# Managing Adaptive REsponses to changing flood risk

# Establishing LAAs and managing individual needs

# Overview report

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## Summary

Professionals responsible for managing water and flooding systems have always worked in partnership with others. The form and functioning of such partnerships has traditionally focused on delivering structural 'solutions'. Now that the challenges faced by urban society are complex and changing relatively rapidly, it is timely to review how best to establish, maintain and sustain such partnerships. Here recent experiences from the EU INTERREG IVb MARE project utilising Learning and Action Alliances (LAA) is presented.

The concept of a Learning Alliance (LA) is relatively new, although working in partnerships to deliver innovation is a long-standing practice especially in enterprises. Application of the LA approach to improve water system management has become popular in a number of EU funded studies helping to innovate. MARE considers the use of LAs in adapting to changing flood risks.

This report sets out the formation, structure, management and conclusions from WP1 of the MARE project. In MARE, the standard 'Learning Alliance' concept has been modified to include 'Action' in recognition of the need to actually make changes happen. Hence from here on the term Learning and Action Alliance (LAA) is use. Recommendations from activities, outcomes and data analysed support the initiation and continuation of the MARE LAAs from the findings in examining the LAAs in the project. This report details the process and support given to each LAA, defined through interviews and questionnaires and briefly discusses the necessary shift of focus from individual Leaders and Champions to individualised support to the LAAs as entities in themselves. MARE had 4 core LAAs plus an overarching project management LAA. Validation of the processes of LAA establishment and functioning is outlined using results from interviews, questionnaires, training and direct observation. Activities and outcomes in supporting the vision and needs of the constituent Learning and Action Alliances (LAA) of the MARE project are reviewed and an overview of the LAAs' individual visions and recommendations for support are introduced. The interviews and questionnaire were developed to gain knowledge in depth for each LAA and to inform how innovation and continuation of the LAAs could be supported. Recommendations are made based on the outcomes of this process, drawing conclusions about general commonalities across the LAAs and the support required to help share knowledge and best working practices transnationally, together with the development of a programme of tailored support for each LAA.

Much can be learnt from approaches to innovation in practice from other domains such as private enterprise, where innovation is the life-blood of survival. Bringing a behavioural psychology spotlight on to the formation, dynamics and personality of partnerships such as the LAAs in MARE, is believed to be unique to MARE, helping to understand how best to create and sustain effective functioning of such alliances not only in MARE but more widely.

Review of the relative functioning and success of the 6 LAAs in MARE has shown that they can help to provide the capacity building, via active learning, the trust and legitimacy and openness required to deliver the innovation needed to face the complex and wicked problems in managing flood risk. The diverse nature and functionality of the various LAAs, illustrates that there is not one single format for a LAA, each needs to be

locally and contextually grounded and to develop its' own vision and modus operandi.

## Glossary of terms

| | |
|---|---|
| EU | European Union |
| FRC | EU Interreg IVB North West Europe Programme: Flood resilient city |
| FRM | Flood Risk Management |
| Interreg | A European Community initiative that aims to stimulate interregional cooperation in the EU, IIIB ran 2000 to 2006; currently IVB, 2007 to 2013 |
| LAA | Learning and Action Alliance |
| MARE | EU Interreg IVB North Sea Region Programme: Managing Adaptive Responses to Climate Change |
| Municipalities | Body of politicians, governing bodies, academics & stakeholder |
| NVivo | Statistical Analysis Software |
| SKINT | EU Interreg IVB North Sea Region project: Skills, Integration and New Technology |
| SWITCH | EU 6$^{th}$ Framework an action research programme: Managing Water for the City of the Future (2007 to 2011) |
| WP1 | Work Package 1 |
| YHLAA | Yorkshire and Humber Learning and Action Alliance |
| DCLAA | Don Catchment Learning and Action Alliance |

# Contents

# 1 Introduction

## 1.1 Context

The MARE project (Managing Adaptive Responses to Changing Flood Risk in Europe) is a North Sea Region EU INTERREG IVb funded initiative involving municipalities in the UK, Netherlands, Germany and Norway. Its aim is to initiate widespread implementation of adaptation measures to cope with flood risk. Within MARE, platforms of professional stakeholders in flood risk management 'Learning and Action Alliances' (LAAs) have been set up to enable collaborative learning. The alliances include groups of local, regional and national level authorities, knowledge institutes and private enterprises to promote inclusive co-operation between organizations for integrated flood risk management. Each beneficiary within MARE is part of a local/regional LAA whilst the overall MARE team is the core LAA for this project.

The LAAs in MARE were found to be rather like individuals, in that they had distinct personalities and hence each was different.

### 1.1.1 An engineer culture

All partners/beneficiaries in MARE are interested in innovation as they are aware that the challenges faced for the future are very different from the past and new ways of doing things, especially for flood risk management are needed. In the last few decades, the need to move from flood defences to flood risk management (Newman et al, 2011), has prompted new ways of working to 'live with floods' and to attempt to deliver the most acceptable responses to increasing flood risk that satisfy the most stakeholders. The need for new approaches has challenged thinking, especially by engineers, who by training, deliver 'solutions to problems' (ibid; Bell et al, 2012). Managing floods is still seen as 'an engineering activity' by many, especially practitioners and the 'engineer culture' has been identified as a major impediment to innovation in this field (Harremoes, 2002; Cettner, 2012). Despite their lack of training, many engineers believe they can effectively facilitate partnership meetings. This may have worked in the past, but now new ways of working together are needed, both with the public and also between professionals and other organisations.

Many engineers also view working with 'the public' as difficult and a 'necessary evil', rather than as an essential activity. If the revised paradigm for managing flood risks in new ways is to work, then this attitude has to change. There is also a need to recognise that where there are public interactions, partnership working and consensual activities, then expert facilitators or coordinators are needed, with communication or behavioural psychology training. Third party facilitation, for example, can be the most effective at building the skills in: risk assessment; public consultation and relations; external (and internal) communications; and project management (Warner & Sullivan, 2004). The latter set out 'minimum standards' for those offering to help or facilitate partnerships: a professional qualification in some form of 'interest based' negotiation; practical experience in designing and facilitating multi-party workshops, helping to: assess multi-party benefits risks and costs of engaging in partnerships; convening a multi-party dialogue that leads to a robust partnership; building a consensus. For these reasons, many of the LAA meetings in MARE utilised professional facilitators and or experts in behaviour.

Due to increasing flood risks, and reductions in available funding to tackle these risks, a new challenge now posed to professionals, is the need to challenge often long-established norms (Newman et al, 2011). Climate change has exacerbated uncertainty in regard to making decisions and judging when, where and how best to adapt, requires risk-taking on the part of decision makers (e.g. O'Hagan et al, 2006). 'Active learning' can help to develop the capacity to accept different perspectives on risk, uncertainty and performance (Lichtenstein et al, 2006) and to accept and use alternative innovatory responses that differ from traditional practices that formerly applied when external drivers were effectively unchanging (stationary in a statistical sense, Milly et al, 2008).

Breaking the entrapment of traditional approaches requires cultural change in the organisations and the individuals' involved and new visions and framings as to how problems are seen and responses formulated (e.g. Bell & Morse, 2008; Williams, 2011; Cettner et al, *forthcoming*). Learning and Action Alliances can help to do this (e.g. Brown et al, 2011; van Herk et al, 2011) as illustrated in Figure 1 (Ashley et al, 2012).

### 1.1.2 Supporting new ways of decision making

There is a need to support decision makers/making in addressing the new challenges (here of increasing flood risk) that for the first time in recent human history, require active engagement by all concerned to understand and cope with the processes of rapid change. Support is needed to ensure that there is sufficient security in taking difficult decisions so that appropriate levels of innovation are encouraged and delivered. The use of traditional approaches (we have always done it this way) needs to be strongly questioned as to whether these are fit for the purposes of the future challenges. Collectives, such as LAAs can help both

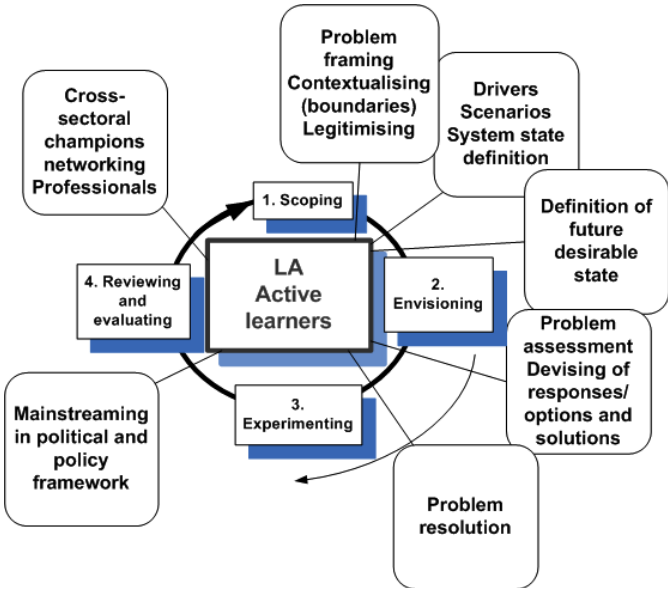



Figure 1 the centrality of Learning Alliances (LAs) to the problem solving process

with ensuring that new and emerging knowledge is considered and in reaching consensual and legitimate decisions.

