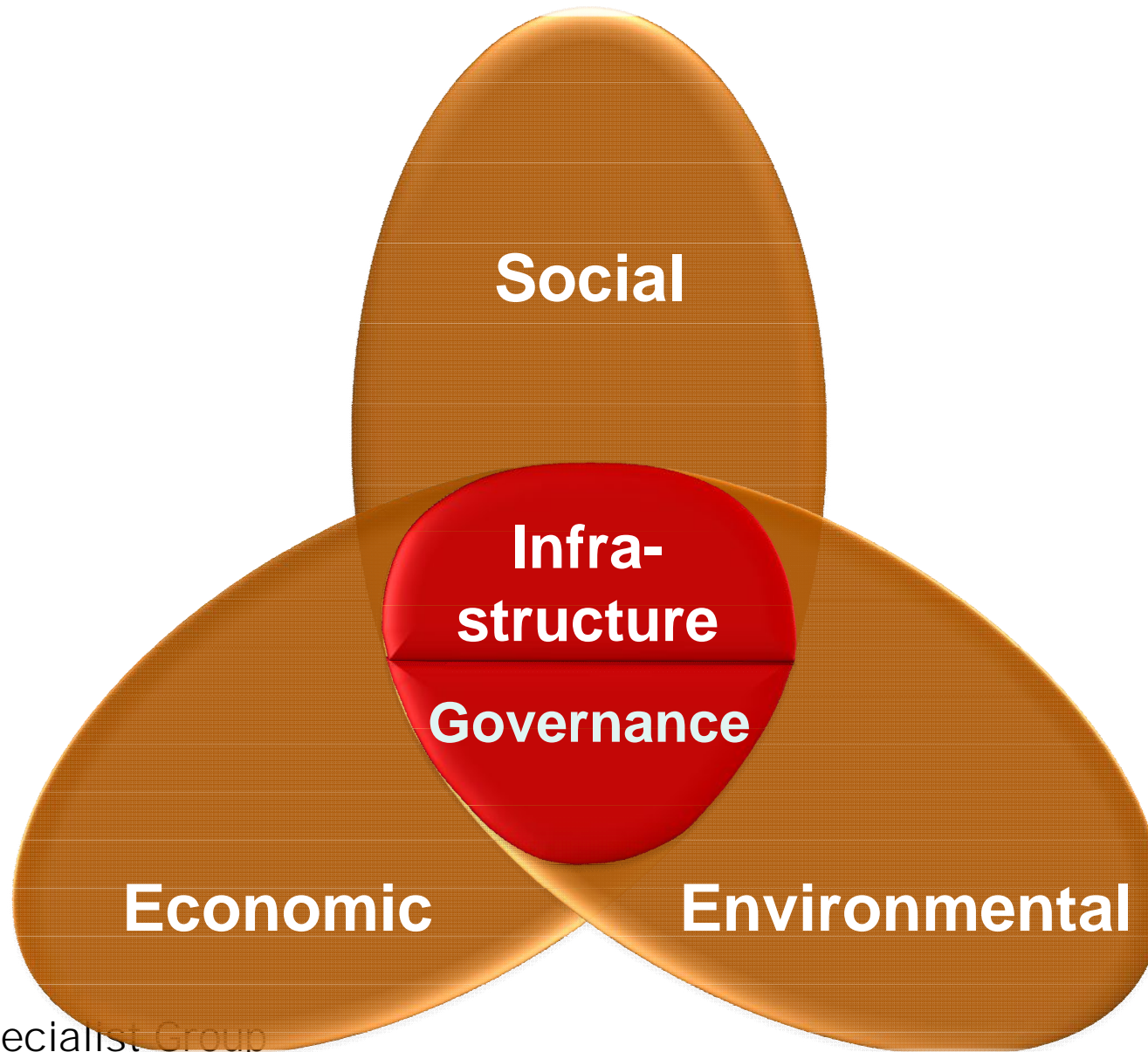
Specialist Group
Strategic Asset
Management



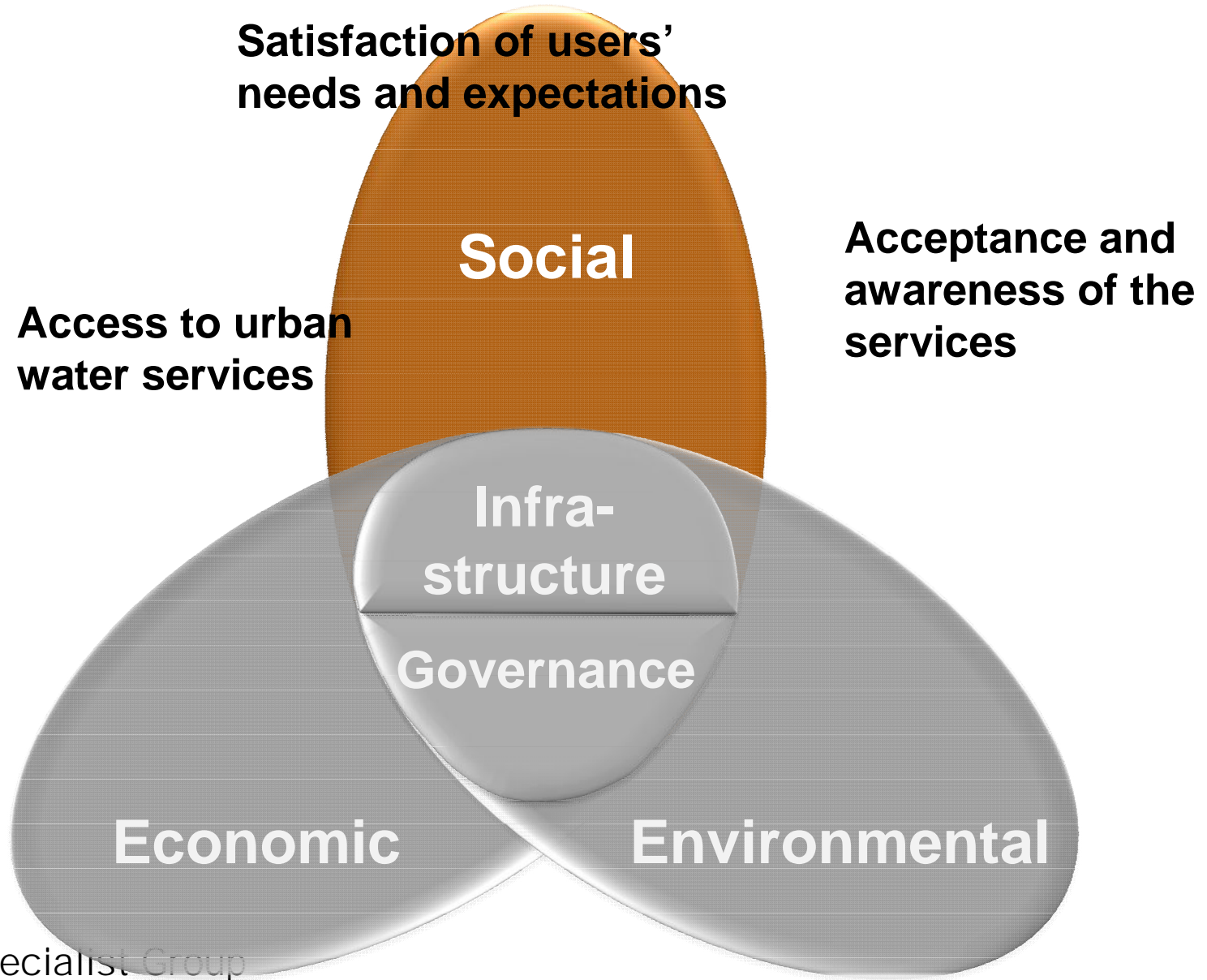
Presentation layout

- Infrastructure asset management – the SAM SG vision
- About SAM within IWA
- Main outcomes from LESAM 2011
- IAM and communication
- Concluding remarks