Various models as to how this might be done have been proposed. Table 1 illustrates the 'five disciplines' that have been brought together by Bell & Morse (2008) that are key to the encouragement and development of 'learning organisations'. These include learning, or active learning, on the part of individuals as well as the organisations within which individuals' work.

Examples from the observations of the MARE LAAs and their relationship to the LO concepts in Table 1 are given in the last column. LOs differ from

LAAs in that they do not explicitly set out to be innovative nor are they necessarily project focused. Therefore, LAAs share the traits of LOs shown in Table 1 and in MARE, go beyond the LO into Action. Specialists in the field of water management must broaden their perspective in order to meet the challenges and uncertainties of rapid and creeping urbanisation, demographic and climate change, economics and public expectations. Innovation in integrated and adaptive water management can be classified in terms of 3 domains:

1. Design, planning and engineering of measures and strategies;
2. System (performance) analysis, including of measures and strategies; and
3. Governance (Van herk et al., 2011a).

A Learning Alliance is a governance arrangement that can be considered a 'governance' innovation in itself and can stimulate innovations in the other two domains (ibid). There is a need for supporting and learning networks and partnerships, looking at incorporation into urban systems as a whole. For this to happen, barriers to the adoption of sustainable water management practices need to be identified and overcome. As most water management in Europe is delivered by municipalities and in some cases utility companies, the best examples from private enterprise of innovation can help to inspire those responsible for delivery of these new ways of thinking and working.

In Yorkshire (England), a common forum for learning and action in relation to flood and water management has evolved into Learning and Action Alliances (LAAs), a concept adopted across the MARE project. These alliances, which are essential components of the MARE project have national, regional and local dimensions. Internationally, these and partner LAAs, are being utilised to engender local, national and transnational learning.

As the MARE LAAs incorporate academic and practitioner partners, there is great potential to advance cognitive learning via their functioning: "….*collaborative research enhances such learning, but only under specific conditions. In contrast to some of the literature, we found that only intensive collaboration in which all participants have an equal contribution to and influence on the research, significantly enhances the uptake of model results and the development of consensus*." (Saarikoski, 2000). Here "*Cognitive learning can be defined as the mental process that results in changes in the perspectives of stakeholders*." (Raadgever et al, 2012). Whereas a MARE Learning and Action Alliance (LAA) is set up:

**To provide a common forum for learning and action in relation to flood and water management and also to cultivate a culture of active learning on the part of the participants.**

**Table 1 The five disciplines for development of learning organisations (LO) (adapted from Bell & Morse, 2008)**

| Discipline | Definition | Applied to | Expected positive outcome | MARE – observed examples in LAAs |
|---|---|---|---|---|
| Systems thinking | In terms of links and loops for e.g. the water cycle, or for positive or negative feedback | Contexts where cause and effect are unclear (wicked problems) | Description and insight | Collective problem definition and legitimisation within a systems perspective |
| Personal action | 1. articulate a personal vision<br>2. seeing (reality) clearly<br>3. making a personal commitment to the outcomes wanted by the individual | Where change processes threaten individuals' ability to cope | Empowerment | Emergent leaders (not always the same individuals)<br>Inspiring individual visions<br>Deemed authority from collective support by LAA |
| Mental models | Of the world or sub-part as seen by the individual | Any active learning situation | Clear self-analysis | Developed shared framing by discourse within the LAA |
| Shared vision | 1. the organisations' destiny<br>2. the organisation was founded for a 'deep' purpose<br>3. not all visions have equal validity<br>4. there is a need for a collective purpose<br>5. there is a need for open fora at which individuals can frankly express their views<br>6. creative tension is useful and to be encouraged | Contexts of dramatic change | Organisational clarity of purpose | Strong sense of place of home organisations' role in defining and addressing problems and delivering innovation<br>'Chatham House[1]' rule in LAAs allow individuals to step beyond their home organisations' position where necessary<br>strongly held views and visions often opposing in LAAs |
| Team learning | Through dialogue, discourse and skilful discussion – to achieve 'collective mindfulness' | Contexts of team development | Group consensus and legitimisation | Shared outcomes often beyond the normative solutions |

[1] Chatham House rule: participants are free to use the information received, but neither the identity nor the affiliation of the speaker(s), nor that of any other participant, may be revealed (in any subsequent meeting or media).

There are a number of alternative definitions of LAAs that have been used in MARE, for example, the definition above was developed by the YHLAA, whereas the DCAA had the aim of the: "Delivery of catchment scale surface water management planning through development of a common approach between stakeholders by improvement of stakeholder capacity, integrating activities and encouraging information sharing." The definitions and associated terms of reference vary to suit the context and aims for each particular alliance, illustrating the variability in form and function of the various alliances in the MARE project and beyond.

In MARE Work package one (WP1) scoped, defined and supported the formation and continuation of the LAAs. The analysis of the LAA processes presented here identified specific areas of need to support the LAAs, arising from interviews, questionnaires, observations and workshops. The differing degrees of success and innovatory approaches of the four nationally based case focused alliances were supported through a socio-psychological perspective in terms of risk propensity of members, the structure of the LAA and the influence of specific LAA 'personalities'. Experience from the establishment and operation of these LAAs is presented here and from this it is concluded that there is no single blueprint for an ideal LAA. Nor is their establishment and continuing operation straightforward.

## 2 Learning Alliances - a Mechanism for Change?

There are many forms of collectives for learning, such as the Learning Organisations (LOs), outlined in Table 1 (e.g. Senge et al, 1994). Nowadays, systems based approaches and qualitative logical framework approaches are recognised as being the only way to deal with complex or wicked problems. These approaches recognise that the problem solver or decision maker is part of the frame of the problem and the solution and *not separated from this*; i.e. taking an impartial, 'objective' stance to decision making is not possible other than in certain trivial cases. Many technically based professionals have yet to come to terms with the need to think differently from the reductionist, supposedly independent observer of the past (Bell & Morse, 2008; Cettner et al, *forthcoming*).

Learning Alliances (LA) are a management innovation that emerged from the private sector as strategic alliances that can help *inter alia* to provide the means to address the five disciplines for LO development as in Table 1. LAAs provide the means for the exchange of knowledge and expertise to help an enterprise improve its performance and competitive edge, i.e. taking action to innovate (Ghosh, 2004).

Learning Alliances take many forms integrating complexities of context, organisational and social expectations, aims of stakeholders for learning and objectives including multi-disciplinary perspectives. The flexible framework of a Learning Alliance has been observed in a number of recent projects and learning gathered in many different countries. **Sustainable Water Management Improves Tomorrows Cities Health** (SWITCH) is one of these projects. The project was unique as it was the first to promote the learning alliance approach in the management of the urban water cycle (Smiths et al., 2009a).

This section discusses Learning Alliances as a whole and establishes some common transferable lessons that have emerged from SWITCH and MARE. The SWITCH project was a five year experiment focused on some of the key sustainability challenges in urban water management which completed in 2011 but has learning alliances that *live on*. In a number of

cities around the globe, it set out to test what was needed for a transition to more sustainable urban water management through a combination of demand-led research, demonstration activities, multi-stakeholder learning, training and capacity building (Butterworth et al, 2011). Thus a great deal of learning was acquired through the five-year process that can be paralleled with the four year learning in MARE.

As seen in the activities of the SWITCH and MARE projects, the vast array of differing alliances: from 'strategic planning alliances' in Accra (creating a water framework)[2]; the Yorkshire and Humber LAA looking at implementation of new regulations[3]; community and school engagement in Belo Horizonte to engage with demonstration projects[4]; The City of Bergen through 'cities of the future' to develop cultural consciousness[5]; the research studies conducted in Alexandria to inform the city's IUWM and the water companies master plan[6]; and in Dordrecht the multi-level safety plan[7] (van Herk et al, 2011), all had and in many cases, continue to exhibit, individual objectives and 'personalities'. From this it is clear that there is **no single unique model or form of LAA**.

Although differing in nature and objectives, there are common lessons to be learned from the SWITCH and MARE projects, one commonality in both is succinctly expressed here: "*learn together and learn to work together"* (SWITCH, 2011). In SWITCH this described stakeholder engagement, however, from MARE observations this may reflect the whole alliance process. From the initial engagement stages, of exploring networked projects/initiatives already established to interlink with or gain respect from, or to enable exchange to develop historical cultural knowledge of an area and it's established social or political decision processes and organisational norms; through to developing the right internal and external communication style and reflective framework that is specific to the 'personality' of that particular alliance and its members. Engendering the activities carried out so that these will not "*vanish from the collective memory*" (SWITCH, 2011).

"*Adaptive management is learning to manage by managing to learn*" (NeWater, 2005)[8]. Constant monitoring of LAA activity is necessary as reflected in the more successful LA designs in SWITCH cities, which emphasise the significance of process documentation and reflection sessions within and for the LAs. This type of reflection was integral to WP1 in MARE in gaining understanding from each of the municipalities' regarding their individual LAA visions and the specific needs in each, also providing space for open dialogue; developing productive communication pathways that inevitably prevented some conflicts and helped resolve others that were unavoidable. For example in MARE, this meant changing the language in a risk tolerance questionnaire in order to avoid hindering or even blocking participation in the research for the Dordrecht stakeholders; in response to feedback on cultural meanings that were attached to some of the risk terminology.

[2] http://switchurbanwater.lboro.ac.uk/outputs/pdfs/W6-2_CACC_PRS_Accra_LA.pdf
[3] http://www.ciria.com/landform/pdf/2012/e12501_mark_young.pdf
[4] http://switchurbanwater.lboro.ac.uk/cities/4.php
[5] http://www.mare-project.eu/partners/1/laa-bergen
[6] http://switchurbanwater.lboro.ac.uk/cities/2.php
[7] http://www.mare-project.eu/partners/3/laa-dordrecht

[8] http://www.newater.uni-osnabrueck.de/

## 2.1 The phases of LAA development

The formation and characteristics of the LAAs in MARE have been described elsewhere (Ashley et al, 2012) based on initial reviews of the four city-based alliances and the over-arching project alliance. There are 3 stages in the life of an alliance:

1. Establishment
2. Functioning
3. Sustainability (continued functioning)

At each stage the relationship between the established institutional and governance structure (i.e. the formal decision making processes) is important and defines how effective the LAA can be in effecting change. These 3 stages are considered further in the following sections.

### 2.1.1 Establishment

The setting up of a LAA will be driven by a core group of instigators with a reason to form the LAA. In MARE this was following the already successfully functioning alliance in Dordrecht (van Herk at al, 2011b). The MARE overarching alliance was initially set up to develop the project proposal, bid for the funding and then define the precise work programme. The other 3 'city' based LAAs were established in Sheffield/Rotherham (Don Catchment Alliance, DCAA) (described in detail in Ashley et al, 2012); Bergen and Hannover. The process of establishment is described elsewhere (ibid). The establishment also included a process of wider stakeholder analysis (Ashley et al, 2013) and the rapid forging of trust between the participants. Each of the 4 MARE LAAs were different, comprising different local contexts, ranges and types of participants suited to the challenges and the interests of participating organisation and individuals but all aimed at delivering innovation in flood risk management planning. Establishment of LAAs, in SAWA as well as MARE, entailed discourses about the value, function and legitimacy of an alliance, time commitments (and perceived wasting of this by 'too busy' participants) and freedom of the alliance to innovate and take risks in influencing the usually separate decision making processes. Of the 4 core MARE alliances, only the DCAA was not focused on a particular project, rather on an entire river catchment, with the aim to innovate regarding integrated river basin planning for the Don river. The other LAAs focused on their respective cities and to a lesser extent, surrounding regions. The DCAA, although independent, included representatives of the key decision makers, the Environment Agency and Yorkshire Water. Neither organisation participated in the intended way, being protective of their corporate responsibilities and decision making powers. The DCAA was from the outset, seen by these organisations as an information imparting and exchange vehicle. In contrast, the Dordrecht and Bergen alliances were active learning vehicles, developing innovatory ideas, alongside and within respectively, the formal decision making processes (Dudley et al, 2013). In one of the LAAs, a hierarchical structure meant that operation was strictly controlled from the outset by the key decision makers; constraining opportunities for open and frank active learning to develop innovation.

All alliances were formed via workshops and group activities. There was also a separate alliance formed in England, the Yorkshire & Humber Learning and Action Alliance (YHLAA), which was pan-regional; hence the DCAA was a smaller jurisdiction sub-alliance within the wider regional alliance. Within the context of INTERREG projects, influence on national policies was deemed an important function of the LAAs. Hence legitimacy in the eyes of national institutions and governance structures was also

important. This legitimacy had already been earned by the Dordrecht alliance prior to the MARE project (van Herk et al, 2011a) and it was influencing policy in the Netherlands. Initially, the YHLAA also influenced policy in England especially via an online e-portal for municipalities, whereas the Bergen alliance has steadily developed a high national profile in Norway, such that it is influencing how Norway adapts to climate change in areas beyond only flood risk. In Hannover the Alliance includes regional (Lander) representatives but is primarily City focused on how to develop a flood risk strategy.

In the first stage of establishing an alliance it is essential that a vision is formulated. This may also be accompanied by terms of reference. The vision of the overall MARE LAA was to: "contribute to the development of a framework and resources by [building] and demonstrating a practical, transnational methodology to implement urban Flood Risk Management" (http://www.mare-project.eu/). In Hannover the vision was to be derived to support the City Strategy Vision 2020 – urban planning. Hannover has a large administration with good knowledge in different divisions; the problem was seen as how best to share the knowledge between divisions? The LAA members to deliver this included the Federal State, Agency of federal state, Regional body, City and others providing Scientific advice.

### 2.1.2 Functioning

Delivering on the visions, often based on terms of reference, legitimacy, mutual respect and trust are the primary characteristics of a successful LAA, as for any partnership or group activity (e.g. Das and Tang, 2004). Throughout the assessment process of the functioning of the LAAs, it was found that trust was clearly seen by all participants as the most important characteristic in the deliberations within the LAA, as with trust: "Not everything has to be negotiated, some details can be kept aside for later, not everything has to be written down and agreed upon by the constituency of the representatives in the process" (van Woerkum et al, 2007). Legitimacy from the usually separate, established decision makers in recognising the useful role the LAA can have in providing innovatory ideas and in active learning is also essential.

Each LAA included leaders (not necessarily drawn from those who established the alliance), facilitators and champions. The leaders assumed roles appropriately to the context and challenges faced; i.e. there was invariably not one single leader, rather a group who assumed leadership on different issues. Leadership which was imposed and 'top-down' as in Hannover, was not conducive to innovation and such arrangements in alliances operated in this way are in fact indistinguishable from working groups or advisory panels, i.e. not true LAAs: "It is very difficult, because if the leadership is too structured and rigid you feel inhibited" (quote from a member of the Hannover alliance). Leaders needed to inspire: "They get people to do what they want and you do it due to his/her presence. I don't like delegation from a controlling top down approach, people need to be respected and trusted to do their jobs. These characteristics are essential in making me feel included in the LAA" (Don Alliance). Facilitators and champions also have important roles, the former ensuring meetings are set up properly and function well; champions are all members of alliances in the role of spreading the innovation message to the wider world (Van Herk et al., 2011b).

Not having time to participate in the LAA events is often a problem for many of the key participants. Therefore there needs to be clear beneficial outcomes that make these players prioritise their involvement, i.e. can actually save them time overall. Moreover, this is a continuous challenge:

the benefits need be emphasised continuously and new benefits can be added or reformulated to nurture the interest of existing and new participants. All LAAs have seen fluctuations in participation and commitment from members and project related work was especially effective at sustaining interest. The YHLAA for example, comprising mainly municipal water engineers, has provided a vehicle for participants to engage in new regulations and standards, providing a consensual alliance response as a group to consultations and draft regulations regarding flood risk management in England. As well as learning from one another, this co-generation of formal responses can obviate the need for individuals' to respond by themselves to such consultations. Part of this process involves 'telling stories together', i.e. hearing others' experiences and developing a consistent narrative as to how proposed regulations would unfold in practice. Also, the institutional and personal barriers should be surmounted, enabling participants to present their own opinion and not only of the institution they are representing. Each participant will have different expectations of the purpose and outcomes of a LAA. This 'framing' by individuals' and also by the organisation they belong to and may represent, needs to be understood (Lems et al, 2012). They need to feel respected, listened to and be part of the group if their interest is to be maintained. Leaders, coordinators and facilitators need to prepare well for this. Traditional 'engineering' technocratic approaches to devising flood risk management schemes are nowadays rarely appropriate (Newman et al, 2013) due to the need to engage widely to deal with the complexity of the issues. The best facilitators of LAAs are usually not engineers, although there are exceptions. Professionals with a social or behavioural science background are recommended for this role. Their core skills enable the best to be drawn from LAA participants and for each to be given individual respect and mutual trust to be cultivated. Behavourists are also better able to understand the appetite for innovation, i.e. willingness to take risks (See Introduction), the core need for an effective LAA (Dudley et al, 2012, and 2.1 below).

To be effective a LAA has to be able to move beyond the norms and regulatory constraints and innovate; without this there it has no purpose. The Dordrecht alliance has shown how this can be done and why it is so important, providing innovatory options for a development outside the dike ring in the City (van Herk et al, 2011a). In turn, an effective LAA challenges restrictive regulations and practices, pushing the boundaries into the novel areas needed to face the complex challenges now faced in water management.

### 2.1.3 Sustainability

Maintaining interest is a major requirement of continuing LAA activity. Given that 'active learning' is a primary need for all professionals and decision makers to cope with rapid social and environmental changes, a LAA can provide a vehicle for this. However, experience from MARE shows that sustaining interest is best done via a specific project focus. When one project has been completed, a new one needs to become the focus of attention. The wide scope of the DCAA, the catchment, was in part responsible for the collapse of this alliance; although key staff losses also contributed. Follow-on alliances focused in specific projects in Sheffield and Rotherham appear to be more sustainable, complemented by the pan-Regional YHLAA. The loss of leading and facilitating individuals in the DCAA also illustrated the fragility of any LAA that has not developed sufficiently to become independent of particular people.