Specialist Group
Strategic Asset
Management

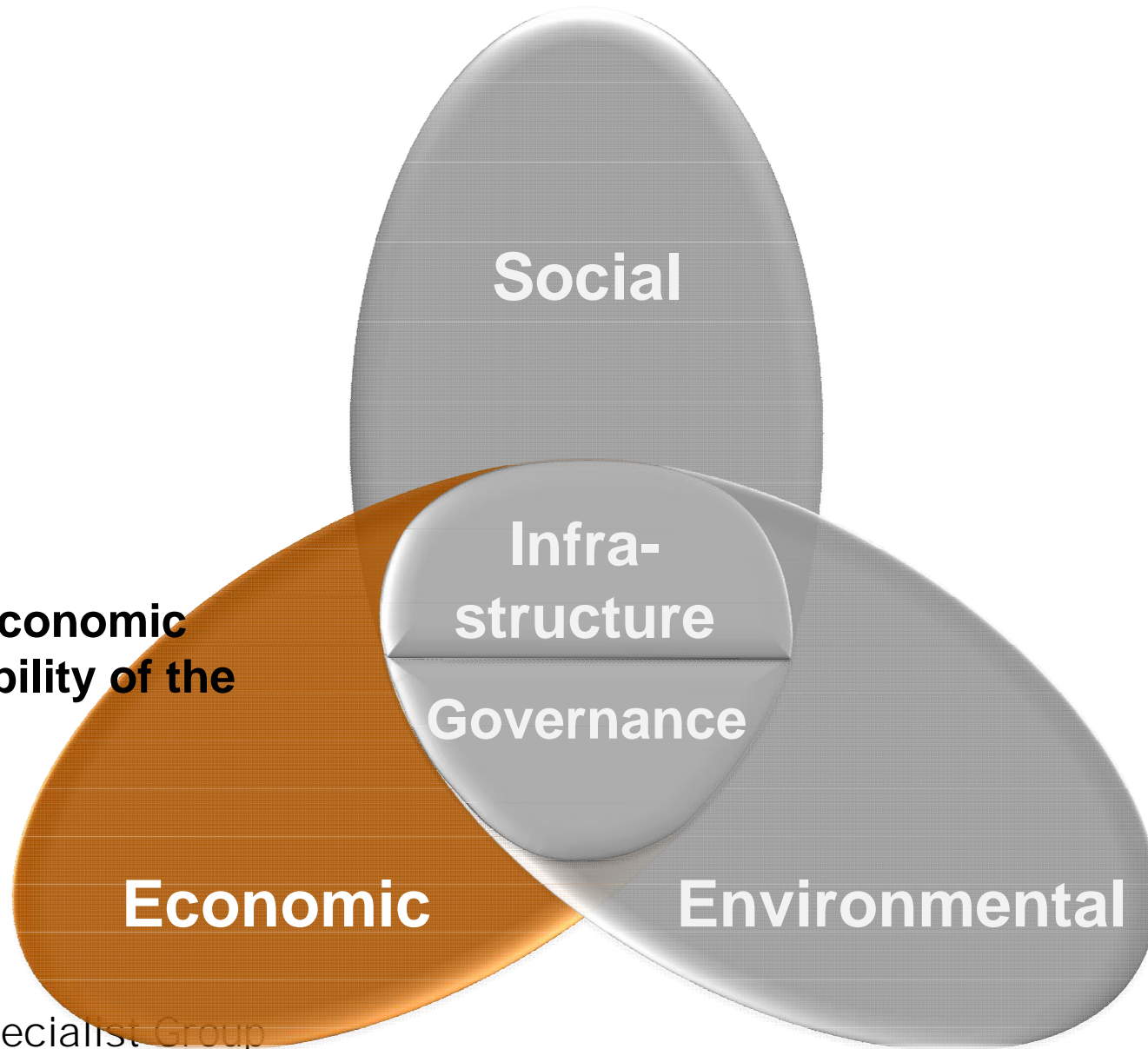


International
Water Association

Specialist Group
Strategic Asset
Management

Water sourced from TRUST (www.TRUST-i.net)

Ensure economic sustainability of the UWCS

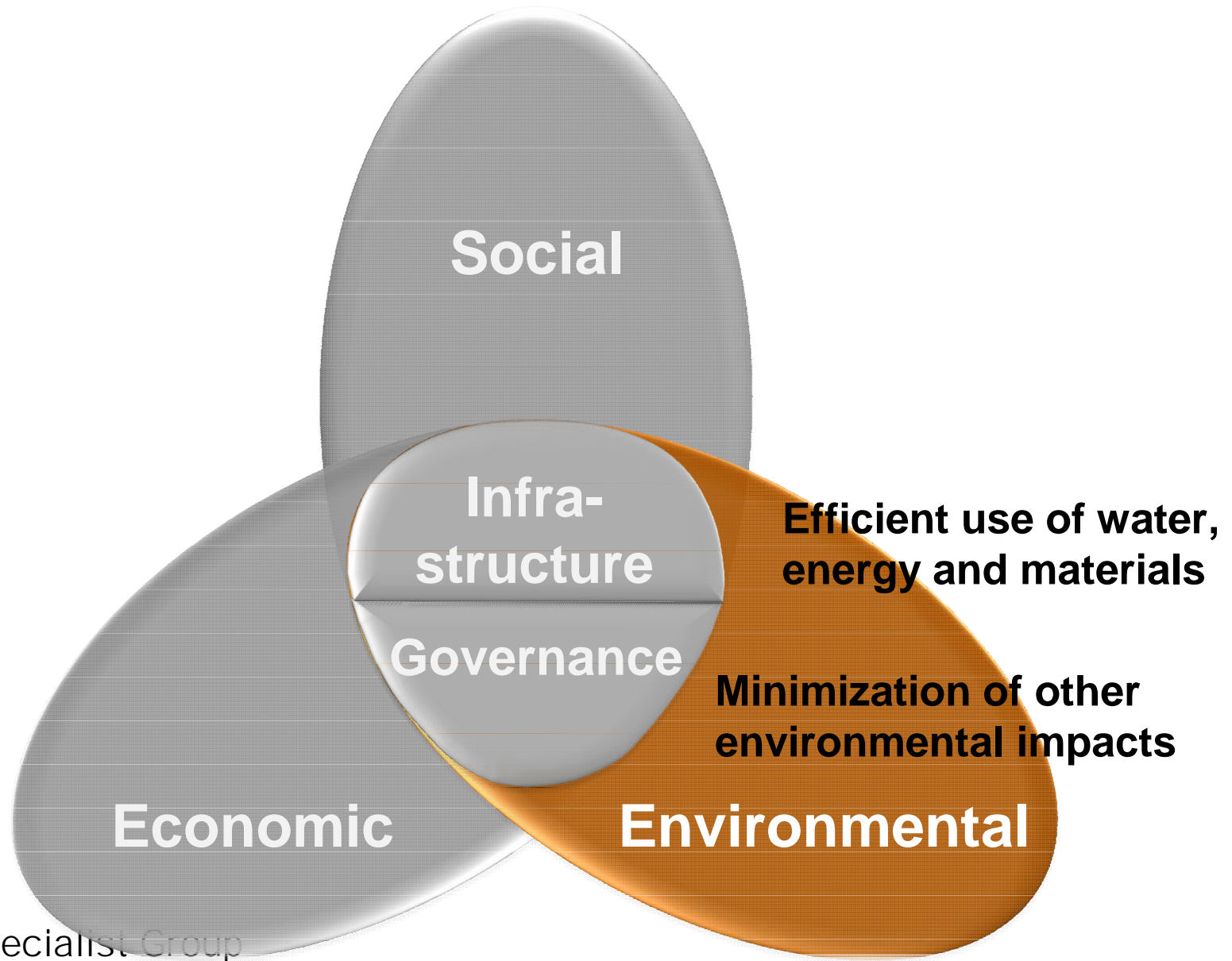


International
Water Association

Specialist Group

Strategic Asset
Management

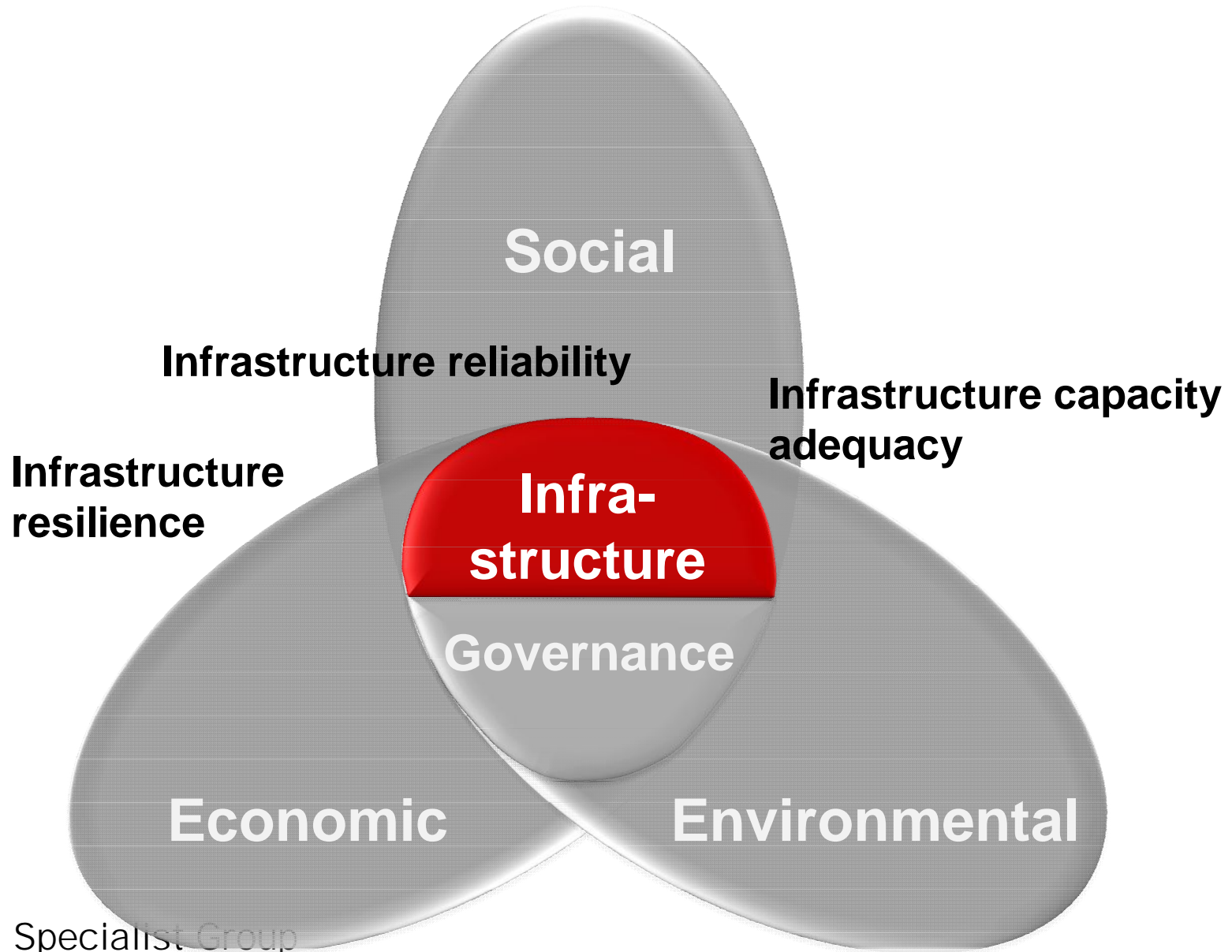
Resources adapted from TRUST (www.TRUST-i.net)