Above all, for individuals to continue to commit to a LAA, there needs to be clear rewards for the use of their time in the form of new knowledge,

project outcomes and innovatory ideas. To sustain an LAA these rewards need be communicated and nurtured continuously, especially in transition phases between implementation, policy or research projects. Ideally within a context of mutual trust, legitimacy and shared responsibilities an effective alliance can function for many years, as illustrated by the Dordrecht alliance. Of course, the participants, the vision, goals, needs and challenges will change with time, as will the 'personality' of the alliance (Dudley et al, 2012). The Dordrecht alliance has started a new demonstration and research project by focusing on investment planning for FRMPs that has been inventoried as a joint emerging policy and research interest. In parallel, this inititative has already received a policy pilot status from the Dutch Delta Programme (Zevenbergen et al, 2012).

## 2.2 Common Transferrable Lessons

### 2.2.1 Overview of the MARE alliances

Each beneficiary within MARE was part of a local/regional LAA whilst the overall MARE team was the core LAA for the project. Many of the MARE LAAs are continuing although the project has finished and at least two of the core project LAAs have expanded considerably since the start of the project, influencing national policies in Netherlands and Norway respectively. The core English LAA suffered from economic stringency and contraction in the constituent Municipalities resulting in the loss of two key members and collapsed as they had not built resilience into its structure by creating shared ownership amongst the wider partnership, although a wider Regionally based alliance has continued to function. It should be noted in England that Sheffield City Council has effectively formed a multi disciplinary LAA around the development of the Lower Don Valley project. Subsequently, Rotherham MBC established a multi disciplinary team to manage flood risk within a wider context. The next stage in the YHLAA, much affected by workload caused by the current year's flooding, continues to exist in a "virtual" state through emailing and other forms of networking, but the outcomes from of the INTERREG work will be fed back into it during the next year and the opportunity to maximise the benefits through the formation of a nested series of alliances as envisaged at the start of MARE will be explored.

The Hannover LAA has continued to function, although this has a hierarchical structure and does not appear to function in the way that a LAA was envisaged, providing an open and free environment to formulate innovation, it has led to innovation but only in regard to locally adopted ideas from international MARE partners. The Bergen and Dordrecht alliances have been extremely successful, being able to create truly innovative options to deal with flood risk management and also to influence national policies.

### 2.2.2 Stakeholder Engagement

Here, who needs to be in and/or associated with the LAA is considered. LAAs will contain constellations of individuals and organisations represented by individuals. LAAs may also need to interact with other formal and informal groups of individuals or organisations.

Due to the complexities evident in the many variants of types of alliance there is not one set of rules or guidelines for the process of intra- (or inter-) alliance stakeholder engagement, it needs to be flexible. However, there does need to be some structure or the alliance may fail at the very early stages due to anarchy. Some criticisms are that the alliance can be too theoretical: "*Too easy to say let's do that, needs more boundaries,*

*from the beginning it was too open, it made it hard to budget*" (Hannover). "*Generic so it is useful but not so generic it's useless*" (UK) …"*We have a lack of defined processes*"…"*to put it to them it would have been such a theoretical framework I don't know whether they would have grasped it as useful* " (UK). Ensuring there is a general understanding of aims and objectives towards a common goal or vision will support motivation and individuals and organisations in 'buying in' to the process and the outcomes from it. Clear benefits and extensive networked opportunities should be established early in the process. Also at an early stage, skilled facilitation and individuals whose characteristics give them a propensity to lead are all essential elements to multi-stakeholder interactions. Within SWITCH this was not recognised as a priority initially, funding was not allocated and it was assumed that the research part of the project would engage stakeholders organically. As the project developed it became evident that this was not the case and those alliances that had specific facilitators and budget to engage were more successful and productive than those that did not make this a priority. Such problems were not apparent in MARE.

### 2.2.3 Leaders vs Facilitators

Leaders are crucial to the establishment of learning alliances and often are skilled, established, specialists in their areas who are motivated individuals with differing competencies, capacities, visions and perspectives. What is apparent is that the innovations in practice required to deliver the appropriate responses to future uncertainties and pressures such as climate change, were brought about (or blocked) as much by the policy and higher level decision makers as the leading practicing professionals. Organisations may exhibit innovatory approaches and be willing to experiment and take risks in innovation but this is usually as a result of key individuals (leaders and champions) within the organisation convincing the decision makers to take risks, i.e. to do things differently from the past (Taylor, 2008).

As touched on previously in the SWITCH project, skilled facilitation is frequently underestimated and overlooked, members perceiving it is a matter of communication within meetings and something that will develop organically as the project develops. However, as seen in SWITCH, facilitation is necessary to the core establishment and continuation of any alliance. Supporting and highlighting the potential social capital, connecting individuals across disciplines, departments, organisations, institutions and not least across cultures. Skilled communication requires specialised self-awareness and cultural sensitivity; and relies upon presenting information and knowledge in varying formats. Culminating in the production of strategic plans that encompass all members' conflicting priorities and built in flexibility to ensure innovative solutions are not blocked. This was evident in the core MARE Alliance that adopted one municipality to lead, while continually sharing the facilitation role in meetings dependent on the agenda.

### 2.2.4 Communication

As suggested above, communication is key. In both MARE and SWITCH participants' were aware that the project did not want to become a 'talking shop' - action was required and introduced into the title, hence: Learning and *Action* Alliance. Communications required in the process of the LAAs were virtual through the websites, emails and interactions through Skype and telephone. Skill with external communications with other organisations, municipalities, disciplines, communities and society as a whole and finally internal communication processes between individual alliances, wider alliances and personal strategies for

interactions with those involved and relevant were required by the LAAs. Therefore communication training was delivered by WP1 via a psychologist and communications expert to support this and gain insight into personal communication strategies in LAA meetings and how these fostered or impeded the space for collaboration.

Within MARE, issues occurred regarding cultural, professional misunderstandings, communication errors and differing levels of knowledge. There were many differing cultures and norms to be sensitive to. There are evident characteristic differences that interplay in each and every one of our interactions with each other and how these interactions are understood and what meanings may be attached is crucial to positive relationships and cohesive communication processes.

### 2.2.5 Influencing Policy

LAAs are seen as a vehicle to ensure that the approach to FRM developed within the scope of MARE should become mainstreamed into political and policy arenas. This was achieved with varying success in both SWITCH and MARE. Examples of this in MARE are the climate proofing tool kit, portal and multi-level safety tools. Within SWITCH, policy and planning "*helped to give the learning alliance more coherence and purpose*." For example in Tel Aviv there was direct engagement with the city strategic planning processes. Whilst in MARE in Bergen there emerged a climate and energy plan, "*MARE has become easier to work in because over time it has been given attention at a political level*" (Bergen). This requires multi-level engagement, which is not always possible given the city scale of some alliances.

### 2.2.6 What is our Legacy?

Experience of the Learning Alliance approach to help in tackling complex urban water management practices and policies is transferable to all domains in one form or another. One individuals' statement from MARE succinctly sums up the legacy of the MARE and SWITCH projects: "*Good to mix with professionals who have the expertise and knowledge. Great to see the innovatory experience, the government does not have the funding so need to be exposed to thinking outside the box. It is essential to hang together*." Other areas of discipline interaction are becoming evident through the merging of specialisms. The social scientist can deliver action research findings that are inclusive and define stakeholder engagement, engineers deliver the specialist skills to develop complex solutions through demonstration projects, planners and architects can support the planning and design processes and psychologists or skilled facilitators can establish essential communication pathways. In a time of rapid environmental change, the traditionally separate and individualistic professional sectors need to recognise this. The possibilities for transnational, national, institutional, organisational and personal adaptation to become more effective, efficient and sustainable are prodigious and LAAs can help achieve this at the appropriate scales.

# 3 Aims and Objectives – MARE WP1

The aim for the LAAs in WP1 has been to establish stronger and more effective means of working together in partnerships to innovate, the objectives for WP1 in MARE have been:

1. (Facilitate the) Set up of Learning and Action Alliances (LAAs) for professional (and other) stakeholders in FRM

2. (Facilitate the) Set up of LAAs in four countries, aimed to become inclusive, permanent national platforms. In each; local, regional and national level authorities will be represented.
3. (Facilitate the) establishment of/ and demonstrate intensive cooperation between all levels of the decision-making (support) chain as well as academic and technical support - needed for the design of integrated FRM solutions (climate proofing) and prevent adverse impact solutions across stakeholders.
4. Link the networks to better facilitate transnational cooperation.
5. (Facilitate the) a permanent and sustainable communication infrastructure, which will have professional coordination and work plans based on joint policy development goals.

These objectives evolved during the project and this report encompasses each appropriately interpreted in context and in action. WP1 learnt with the individual and collective LAAs, by doing.

Each of the 4 core LAAs within MARE were formed in a unique way with different drivers (Ashley et al, 2012). Each has a different composition and different means of operation. The LAAs have grown organically rather than to a prescribed structure. Thus they have unique visions and different needs for support in achieving these. The overall MARE project itself acts as an LAA; at the outset it was anticipated that some form of leadership/champion development programme would be devised, similar to that within an Australian programme (Taylor, 2010). This was envisaged to be aimed at individuals with key or potentially key roles in the organisations engaged in flood risk management.

After one year of operation and a review of the functioning of the MARE LAAs it was clear that there were already a number of leaders and champions in the constituent stakeholder communities, albeit with differing competencies, capacities, visions and perspectives. What became apparent was that the innovations in practice required to deliver the appropriate responses to future uncertainties and pressures such as climate change, were brought about (or blocked) as much by the policy and higher level decision makers as the leading practicing professionals. Organisations' may exhibit innovatory approaches and be willing to experiment and take risks in innovation but this is usually as a result of key individuals (leaders and champions) within the organisation convincing the decision makers to take risks[9]. Leaders and champions were reported by interviewees, to be organic and project specific, arising from individuals with the required characteristics and skills. One member explained: "*Our LAA has lots of leaders and leaders of leaders, also politicians*"…another stated "*There is no formal training or support but all Chairs have long experience in industry, in senior positions in large organisations. It's willingness first and skills second*." One member discusses the role individual characteristics have to play: "*Get people to do what they want and you do it due to his presence. I don't like delegation from a controlling top down approach, people need to be respected and trusted to do their jobs. Characteristics are essential in making me feel included in the LAA*." These statements confirm that there is no one leadership or training manual; as this may have a negative impact on a process that is evidently embracing an innovatory strategy of LAA management. The role that leaders and champions have to play within LAAs is discussed further in the discussion section of this report.

[9] This term was to some extent contested in MARE. Certain partners were not comfortable that they were taking 'risks' when innovating. However, this seemed to be culturally based, with native English speaking partners being more comfortable with the concept (See Section 5).

The initial task was to support partners to begin to think about and set up problem-centric LAAs dealing with the challenges faced by urbanisation, climate change, public expectations and current policy and practice as regards flood risk management. Each of the MARE partners established LAAs within the context and perspective of the project that suited their own local needs and circumstances. LAAs should not be uniformly prescribed, there are no ideal models of an LAA; rather they should be seen as organic, flexible, adaptable and evolutionary. In a time of limited financial resources and great demands on the time of those participating in alliances it is essential that each member sees that the benefits arising from the membership of the alliance outweigh the time and cost of their engagement. Alliances are formed by individuals and organisations' which have a common purpose. Membership of alliances is voluntary. Therefore, in order to sustain the membership of an alliance it is necessary to ensure that the needs and expectations of each and every member are satisfied. But how do we go about establishing those needs? How can each member be accorded the same gravitas as the next? What systems or processes can enable members to feel valued and actively listened to and respected when there are so many conflicting objectives and motivations? These were some of the queries and obstacles that arose during this process and the role of WP1 was to consider, analyse and draw recommendations for most effective practice.

WP1 worked with the individual LAAs to deliver a tailored programme of support for each which enhanced their effectiveness and ensured the appropriate conditions were in place to enable longevity of each LAA beyond the end of the MARE project. The individual activities informed the collective MARE LAA and the longevity of the outcomes from MARE beyond the termination of the project with support via the Portal.

Within MARE, there was a recognised need to ensure action; hence, Learning and Action Alliances (LAAs) were seen as:

- A means of providing a collective understanding (legitimisation) of the problems (of Flood Risk Management, FRM) and the context;
- Potentially providing a shared vision for where the desired outcome needs to get to; devising innovative responses and testing the effectiveness (sustainability) of these responses.

The LAAs were also seen as a vehicle to ensure that the approach to FRM developed within the scope of MARE should become mainstreamed into political and policy arenas. The objectives for the investigation of the functioning of the LAAs were established from observation, feedback and validation of requirements by the LAAs. Provision of individually designed support was required for the continuation of the LAAs beyond MARE and to help embed innovation via:

- Assessing decision making processes
- Understanding and recording structure & commonalities of the LAAs
- Investigating individual & structural effects of risk on innovation
- Supporting the LAAs to work cohesively & use time as effectively as possible
- Completing assessments to highlight areas for change
- Highlighting excellent working processes
- Supporting positive change
- Reviewing and drawing conclusions from the constituent LAAs as regards the overall MARE LAA

- Facilitating and developing workshops for LAAs and their stakeholders to support training needs.

# 4 Methods

Appendices 1 - 5 describe the background and more detail for the methods used in MARE in relation to LAAs

## 4.1 Stakeholders

When embarking on LAA stakeholder engagement it is essential to satisfy the needs of all members. If an LAA fails to do this then members will fail to participate fully, or withdraw from the alliance. One vehicle to achieve this is to create mutually beneficial communication pathways through a relationship of trust and open dialogue, thus strengthening the overall process. It may be necessary for an LAA to reflect on individuals, leaders and organisations' communication processes at an early stage in establishing an effective platform, potentially requiring a specialist facilitator or trainer. Each alliance has to balance the needs of its promoters (the MARE partners) and wider membership. This process can also be strengthened by initial 'quick wins' such as from the synergies gained from partnership working, thus reinforcing stakeholder trust in the LAA process. Appropriate LAA formation and stakeholder selection and engagement processes are paramount to the continuation and longevity of the LAA. The importance of effective communication cannot be stressed enough when creating the core foundations to successful, proactive networks, enforcing motivation, validation and a sense of group identity. Reflected here by an LAA member, **"***It allows people to communicate on the same level. Even if they have different competences, open discussion is important to get to solutions*". We have to bear in mind that each beneficiary is (usually) an independent body. Thus there is a fundamental need that "decisions" are fully accepted: "*Each beneficiary decides for themselves; can try to convince people by talking and encouraging prioritisation but can't really interfere*".

### 4.1.1 Phase 1 – LAA Initiation

The most effective LAAs appear to be project focused. In Yorkshire the 'open-ended' LAAs were formed with a broad remit to consider all aspects of water management (YHLAA) and/or a river catchment (DCAA) and these were not as productive in terms of innovation as the other MARE alliances that were more project focused (Ashley et al, 2012), partly due to rapid and ongoing changes in the funding and regulation of flood risk management in England.

Guidance on the setting up of LAAs was provided by WP1 early in the project. The guidance is provided in Annex 1 which is supplemented by a short procedural guide. Annex 2 gives the theoretical background to establishing Learning Alliances that preceded the guidance.

The process began with the initial core team of interested stakeholders. Identifying the physical, political and institutional scope and boundaries of the demonstration project (and its' context) to be addressed by the local project or catchment based LAA – this was defined by the core team. Note was taken of any existing groups that overlapped and needed to be part of or work with the new LAA.

Consideration of the way in which the inter-relationships with the wider regional, national and in the context of MARE, EU LAAs would work was necessary; for example, the need for nesting of the LAA. Thus defining the

scope and boundaries of the LAA and if there is a need for more than one LAA to cover the required different geo-political scales. At the least there needed to be a clear pathway to national level engagement. Reports were produced showing the scope, boundaries and interactions of the emerging LAAs (Annex 3).

Establishment of who the stakeholders should be in the LAA was made using stakeholder analysis in relation to the identified scope, ensuring that all relevant functions were included. Definition of a Coordinator (ideally one emerged from the initial stakeholders) and Facilitators for the LAA was important. The Coordinator's role has been to encourage the identified stakeholders to participate.

### 4.1.2 Phase 2 - Going 'public'

The first local LAA meeting was expected to have relevant topics and issues that were not necessarily related directly to the MARE demonstration project. These topics were expected to be of more general interest to participants who were not necessarily involved in the MARE project in order to gain wider interest. Developing from the stakeholder group and first meetings a shared vision and assessment of the problem(s)/opportunities being faced in the area of flood risk management – this needed to be wider than was required only for the local MARE demonstration project.

Identifying activities that the LAA could undertake to deliver 'quick-wins' was important at the outset; for example, providing immediate benefits to the stakeholder group – e.g. a new protocol for dealing with local flood risk; a common agreement on the way to address a current challenge (this should include challenges that may be wider than the MARE demonstration project and ideally include the need to address 'blockages'[10] at national level or beyond). It is important to understand the needs and perspectives of the various groups of stakeholders and to draw up a list of activities that will satisfy all, or at least many of their needs and perspectives.

### 4.1.3 Phase 3 - Getting down to the details

Formation of steering groups representative of all of the members of the LAAs occurred early in the process. Although at that stage the MARE partners in the LAA were likely to be the only ones with the funds and time to support the alliance, the MARE demonstration project may have been only one of potentially many initiatives that were required to meet the overall needs identified by the emerging LAA.

Formulation of terms of reference for each LAA was important in agreement with the stakeholders – this usually required follow-up meetings with the key players in detailed discussion. Over time it was necessary to develop a longer-term vision for the LAA to work towards, including scenarios for future changes and challenges and some form of Driver-Pressure-Stakeholder-Impact-Response[11] framework as a start to the climate proofing assessment. From this, developing an overall shared and agreed documented vision of what the stakeholder group aspired to achieve (Annex 4).

[10] Policy, regulations, guidance, practices or standards inhibiting innovation

[11] defined as: The causal framework for describing the interactions between society and the environment adopted by the European Environment Agency: driving forces, pressures, states, impacts, responses (extension of the PSR model developed by OECD)
http://ia2dec.ew.eea.europa.eu/knowledge_base/Frameworks/doc101182/


A UK Landform alliance meeting with members of the YHLAA (http://www.ciria.com/landform/)

### 4.1.4 Phase 4 – Implementation

Implementation entailed the formulation of initiatives to respond to and deliver the vision; at least one of the initiatives was based on the individual MARE demonstration project. Design reviews were conducted with the wider MARE LAA for the specific demonstration project plans for the initiatives based on the MARE demonstration project(s).