International
Water Association

Specialist Group
Strategic Asset
Management

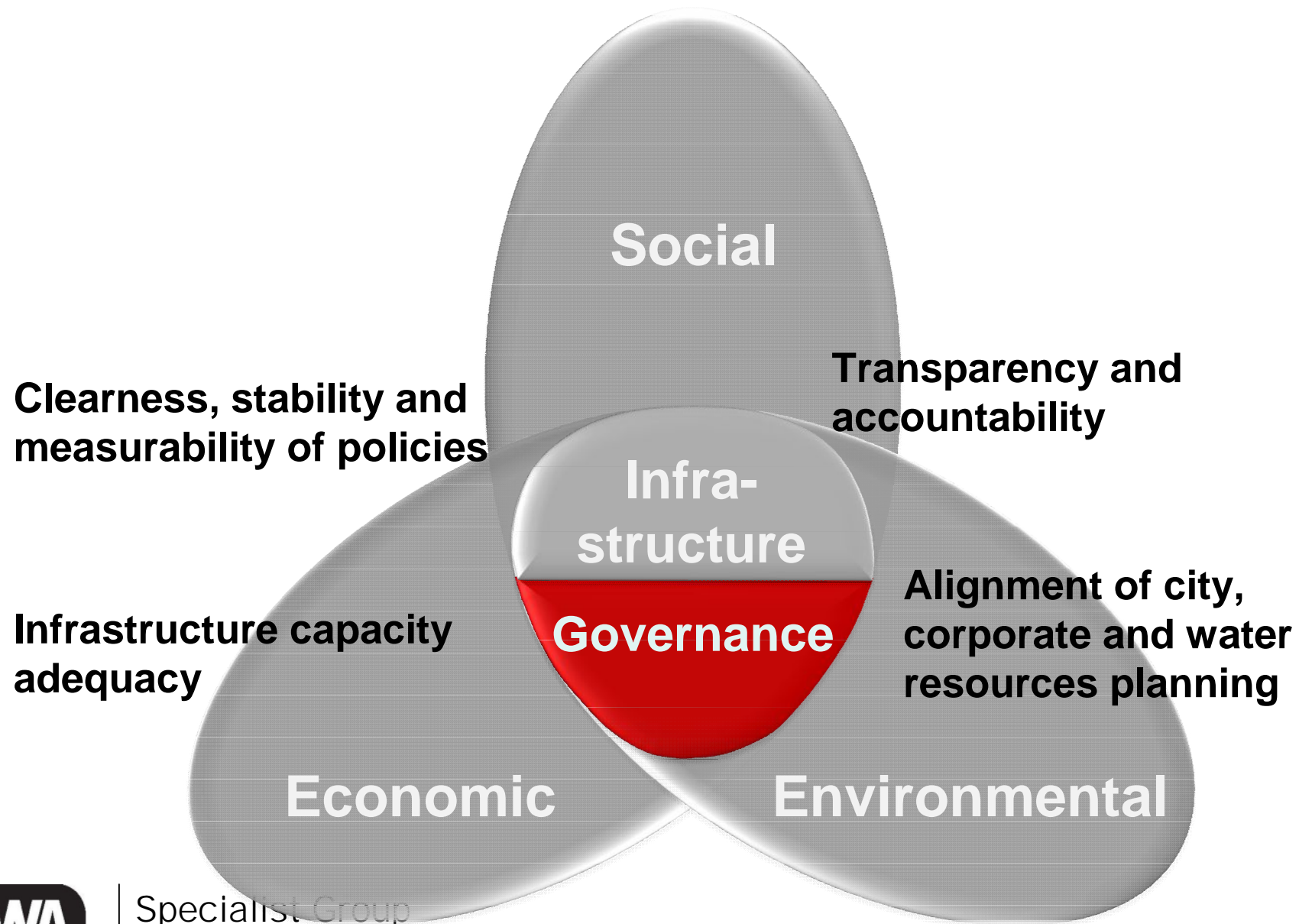
Water sourced from TRUST (www.TRUST-i.net)



International
Water Association

Specialist Group
Strategic Asset
Management

Water sourced from TRUST (www.TRUST-i.net)



International
Water Association

Specialist Group
Strategic Asset
Management

Water Association adapted from TRUST (www.TRUST-i.net)

IAM:

Key requirements for a successful approach

- Global views are adopted
- Users' needs and expectations are duly managed
- Alignment and feedback between decision levels are ensured (strategic/ tactical/ operational)
- IAM methods and decisions used adequately address the service needs, the indefinite life and the system behaviour of the water infrastructures



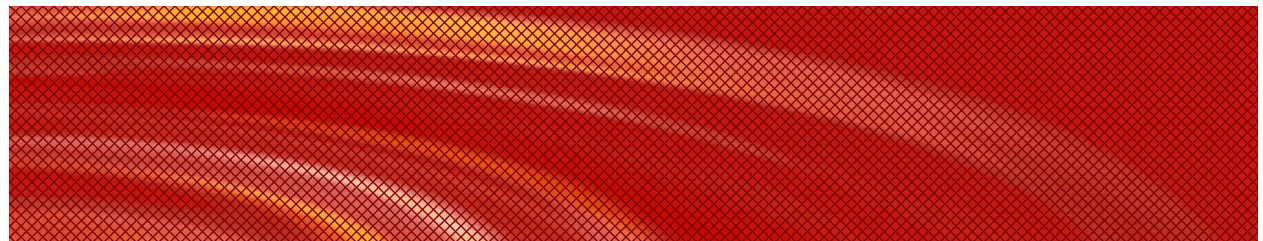
International
Water Association

Copyright © 2009

International Water
Association

Specialist Group

Strategic Asset
Management





CEO



Information managers



Business managers and accounters



Maintenance engineers



Water engineers



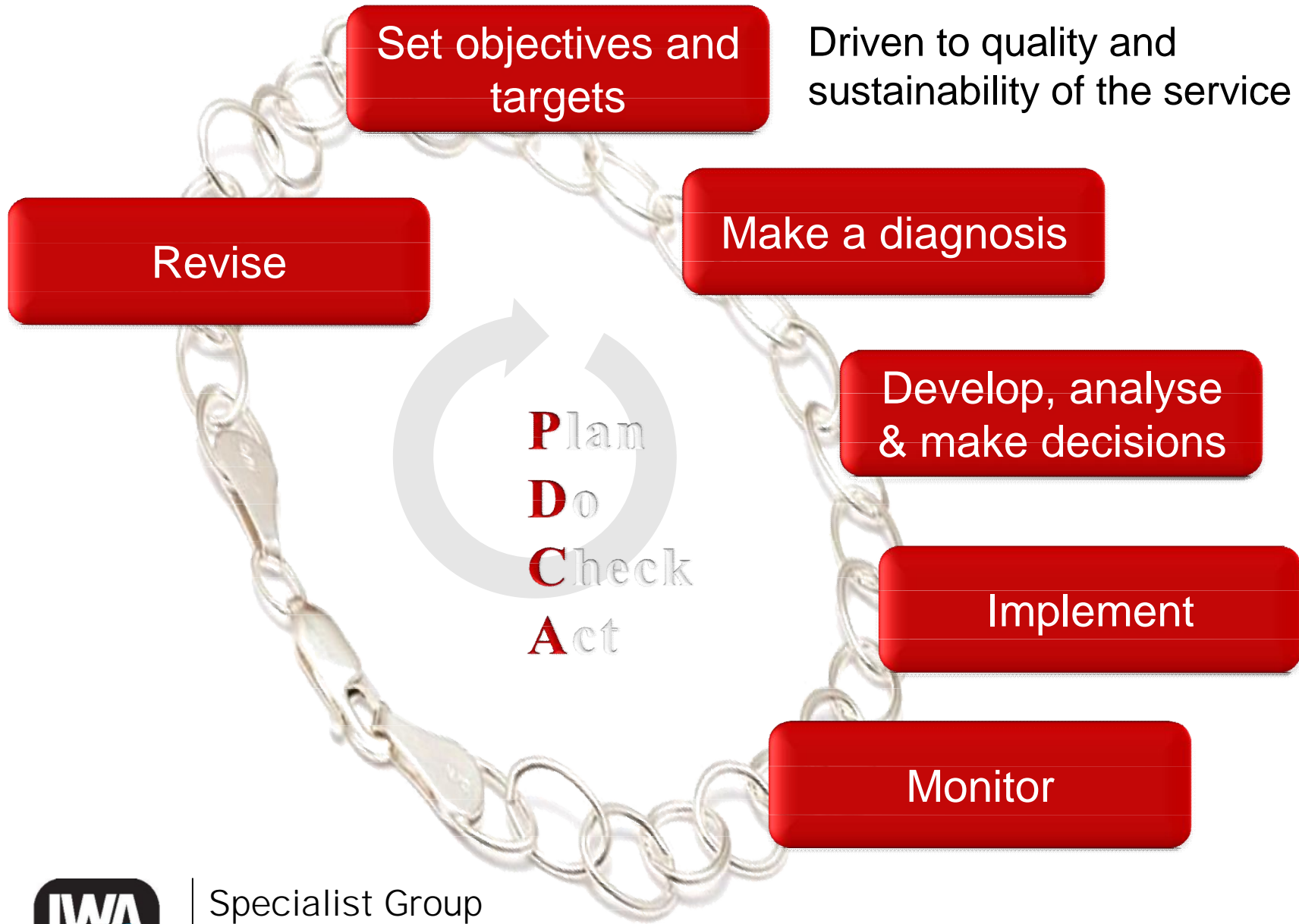
International Water Association

Specialist Group
Strategic Asset
Management

The IAM process is also based on a chain that should be present at **any level of planning and decision-making**