One or more of the responses (virtually or for real) was applied for the individual demonstration projects. Followed by monitoring and evaluation of the effectiveness and performance of the response(s) – taking into account that long-term (sustainable) performance could not be observed directly in the short term. Wider lessons could be drawn from the performance evaluations and these used to define changes to policy, practice and cultures via the LAAs' nesting in national and transnational networks. This necessitated working with the wider group of LAAs for implementation.

Continuing monitoring and evaluation needs to be ongoing to assess the performance of the demonstration projects for sustainability assessment and as part of the on-going work of the LAA. The LAAs then moved on to the next priority topics, reviewing and revising the vision and goals agenda at the same time and also the process of active learning – with a continuing programme of new knowledge, information, tools etc. being reviewed at LAA meetings.

Although the process outlined above reads as if it were linear, it included internal feedback looping and cross-linkages, and has been, at the least, a cyclical, recursive activity. A core element to establishing an LAA identity is a united vision. This develops clear understanding of the purpose, ideology and expectations from individuals, organisations and the LAA as a whole. This is also paramount in the creation of a 'personality' and 'shop front' so that networks and wider groups can gain a quick and useful understanding of the group and enables a sense of identity for the members. One interviewee commented; "*Have a shop front, this allows for hibernation, equally hibernation is less evident if something like that is available. Ability to upload information would allow hibernation not to be significant, still working with each other, liaising, still communicating*." All of these elements need to be evaluated and reflected upon, culminating in the development of a flexible structure and process that can be applied to any LAA that is established.

A thematic and analytic process of observation and action research was adopted to reach the objectives stated in Section 3. One of the objectives of MARE was to find a way of 'anchoring' knowledge and change the approach within organisations if necessary through:

1. Reviewing and understanding how decisions are made in each project partner organisation and the interactions with and within the LAAs;
2. Understanding how particular key individuals' make decisions within the project partner organisations and how the LAAs influence this;
3. Developing a programme/tailored capacity building approach that assists with helping to change decision making norms and cultures within the project partner organisations to better align with the future challenges.

Socio-psychological factors were considered important in achieving these goals, concentrating on four areas of the LAAs and their members (as individuals and organisations), these were:

- Risk perception and propensity;
- Decision making norms;
- Communication; and
- Trust.

Specific objectives were to determine:

- How risk perception affected decision making;
- What decision making norms existed;
- How the way in which people view their membership of organisations and/or LAAs affects innovation;
- If in terms of LAAs, a culture of risk aversion in an organisation could constrain innovation, how membership of an LAA could help to counteract this.

Socio-psychological models were reviewed and utilised as a framework for analysis in order to support the LAAs. A psychological report was produced and socio-psychological factors considered in the functioning and sustainability of the LAAs. The models are briefly outlined and discussed in Annex 5.

# 5 Decision Making & Risk

Innovation and taking risks in practice are linked and inseparable (Cabinet Office, 2006) as illustrated in Figure 2. Businesses are familiar with the need to innovate to remain competitive and also with the attendant risks of doing this. Mobilisation of organisations to innovate requires entrepreneurship (e.g. Forbes Insights, 2011), often a concept unfamiliar within flood risk management delivery organisations who tend to be municipalities or other long-lived institutions in Europe and many other parts of the world. Adopting a risk management approach at the same time as innovating is nonetheless a relatively new concept especially linking this to the processes and decision-making structures within organisations. A UK Cabinet Office report in 2006 could have been addressing LAAs, in writing that: "*Each organisation is differently configured, faces different challenges, and will require its own (possibly unique) mix of ingredients*". Figure 2 illustrates the key ingredients recommended for use in any recipe for innovating and managing risks. In this, leadership figures in 'organisation and governance' as well as 'culture'. Box 1 outlines practices that help with the adoption of good risk management and innovation within an organisation.

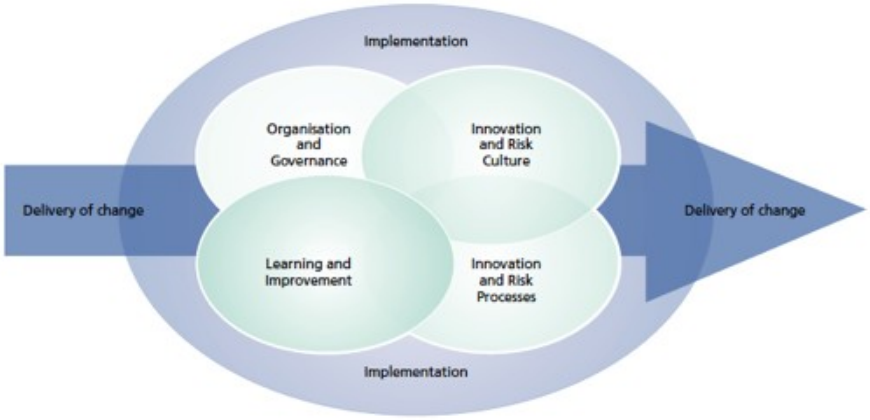



Figure 2 A framework for innovation and risk management (Cabinet Office, 2006)

Box 1 **Implementation of an innovation and risk management approach** (Cabinet Office, 2006)

- Create a decision-making environment where it is expected that assumptions and evidence will be challenged.
- Ensure that 'challenge' doesn't become a personal issue.
- Look to embed risk management in the organisation by selling the benefits rather than aspects of control.
- Ask pertinent questions about how risk assessments are carried out and ask about the relevance and status of treatments and controls.
- Clarify risk appetite in the context of the decision, rather than automatically assuming that all 'high' risks need to be reduced.
- Encourage people to think of the problems and find ways to solve them, and not to think how to extricate themselves if they fail, but how to ensure they succeed.

Many of the points in Box 1 are directly applicable to LAA operation, others require interpretation in the context of LAAs. The elements in Figure 2 and Box 1 will be covered in the following discussion. It is important here to restate that **there is no innovation without risk**: "*Risk management isn't the antithesis of innovation; it's the essence*"…."*one of the biggest risks in innovation is to see risk management as a framework to be superimposed on new-business creation rather than as an inseparable part of the process itself*" (Johnson, 2010). In a LAA, risk as well as innovation is shared between the participants, rather than one organisation shouldering the risk alone. However, in an alliance or partnership, there are several layers of 'risk'.


There is the innovatory risk of doing something in a new way, e.g. the multi-layer safety approach being taken in Dordrecht; a type of risk commonly understood by entrepreneurs. There is also the risk of sharing with and working together in alliances or partnerships, potentially sharing (*losing* for some) power and even resources that traditionally were individually allocated and utilised. Many professionals when working with the public have feared this type of risk, as there is a loss of control and their 'we know best' culture has to be rethought. An unwillingness to move from such a position was evident in the stance taken by the Environment Agency in the English LAAs and to a lesser extent, by Yorkshire Water. Both organisations saw the LAAs mainly as vehicles for imparting information to others rather than as a means for co-learning and the evolution of shared innovative responses to flood risk. To some extent this attitude is aided and abetted by the municipalities in their interactions with these organisations. Many years of 'the Environment Agency (EA) knows best' has inculcated a culture within many English municipalities of turning to the Agency for advice and direction, so much so, that the new roles of the municipalities in leading local flood risk strategies are still being played out using the previous model of Environment Agency in charge. It is tempting, even for those with the responsibility, to delegate this responsibility directly or indirectly to others, in so doing, transferring risks, but at the same time risking a loss of control and participation in innovatory solutions, where the traditional agency carries on with business as usual (e.g. Palmer, 2000 describes such internal behaviour in the EA).

Decision-making and risk are intrinsically linked, thus to evaluate the effect of one, the other needs also to be considered. Zeleny's (1982) definition of complex decision-making was considered in MARE as a framework to review decision makers' processes in each LAA and to consider the effects this might have on risk propensity in each. Sckwarzkopf (2006) indicates a gap in understanding: "*understanding others' risk perception is crucial for effective communications, we do not have a clear idea of how viewing a situation from multiple stakeholder perspectives affects risk perception*". There is evidence that individuals tend to ignore possible events that are very unlikely or very remote, regardless of their consequences (e.g. Kunreuther et al 1987).

For example, purchasers of houses on eroding cliffs in the East of UK did so when the erosion was controlled and perceived to be slow and far away in time. This is also reflected in a general paucity of social consciousness regarding flooding and the perception of flood risk within communities (e.g. Parker et al, 2009; Nye et al, 2011). The perception of risk on innovation was studied across Europe by Fobers, et al 2011; They found, "*The biggest problem was risk: None of the external parties except VCs were seen as comfortable with risk—and four out of ten respondents disagreed with the statement that venture capitalists are comfortable*

*with risk"*. The recent Forbes Insights study, also found that "*small and midsize companies in the UK were more likely to get all of the funding they needed from various sources than their peers elsewhere, although they were less likely to apply*", reflecting a culture of risk aversion. Finally "*Those organisations who were believed to spurn risk were found to be significantly correlated with poorer innovation performance*."

How risks are perceived is important to the foundation of stakeholder interests not only for the obvious effect of risk on decision-making, but also because relationships are mediated by a balance of trust and risk-taking (Das and Tang, 2004). Indeed, understanding risk perception is a crucial component of multi-stakeholder dialogues because risk perception shapes the mental attitudes that are preconditions to such dialogues by affecting individuals' cognition and knowledge construction, which are critical parts of the dialogue process (Payne and Calton, 2004).