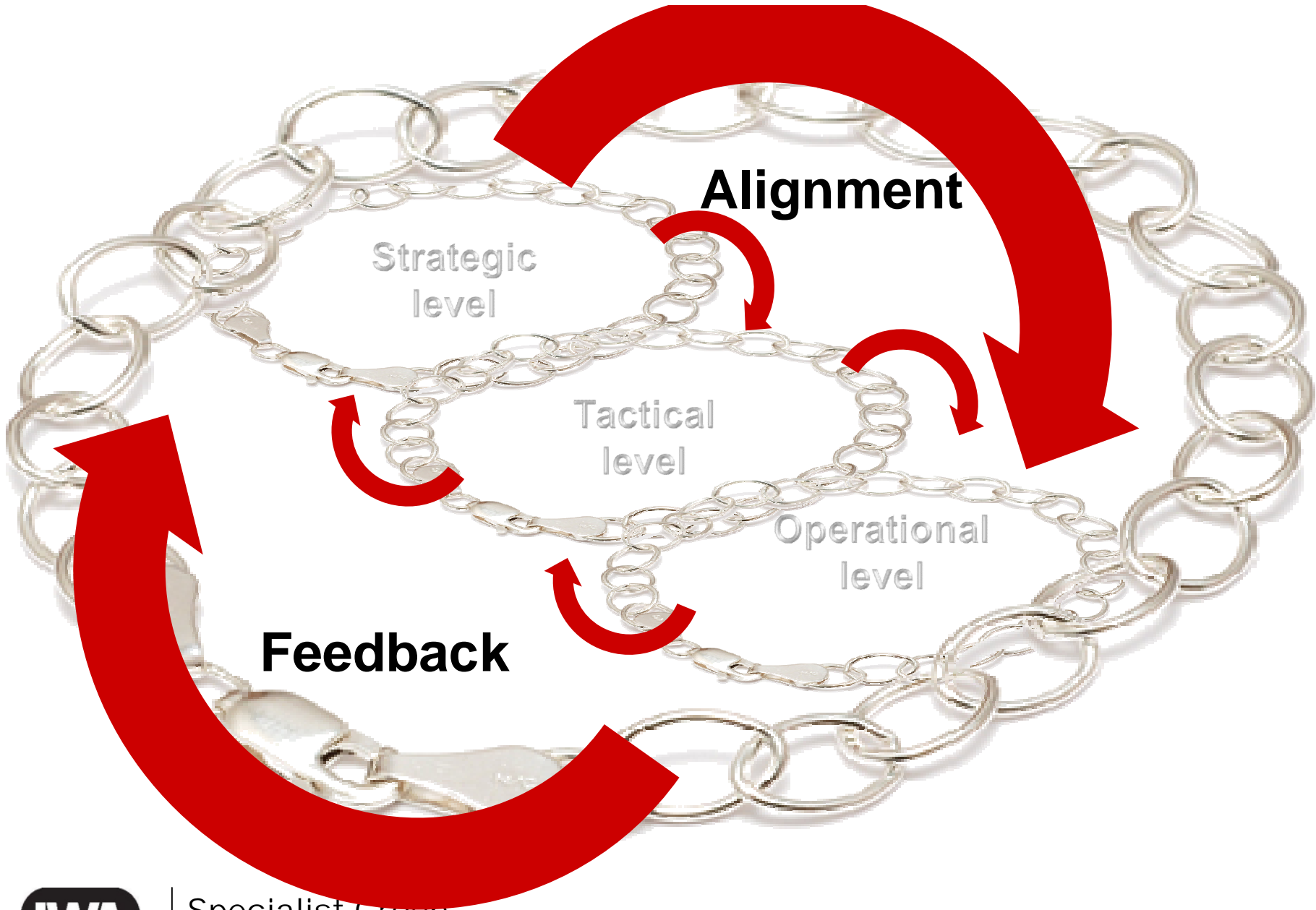


Specialist Group
Strategic Asset
Management





Specialist Group
Strategic Asset
Management



Specialist Group
Strategic Asset
Management

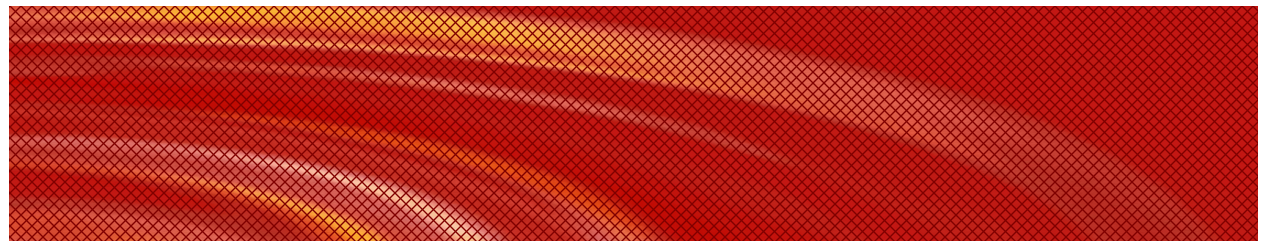
Aiming at balancing

- Performance
- Risk
- Cost

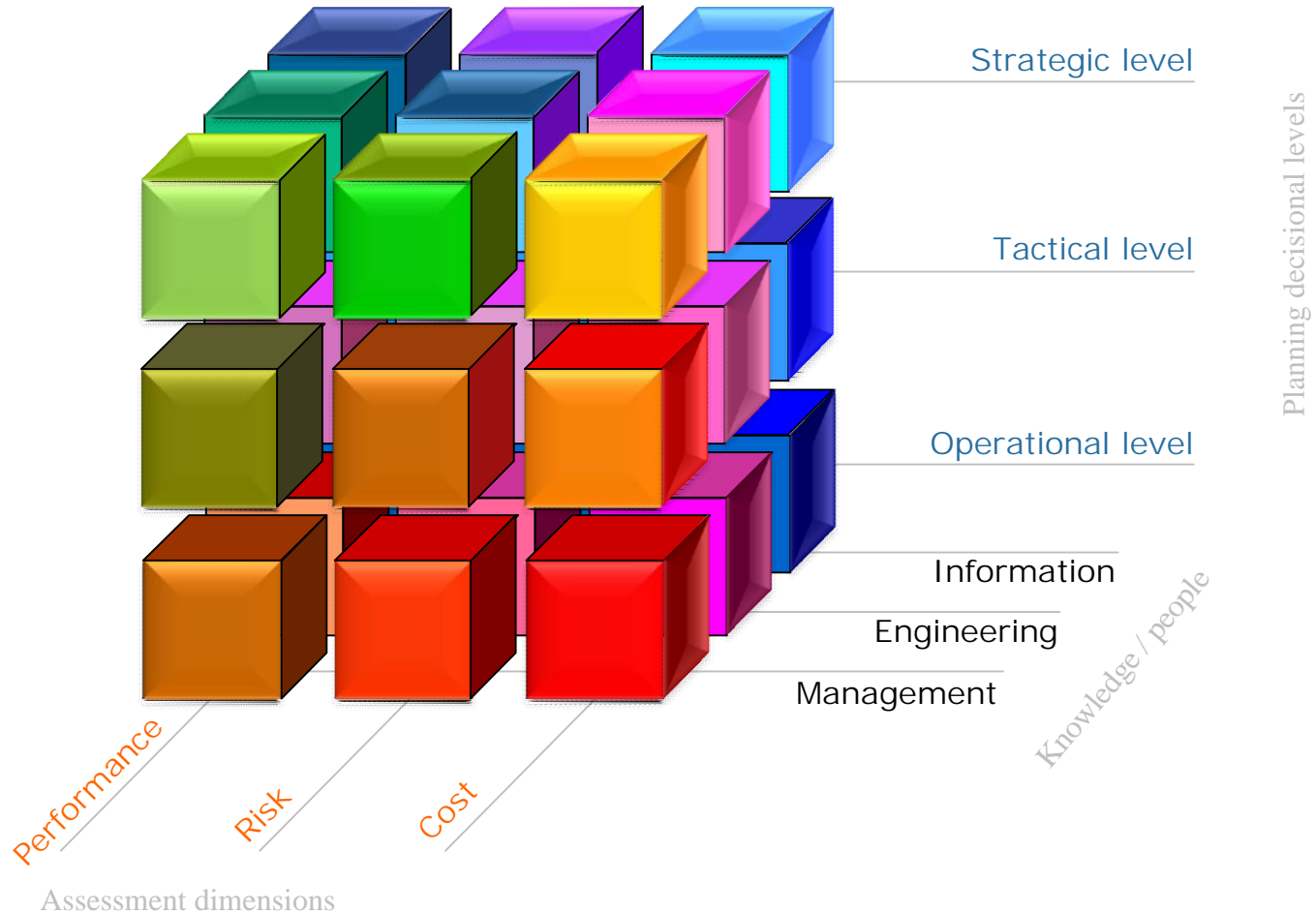
in the long run.



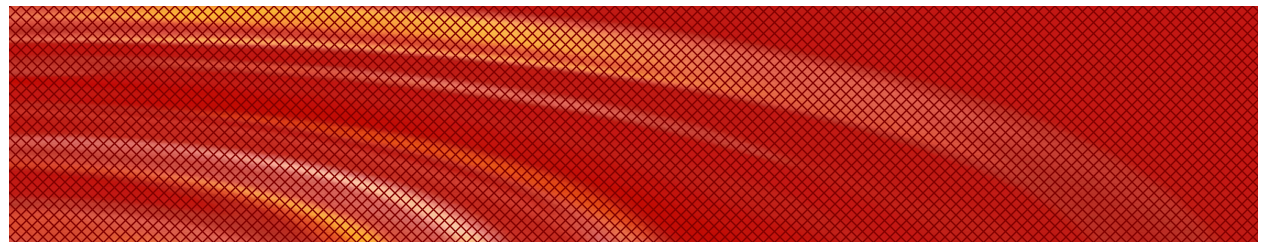
Specialist Group
Strategic Asset
Management