The psychological effect of an individual's risk propensity and perception has been shown to influence innovation within institutions, as this affects behaviour and the decision process. Hogg *et al* (1990) found: "*Relatively conservative individuals should become even more conservative when grouped together, whereas individuals who are inclined to take risks should make even more risky choices*". Which could create some LAAs that are more risk averse than others, while other LAAs may be more comfortable taking risks. Establishing a more risk tolerant decision process may increase innovation in one LAA and in another create a risk averse culture, possibly inhibiting innovatory processes. Thus in LAAs where there are both risk takers and risk averse participants, a balanced structure may emerge. In relation to decision making, some interviewees in WP1 in the MARE project reported that an aversion to risk would be preferable. Those who take less risk tend to be more predictable in their decision making, which ties in with Gambetta (2001) who also emphasises the importance of doing what you say you are going to in the development of relationships and trust.

## 5.1 Trust & Communication

A further influence is the relation between decision-making, communication and engagement and the role of trust. Trust is defined here as the relationships within and outside the LAAs, cultural understandings and a shared belief that all stakeholders are working for the common good. Van Woerkum et al (2007) state: "*Trust is important in that it speeds up the process. If people trust each other, not every argument needs a pile of facts and figures to support it. In this way trust makes life easier, you can arrive at results much quicker. It can reduce interaction costs…All together; these points lead to social learning about the motives and backgrounds of each other, the recognition of the diversity of interests and creative problem solving. It means mostly, and for every partner, reframing. Reframing of problems and solutions and of our own interests*."

A societal shift should be considered: "*Citizens used to accept the role and responsibilities of their administration. In these situations arguments are received without much deliberation, the situation is quite different now. Institutional trust has eroded…decision-makers are no longer assumed as completely rational rather, they are believed to have limitations in reasoning capacity*" (Van Woerkum, et al

2007). Ring and van de Ven (1992) suggest that a perception of high-risk/high-trust prompts enterprises to prefer relational contracts; i.e. strategic alliances such as those presented here. In a recent review of the evolution of flood management in the UK, a shift from 'experts' to 'alliances' has been tracked; essential in changing objectives from 'prevention' to 'risk management' (Newman et al, 2011). In the latter review the need for a new dialogue was identified related to Habermassian ideas of communicative action (Habermas, 1987).

The selected theories outlined above go some way to explaining the barriers and challenges some stakeholders and organisations face when trying to make decisions about innovation. They may also account for some of the issues faced by the LAAs in attempting to embed innovatory approaches into flood risk management and also in developing a sense of productivity of the alliances for the stakeholders within the associated organisations. The latter being essential for individual and institutional commitment and continuing participation. According to Rotter (1967), interpersonal trust is an individual personality trait that is a predisposition to believe in others' goodwill. Individuals have a general belief about the goodness and trustworthiness of people and they act according to this belief. Decision-makers can thus be differentiated as being either 'high' or 'low' on trust propensity. The idea is that while another party's trustworthiness can be the same, individuals' high on trust propensity will be more likely to be trusting, as compared with those low on trust propensity. In MARE, these characteristics and traits have been assessed through semi-structured interviews with diverse members of the 4 national and case specific LAAs.

## 5.2 Influence on the LAAs

Part-way through conducting and analysing the interviews and questionnaires, a workshop was delivered using information and presenting initial results already gathered related to understanding some of the common socio-psychological effects of trust, communication and observations. The response to this workshop was very positive and each LAA reported how useful the observations were and further training and workshops were requested. The key element that had been identified was trust and concurs with Gambetta's (1988) findings: "*Some scholars have noted that a sense of trust can lessen the level of risk perceived in co-operation*." Individual and group attitudes towards risk and risk propensity were gathered through interviews and questionnaires to gain insights into the possible effect this may have on innovation and the success of each LAA. An initial finding was that a successful network/LAA consisted of both individuals who are risk averse and also those with a propensity for high-risk taking.

The decision framework of Zeleny (1982), reflects the findings here that a decision is not an 'act' but a 'process'. Each LAA was found to have a different process of development, structure, relational trust and decision outcomes; this was dependent on variables such as culture, structure, characteristics and visions. At each stage of LAA development there was evidence that actors were involved in the pre-decision, decision and post decision stages, albeit in differing forms. Some decision processes seem to create an atmosphere of 'fun, friendship and inclusivity' as can be seen in the interview transcripts "*Very friendly, open relationships, even with professors, it is not a very strict hierarchy. It allows people to communicate on the same level. Even if they have different competences, open discussion is important to get to solutions".* While others members

preferred less involvement at the decision stage due to time constraints, governing structures and roles within their own organisations. Therefore none of the LAAs could describe their decision as an 'act' or attributable to one individual; it is an inclusive process, through the vehicle of trust and communication.

# 6 Analysis of the activities of the LAAs

The first task, following set-up of the LAAs comprised a recursive development and assessment of the visions for the individual LAAs, via action research in which the WP1 team were able to assist the alliances in formulating these and then reviewing them. Using the visions, the WP1 team then undertook an evaluation of the LAA processes (informed by the agreed visions) with a view to devising support to ensure longevity of the alliances beyond the end of MARE. In this regard, a deeper understanding of the LAA processes and dynamics was sought based on a unique application of socio-psychological theory and understanding (Dudley et al, 2012). Face to face semi-structured interviews were undertaken, together with questionnaires and follow up meetings.

### 6.1.1 Respondents

Each municipality was requested at a MARE meeting in Dordrecht to identify key members or any member of their LAA who would like to take part in the interview and questionnaire process. There were 20 respondents in total, 15 of whom completed a specially devised risk questionnaire (Appendix 1) and 5 who, for various reasons opted out of the latter. Of these 7 were female and 8 male, ages ranged from 20's to 60's with varied academic and professional qualifications. Within this group were individuals from The Netherlands, The UK, Norway and Germany. Roles and specialities included scientists, engineers, urban designers, water strategists, academics, policy advisors and Insurers. These encompassed both the public and private sectors.

## 6.2 Visions

Each LAA was given outlines of individualised Visions & Needs, developed through reports, workshops and presentations from the individual LAAs in collaboration with facilitators from the WP1 team. Feedback was requested and each vision validated (Annex 4). At a meeting in Dordrecht in March 2012 support was given by WP1 to aid insight and consider the influences that may be affecting the innovation and continuation of each individual LAA. Each of the four LAAs within MARE had been formed in a unique way and with different drivers. Each had a different composition and different means of operation. The LAAs have grown organically rather than to a prescribed structure. Thus they have unique visions and different needs for support in achieving these as considered in Box 2.

| ***Box 2*** | ***Personal visions within each LAA*** |
|---|---|
| Hannover | Personal networks sharing experiences that inform daily work and continued networks, creating mutual benefit for both individuals and organisations in a flexible, open environment. Imbedding innovation and communication in the municipalities. |
| Don Catchment | The original vision was to provide a platform for learning and innovation, responding to strategic working. To develop an alliance that requires substantial, distinctive and a real focus to guarantee continued interest. However this has now ceased to exists and the YHLAA has emerged, no visioning work was carried out with this new group and is discussed in further detail below. |
| Dordrecht | Continue to influence policy, adapt to specific organisational goals and needs, via the creation of a more dynamic structure to support LAA continuation. |
| Bergen | Influence the climate change footprint and ideas to be adopted into normal urban planning and development processes. By creating/sustaining effective networks regionally and transnationally to gain expertise and create a culture of learning. Developing communication processes across disciplines, culture, communities and politically. |

## 6.3 Uniqueness of the LAAs and their needs

The characteristics and needs of the four principal LAAs in MARE are summarised in Table 2, drawn from the review process and visions in Box 2.

Table 2 Summary of LAA characteristics

| LAA | Characteristics |
|---|---|
| Dordrecht | • High level of legitimacy<br>• Concentrating on innovation<br>• Uncertain how to ensure future longevity |
| Hannover | • Official<br>• Developing practical applications<br>• Needs broader engagement<br>• Uncertain how to ensure future longevity |
| Bergen | • Very focussed<br>• Clear direction<br>• Assured longevity |
| Don[12] | • Lacks ownership and recognition<br>• Staff losses have been to its detriment<br>• Longevity in question |

The overviews reported in the following sections were concerned with the longevity and needs of the LAAs and are derived from discussions and presentations during an LAA workshop held in Dordrecht in March 2011 and follow-on discussions and responses to the questionnaire. The visions

[12] this alliance has ceased to function and has been replaced by a Yorkshire Regional Alliance and specific project alliances

and needs were similarly sourced and have since been verified during LAA meetings with representatives. More detail is given in Annex 4.

### 6.3.1 Hannover

The current alliances have resulted in the creation of personal networks which will keep things going by sharing experiences to be fed into daily work and will be drawn into new alliances as required. An open, inclusive, person-centred and flexible network is required. This network requires enablement and will improve the performance of the organisations, creating mutual benefit. It will be necessary to use knowledge and resources to embed innovation and active learning within the municipalities' and organisations, developing continuation of the LAA. Provision of good practice is through raising awareness by targeted methods of communication. Finally, there is a need to enable alliance(s) to be reborn or re-established (after possible hibernation) to deal with ever changing projects and challenges.