The IAM cube



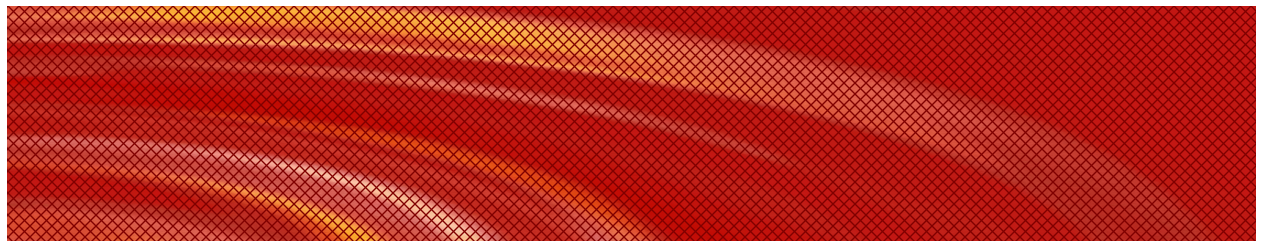
Specialist Group
Strategic Asset
Management



Infrastructure assets

- Essential to provide a specific service
- Not replaceable as a whole
 - service must be provided all time
 - rehabilitation is piecemeal
- Have indefinite lives.
 - Economic or useful lives can only be assigned to individual components

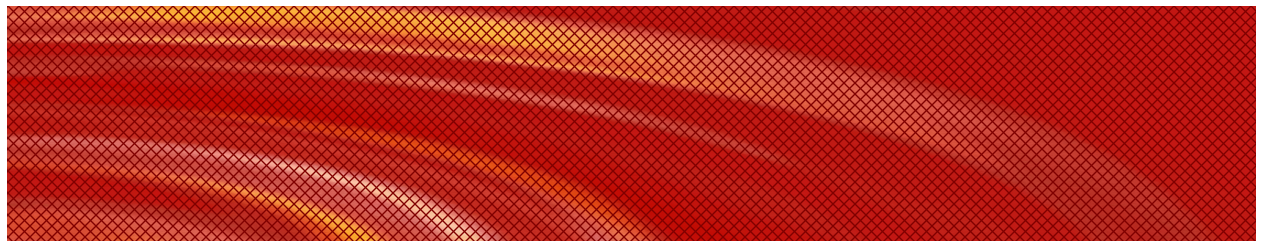
(adapt. Burns et al., 1999)



Infrastructure assets

- Network infrastructures:
 - Cause and effect of deficiencies may be located differently
 - Levels of service cannot be allocated to individual assets
- Urban water infrastructures
 - Natural monopoly
 - Mostly buried (not visible)

SYSTEM
BEHAVIOUR

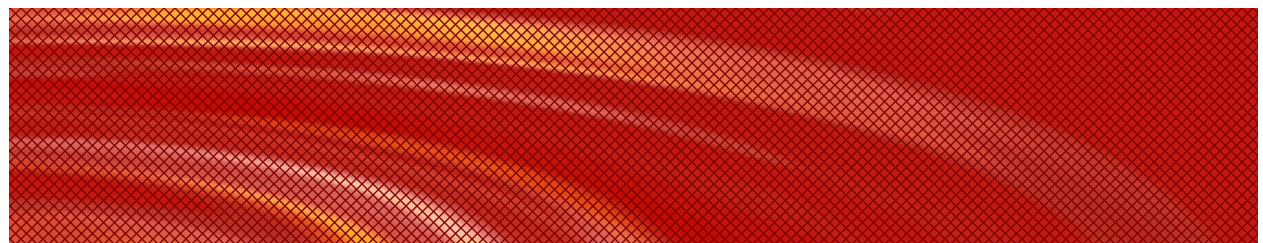


Presentation layout

- Infrastructure asset management
– the SAM SG vision
- About SAM within IWA
- Main outcomes from LESAM 2011
- IAM and communication
- Concluding remarks



Specialist Group
Strategic Asset
Management

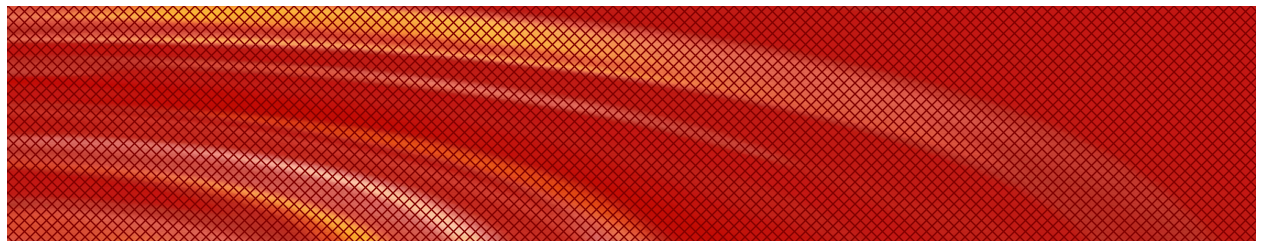


Snapshot of IWA

- 10 000 members in 130 countries
- 500+ corporate members
- 54 specialist groups
- 40 + events in 2011
- 15 Journals
- 40+ books and reports published annually
- Specialist Group newsletters
- WaterWiki
- Key vectors: membership, events, publishing and programs



Specialist Group
Strategic Asset
Management

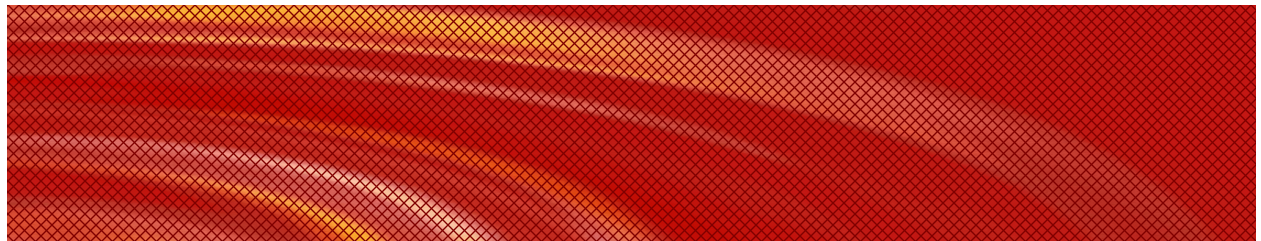


Initiatives relevant to SAM

- Publications
- Programs
 - Innovation
 - Cities of the Future
 - Water and Energy
 - Climate change
- O&M Network
- Specialist Groups:
 - Statistics and economy
 - Benchmarking & performance assessment
 - Water losses
 - ...
 - Strategic Asset Management (SAM)
- R&D Projects



Specialist Group
Strategic Asset
Management



IWA in R&D projects

- SWITCH – Managing Water for the City of the Future (finished 2010)

www.switchurbanwater.eu/

- PREPARED – Enabling Change (2010-2014)

www.prepared-fp7.eu

- TRUST – Transitions for the urban water services of tomorrow (2011-2015)

www.trust-i.net



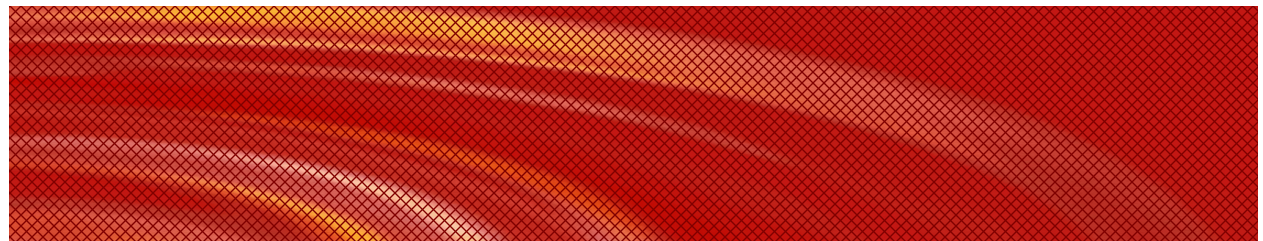
International
Water Association

Copyright © 2009

International Water
Association

Specialist Group

Strategic Asset
Management

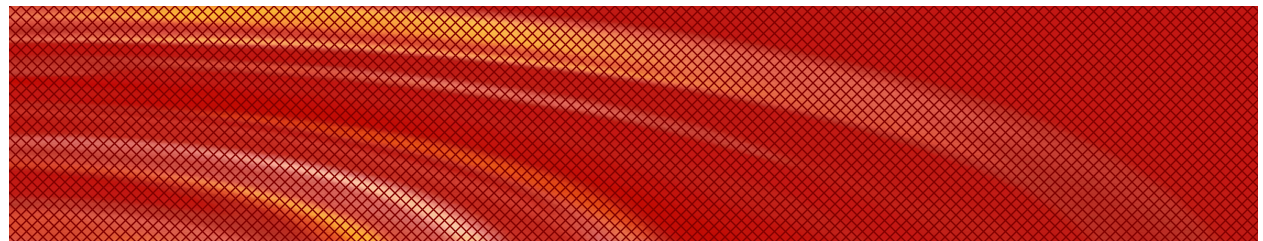


SAM SG Membership

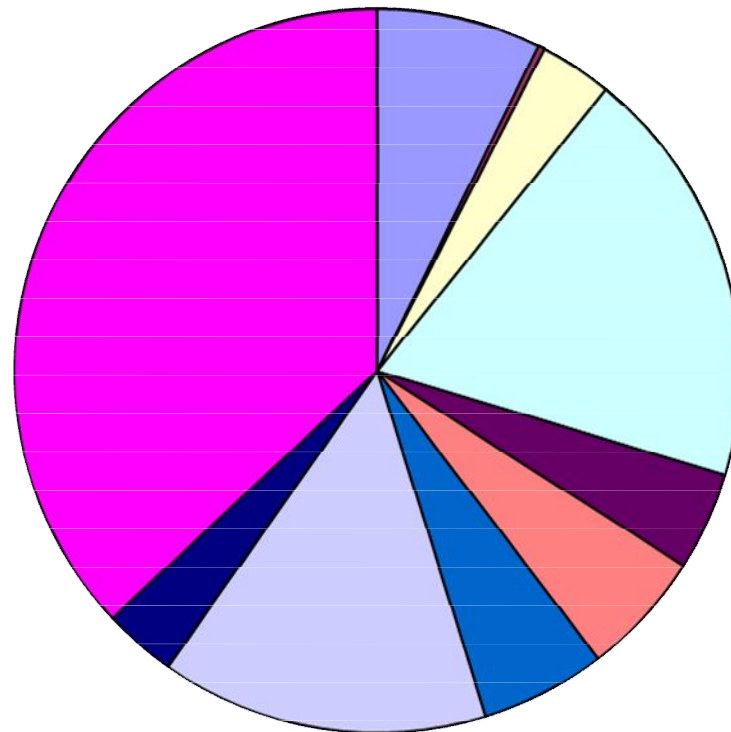
- Individual members: 341
- Nominated representatives of corporate members 349
- Young Water Professionals 30%
(15th/54 SG)



Specialist Group
Strategic Asset
Management



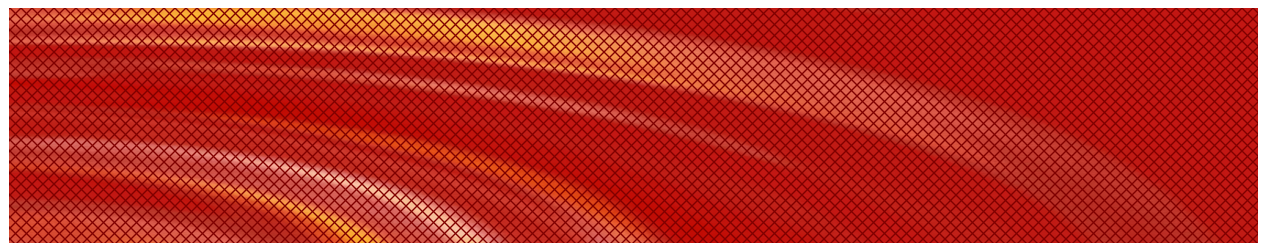
Regional distribution (SAM SG)



- Africa
- Central Asia
- China
- East Asia & the Pacific
- Eastern Europe
- Latin America & the Caribbean
- North Africa and the Middle East
- North America
- South Asia
- Western Europe

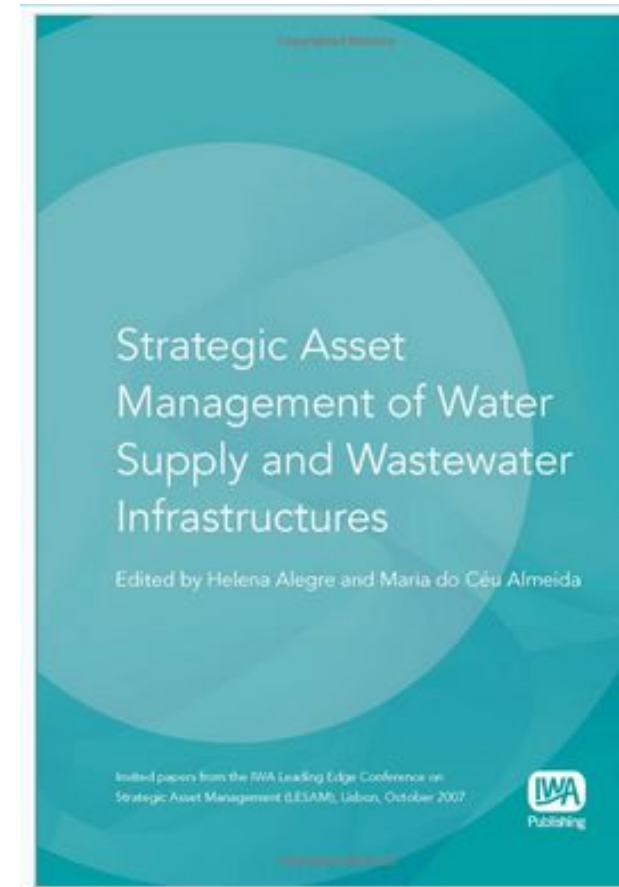


Specialist Group
Strategic Asset
Management

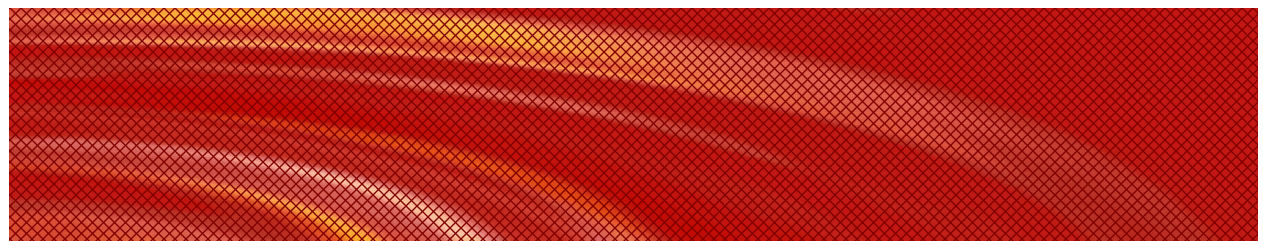


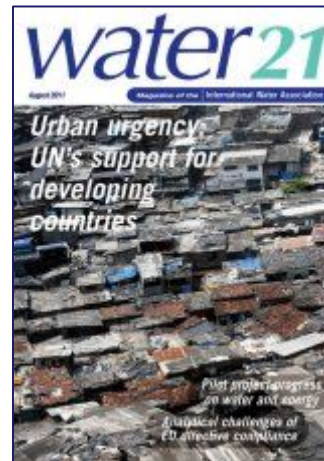
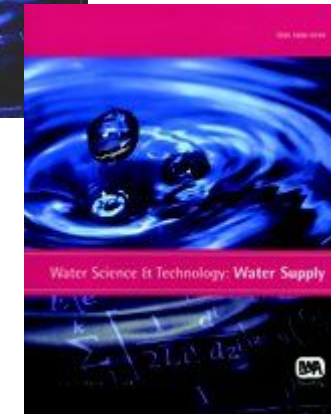
SAM SG's activities

- LESAMs
 - LESAM 2013, Sydney
- Publications



Specialist Group
Strategic Asset
Management





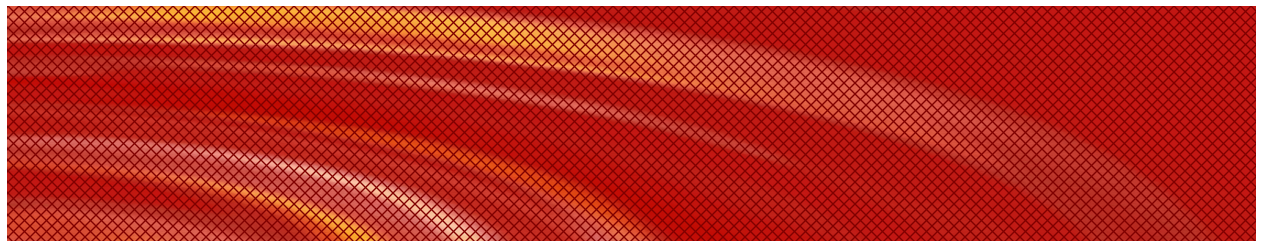
Specialist Group
Strategic Asset
Management

SAM SG's activities

- LESAMs
- Publications
- Other conferences, workshops and seminars
 - Participation in Yokohama
 - Brazil, (India), (China) (2012-2013)
 - SAM SG + OMN, WWC Busan
 - Conference SAM and energy efficiency (SAM SG+ SE SG) Spain 2013)
 - ...



Specialist Group
Strategic Asset
Management

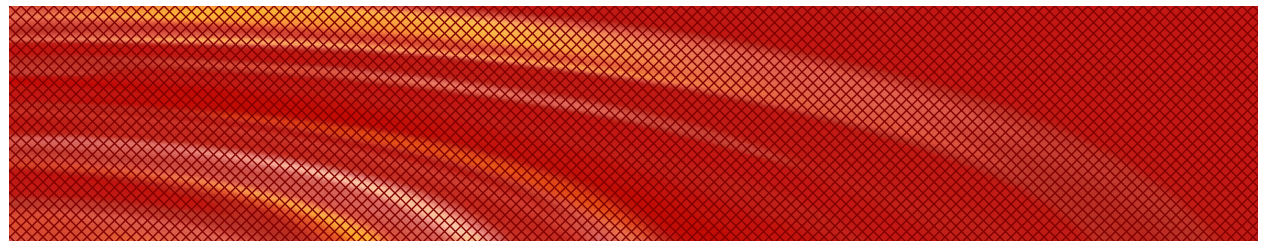


SAM SG's activities

- LESAMs
- Publications
- Other conferences, workshops and seminars
- Keynotes
- Task Groups
- Participation in R&D projects
- Link with IWA Operations and Maintenance Network
 - LAMIC: LESAM 2011 -> Development Conference KL



Specialist Group
Strategic Asset
Management

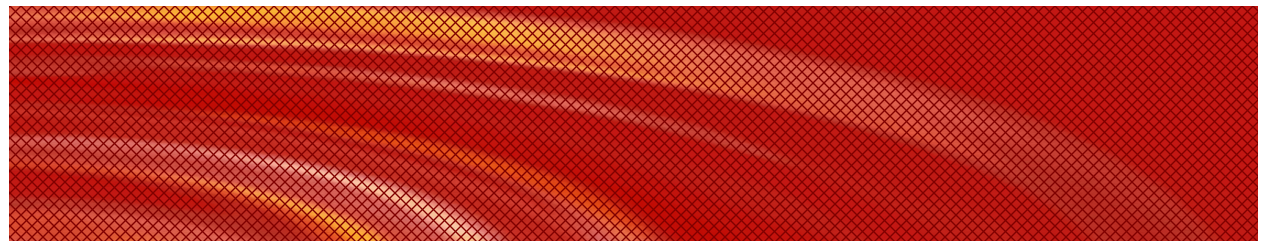


Other (new) initiatives

- Website: <http://www.iwasam.org/>
- Twitter account: [iwasam](#)
- Young Water Professionals
- Training and dissemination materials
- Preparation of a IWA IAM MBP (tba Busan)

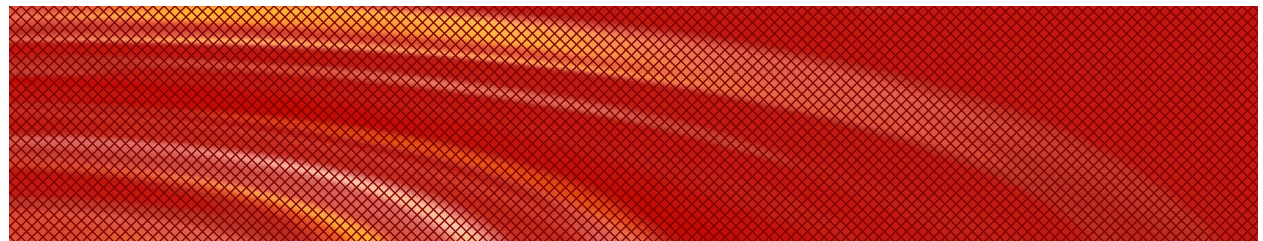
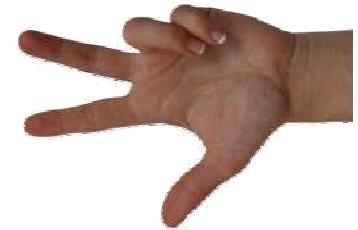


Specialist Group
Strategic Asset
Management



Presentation layout

- Infrastructure asset management
– the SAM SG vision
- About SAM within IWA
- Main outcomes from LESAM 2011
- IAM and communication
- Concluding remarks



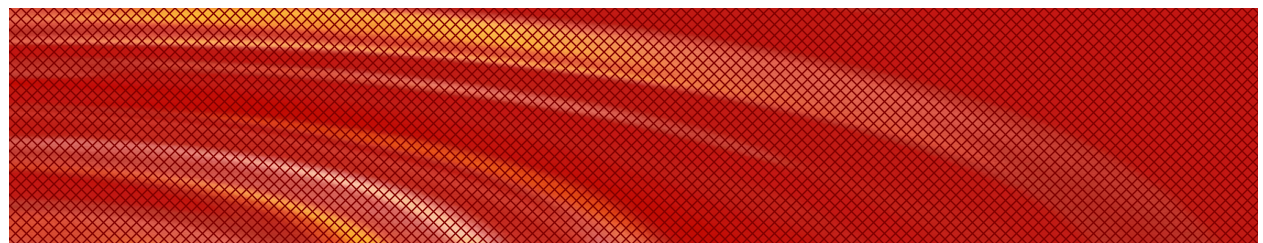
General conclusions

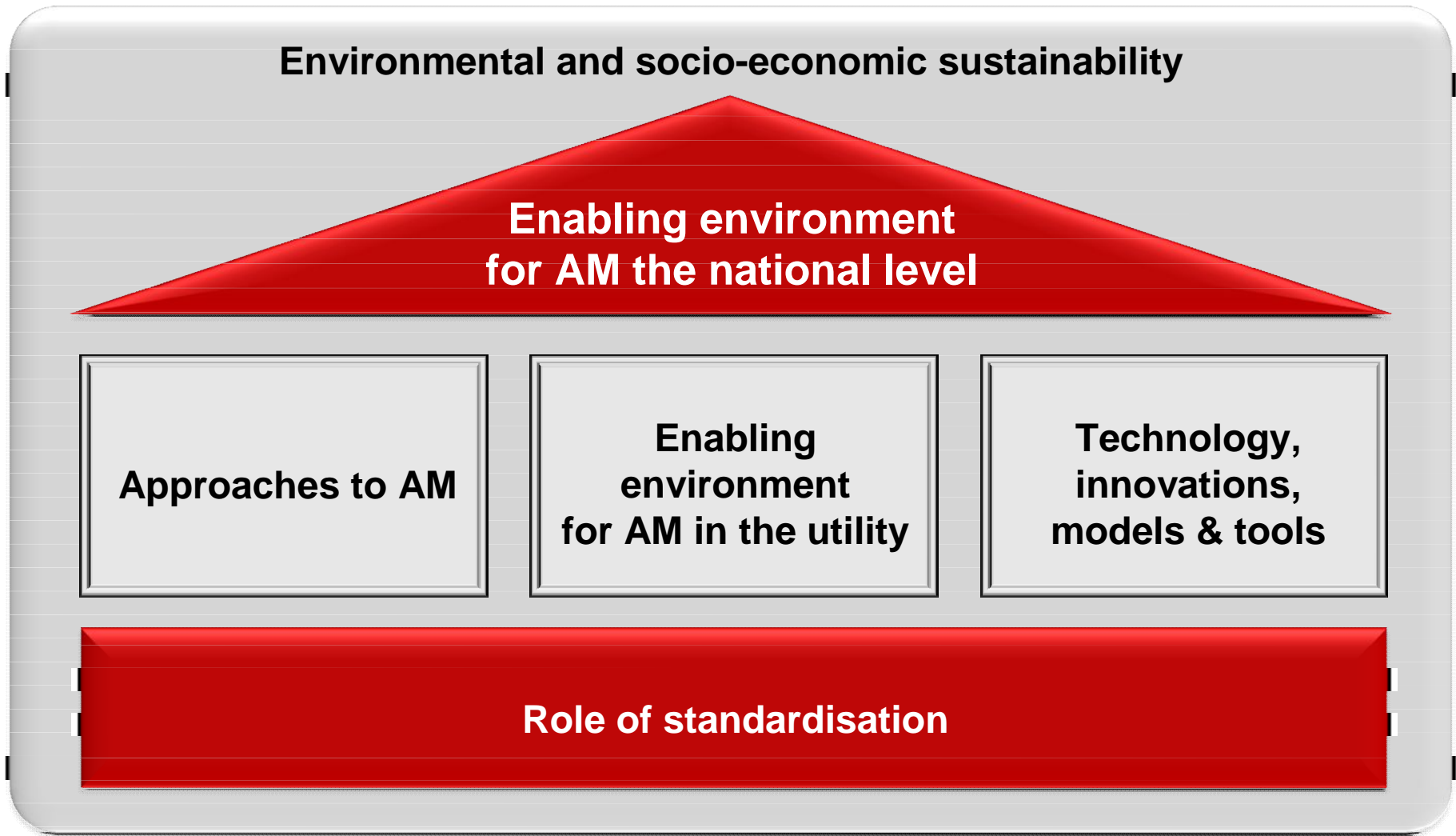
Source: LESAM 2011 final report. IWW (2012)

- Increasingly strong interlinkage of the topics
- Pivotal role of holistic IAM approaches in ensuring resilient, adaptive and sustainable urban water infrastructure.
- Increase of projects that are multi-national & multi-type of partner (R&D, utilities, SME, ...) – e.g., IWA PI, CARE, AWARE, TRUST.



Specialist Group
Strategic Asset
Management





Specialist Group
Strategic Asset
Management

Source: LESAM 2011 final report (www.iwasam.org)

Environmental and socio-economic sustainability

**Enabling environment
for AM the national level**

Approaches to AM

**Enabling
environment
for AM in the utility**

**Technology,
innovations,
models & tools**

Role of standardisation



International
Water Association

Specialist Group
Strategic Asset
Management

Source: LESAM 2011 final report (www.iwasam.org)

Environmental and socio-economic sustainability

Approaches to AM

MAIN CHALLENGES

- Optimisation of service /risk /cost - triangle
- AM concept established, allows for dynamic adaptation
- Motivate and encourage integrated thinking incl. feedback loops
- IT systems and data needs: Value of data vs. costs



International
Water Association

Specialist Group
Strategic Asset
Management

Source: LESAM 2011 final report (www.iwasam.org)

Environmental and socio-economic sustainability

Approaches to AM

WAY FORWARD

- Further develop integrated approaches, applicable to different systems
- Future approaches should allow for system discontinuities
- Incorporate evolving challenges: sustainability, carbon management, resilience, ...

Environmental and socio-economic sustainability

**Enabling environment
for AM the national level**

Approaches to AM

**Enabling
environment
for AM in the utility**

Technology,
innovations,
models & tools

Role of standardisation



International
Water Association

Specialist Group
Strategic Asset
Management

Source: LESAM 2011 final report (www.iwasam.org)

Environmental and socio-economic sustainability

Enabling environment for AM the national level

Approaches to AM

Enabling
environment
for AM in the utility

Technology,
innovations,
models & tools

MAIN CHALLENGES

- Major differences in level of application of AM
- Lack of common framework for AM
- Activate key factors to enable IAM thinking
- Shift from „doing-“ to „think-plan-do-check-act “ mode
- Establish AM as an on-going concept



International
Water Association

Specialist
Strategic
Management

Environmental and socio-economic sustainability

**Enabling environment
for AM the national level**

Approaches to AM

**Enabling
environment
for AM in the utility**

Technology,
innovations,
models & tools

WAY FORWARD

- Provide and spread examples (through reports, visits, collaborative projects, ...): good practice is out there!
- Enthusiasm for AM (learning process, results)
- Recommended tools and reference projects enabling experience sharing



International
Water Association

Specialis
Strategic A
Managem

Environmental and socio-economic sustainability

**Enabling environment
for AM the national level**

Approaches to AM

Enabling
environment
for AM in the utility

**Technology,
innovations,
models & tools**

Role of standardisation



International
Water Association

Specialist Group
Strategic Asset
Management

Source: LESAM 2011 final report (www.iwasam.org)

Environmental and socio-economic sustainability

MAIN CHALLENGES

- From backward analysis to forward looking
- Dealing with uncertainties/errors
- Tools and models including the whole range of assets
- Integrating data from various sources

**Technology,
innovations,
models & tools**

Environmental and socio-economic sustainability

WAY FORWARD

- Sound decisions based on available information and knowledge
- Support data sharing among utilities
- Detailed modelling work in selected areas
- Asset deterioration and system performance
- Prediction of level of service to the customer
- System optimisation (instead of components)
- ...

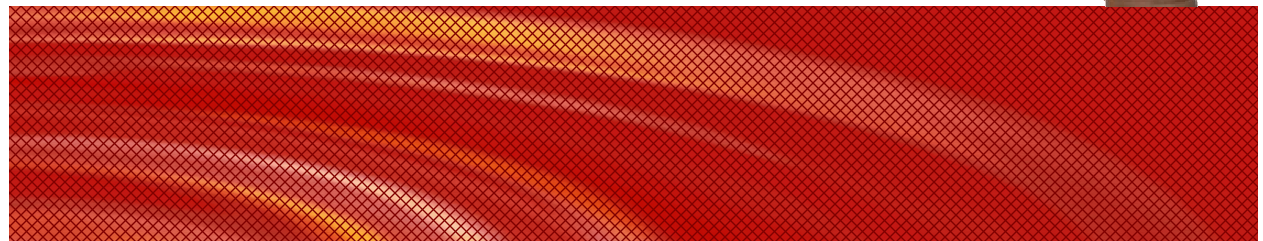
**Technology,
innovations,
models & tools**

Presentation layout

- Infrastructure asset management
– the SAM SG vision
- About SAM within IWA
- Main outcomes from LESAM 2011
- IAM and communication
- Concluding remarks

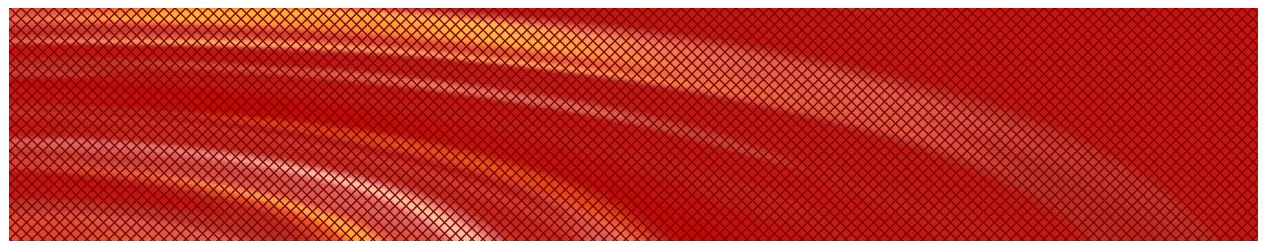


Specialist Group
Strategic Asset
Management



How to communicate between stakeholders?

- Have clear objectives
- Establish metrics and targets for each
- Make them widely known
 - The IWA PI manuals and the ISO 24500 provide guidance
 - There are powerful public domain software applications to assist (e.g. AWARE-P)
- Use the key metrics to
 - Establish a diagnosis
 - Compare alternatives



How to communicate between stakeholders? (cont.)

- Take advantage of the existing leading edge technologies and tools
 - To explore intervention alternatives taking into consideration the system's behaviour
 - To communicate the results
 - To support awareness and negotiation processes



Fail



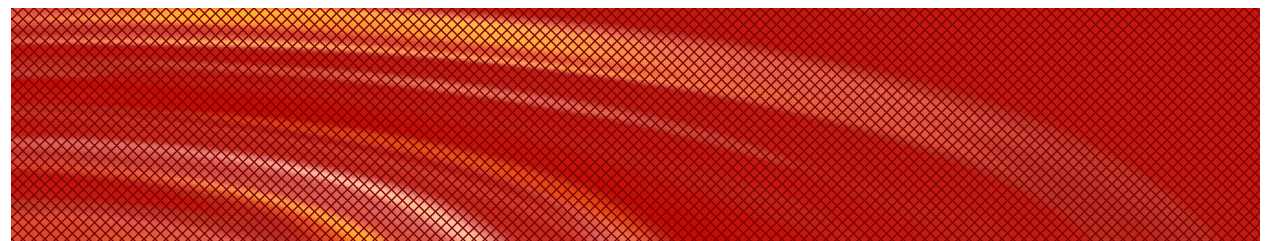
Cimp



Unmet



Baseform

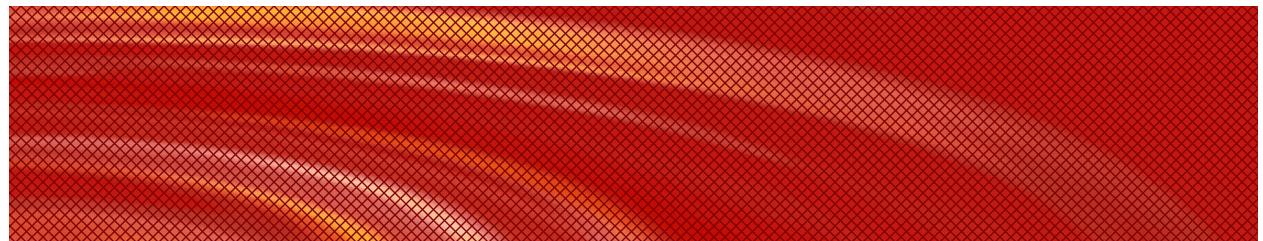


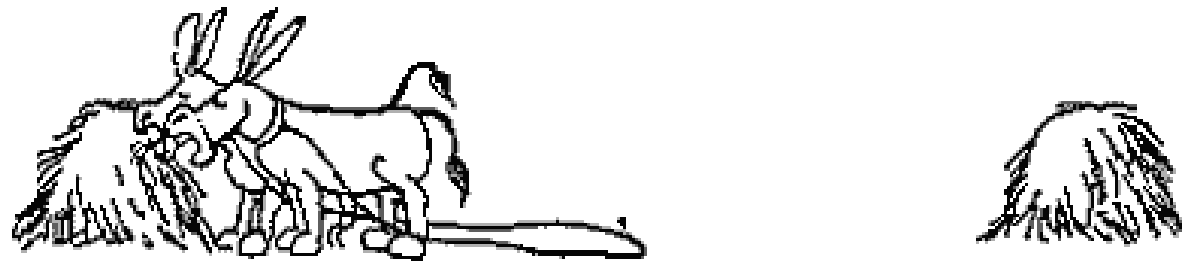
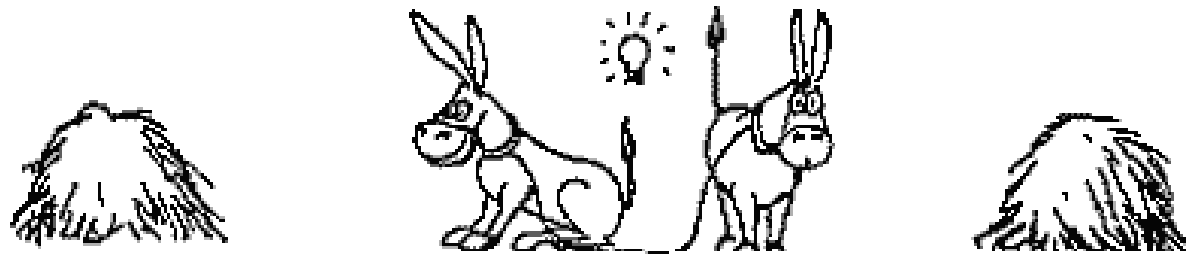
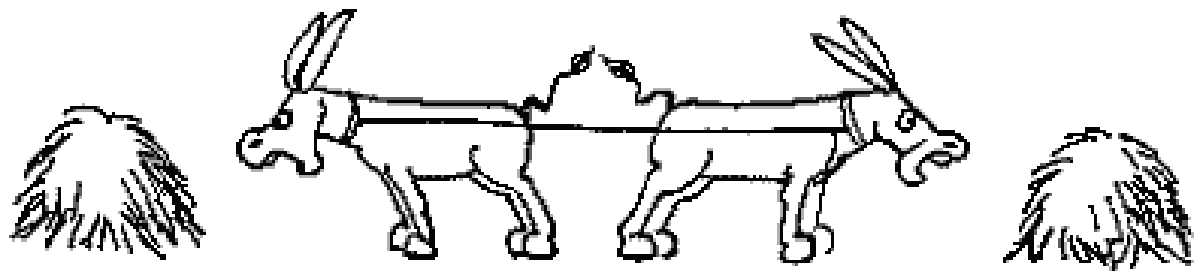
Presentation layout

- Infrastructure asset management
– the SAM SG vision
- About SAM within IWA
- Main outcomes from LESAM 2011
- IAM and communication
- Concluding remarks



Specialist Group
Strategic Asset
Management

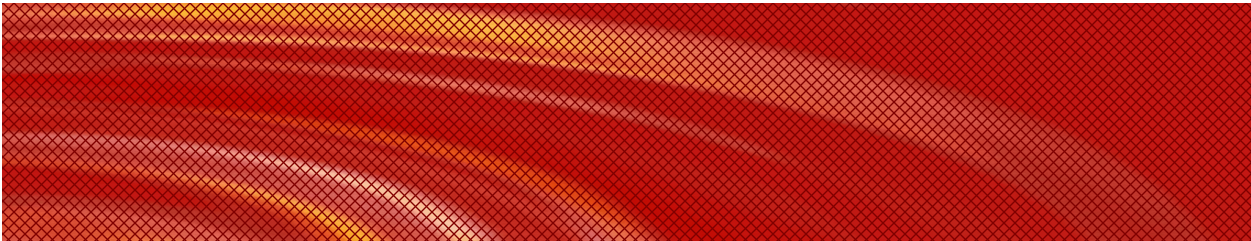






International
Water Association

...alist Group
...ategic Asset
...anagement



The IWA family



$$1 + 1 = 3$$

Contacts:

Helena Alegre

LNEC
Av. Brasil, 101
1700-066 Lisboa. Portugal

Tel. +351 218443626
halegre@LNEC.pt

www.lnec.pt

Key links:

www.IWASAM.org
www.AWARE-P.org
www.baseform.org
www.trust-i.net



Specialist Group
Strategic Asset
Management