### 6.3.2 Don Catchment (Rotherham and Sheffield)

The original need was to ultimately develop a sustainable DLAA that could provide a platform for learning and innovation, through a flexible alliance which responds to opportunities in strategic working. Providing quality valuable interactions for all stakeholders and projects. The aim was to develop an alliance that required substantial, distinctive and a real focus to guarantee continued interest. Finally to develop a formal strategy considering work to date and future sustainability; creating a responsive core team able to mobilise around specific projects when needed.

The original vision was for a unique LAA working across administrative boundaries at river catchment scale to:

- Help to develop FRM plans and local strategies at city and county scale
- Embed the LAA and a culture of learning within the constituent (and beyond MARE) municipalities
- Bring together different applications of the climate proof toolbox
- Identify gaps and needs in policy, legislation and adaptation
- Identify capacity building needs in the Don Catchment and in other partners in order to develop a programme of support
- Build transnational experience of climate change knowledge and response solutions

Since the reorganisation in flood risk management brought about by the Flood and Water Management Act 2010 and its' implementation, the DCLAA has ceased to function. Many of the core team are no longer employed and new arrangements within the constituent organisations for staffing have been varied. The overarching regional alliance, YHLAA, has, however, been revitalised and is actively developing innovations and responses to changed legislative arrangements. The future of LAAs in Yorkshire is thus twofold: a Regional Alliance, the YHLAA and specific organisational alliances within municipalities and project centred. Such alliances (not so named) are functioning in Rotherham and in Sheffield, as part of the delivery of local flood risk strategies by these Lead Local Flood Authorities. Longevity is assured by staff from these municipalities continuing participation in MARE and in the YHLAA. Continuing reluctance by the Environment Agency to share power is a major barrier to effective innovation and the Corporate position of Yorkshire Water (answerable to shareholders), also predicates a reluctance to engage in the true spirit of these learning alliances, which will effectively include only active members from the municipalities. Nevertheless the YHLAA has managed

to function and retain the interest of the core participants, producing collective reviews of Government initiatives and sharing learning; as illustrated in Box 3[13].

Box 3[13]

"The YHLAA are an active and engaged group of technical specialists and practitioners drawn from Flood Management Authorities, Lead Local Flood Authorities and academic institutions in the Yorkshire Region. We believe that the range of disciplines represented, and the depth of understanding and experience that the group can call upon gives the YHLAA an important perspective on the implementation of the SuDS provisions of the Flood and Water Management Act. A workshop of the Alliance's steering group was held on the 11 January 2012 to discuss the key elements of the consultation and to collate answers to the questions posed in the consultation documents. The debate and discussion generated some critically important points that could not be reflected in the answers to the questions posed. To reflect this we have captured the key issues here in the Response Overview section that follows this preamble."

[13] Draft Response from the Yorkshire and Humber Learning and Action Alliance (YHLAA) for Flood Risk Management:- Consultation on implementation of the Sustainable Drainage Systems (SuDS) provisions in Schedule 3 of the Flood and Water Management Act 2010

### 6.3.3 Dordrecht

This very successful LAA (ven Herk et al, 2011) requires only minor support for the need to continue to influence policy, adapt to specific organisational goals and needs, via the creation of a more dynamic structure to support LAA continuation. This can be done through developing new networks, communications and exploring 'windows of opportunity'. Embedding a culture of innovation and active learning into all LAA stakeholders or institutions to support LAA continuation and influence.

### 6.3.4 Bergen

Also an extremely successful alliance, the LAA seeks to better influence the climate change footprint and ideas to be adopted into normal urban planning and development processes. By creating/sustaining effective networks regionally and transnationally to gain expertise and create a culture of learning. Develop stakeholders, communities and communication with colleagues regarding flood risk management, architects and developers. Embed a culture of innovation and active learning into all LAA stakeholders or institutions to support LAA continuation and influence and develop the ability to communicate this issue to local and national politicians and society.

## 6.4 Risk Propensity Questionnaire

The importance of risk tolerance in the behaviour of LAAs has been introduced above. The links between risk-innovation-decision-making are crucial for changing how things are done and depend upon a combination of individuals' proclivities, their employers' attitudes and behaviours and the way in which individuals and organisations' see themselves within networks such as LAAs (e.g. Cabinet Office, 2006; Forbes Insights, 2011). Power relations in such situations are well understood (Van Herk at al,

2011). A study was undertaken to look at the behaviour of the participants in the MARE LAAs, especially their risk propensity in relation to innovation potential. This comprised workshops, a questionnaire and semi-structured interviews (Dudley et al, 2012).

Organisational cultural change (which was recognised as being needed in the MARE partners to cope with the climate change challenge) cannot be guaranteed in the longer term by concentrating only on the professional leaders and champions as too much of the needs and outputs can become dependent upon these key and visionary individual leaders. They may retire or move to another position within or outside the organisation, as has happened in Rotherham. As an example in the UK alliance a member talks of the problems of relying on individuals: "*They've all gone, all engineers, all major knowledge sources. It's alarming. We have reporting meetings but it's difficult to have coherence about what we are trying to do*. *The Don Catchment struggled through losing two key members of staff who were almost full time on MARE*." Also a risk to communication may emerge from relying on one individual, "*Very difficult, because if the leadership is too structured and rigid you feel inhibited*".

In terms of LAAs, a culture of risk aversion in an organisation could constrain innovation, which membership of an LAA could help to counter. One interviewee comments regarding his organisation "*The traditional local authority structures are a real barrier, local authorities are still real bureaucracies' therefore cannot deliver local policies in the right way. If it shrinks you will be left with an administrative hub disseminating policies of bureaucratic mechanisms. Therefore the services are suffering*." The more risk averse an LAA, the less innovatory the implementation of problem solving; influencing the ability to build trust and affecting group communication and dynamics.

Therefore it is extremely important to encourage a diverse range of individuals to engage in LAAs, enhancing the propensity toward trust and dynamic decision processes that is then shared as a cultural 'norm' rather than being dependent upon individual leaders or champions. Evidence from our interviews seems to confirm this theory. "*Trust is very important, this is affected by culture. It is the Norwegian way that people are equal, traditionally classless and an equal society. It makes it easier to involve people, it is tradition that the city works with the private sector*." All LAAs report that there is not just one individual leader but leadership varies dependent upon project and interest, reflecting a network environment as opposed to a hierarchical governance structure. All of those interviewed reported their LAA to have a company or market governance structure. However, the decision-making processes influenced the 'personality' of the LAA and the member's confidence on impact; politically, socially and individually.

Because of this, there was a need to understand better the motives; rationale and propensity for risk taking by the individuals within the MARE project LAAs. The study was undertaken by a trained behavioural therapist in order to bring new psychological insights into understanding the functioning of the MARE LAAs through investigating the attitudes and behaviours of the individual involved.

Initially the concept of risk propensity and decision theory was introduced to the core participants in the MARE LAAs through a presentation. This received mixed responses from each LAA. Some could see the value in reframing the term 'risk' as a psychological effect in the LAA process,

whereas others seemed to find it objectionable, even avoidant of the term[14]. An established psychological testing questionnaire was adapted to capture and evaluate the possible effect that risk may have on decision processes by individuals and when part of an organisation. (See appendix 1 for original and adapted questionnaire from Abad, 2011).

It emerged that some municipalities did not want to complete the questionnaire in its original form, so a meeting was held to address some of their concerns. It later came to light that not only does the term 'risk' have a weighted meaning in terms of flood risk management strategies, but the term also has strong cultural definition in certain countries. For example, in The Netherlands 'risk' is in real terms used when referring to loss of life, creating a very uncomfortable cultural, emotional response in those from that culture, leading to avoidant behaviour and even animosity from the actors; sensitivity is key in such evaluations: "*In international alliances, a perception of opportunism may be attributed to a lack of cultural understanding and responsiveness"* (Beamish & Lane, 1990). This had the potential to completely jeopardise the review process, so the word 'risk' had to be removed from the questionnaire before it was sent to any of The Netherlands' respondents. The questions/answer options remained the same but the 'threatening, emotive' word was removed, being replaced by alternatives, thus re-establishing trust. In this context trust is defined as ``*a particular level of the subjective probability with which an agent assesses that another agent or group of agents will perform a particular action*'' (Gambetta *et al*, 1988).

[14] The Netherlands partner in particular objected very strongly

At least one member from each of the municipalities did not want to answer the questionnaire, apart from Norway, where there were no objections. The various feedback was gathered through the interview process. Where some members felt: "*The questionnaire is no more useful than filling in those stupid multiple choice questionnaires in women's magazines*" or "*I started the questionnaire, but I find the questions and answers too complex to be able to answer on gut feeling. For me the three options all feel the same. I therefore prefer not to participate in this particular exercise*," and "*I'm not going to answer the questions. It is a personal decision as I don't like these types of questionnaires especially if connected to a person. I am not keen to give answers without bigger reasons; it gives insights into the way I would behave*" (Ironically, this was the objective of the questionnaire exercise). To date 75% of those who agreed to participate in the interviews also completed a questionnaire in dialogue with the LAAs. Research suggests that: "*goodwill trust (or benevolence) would reduce the perception of relational risk, simply because a positive assessment of one's intentions would lead to a belief that opportunistic behaviour is less likely*" (Das & Teng, 2001). Similarly, it can be argued that competence trust, trust in one's professional ability and incentives, would reduce perceived performance risk because of a positive belief in one's ability. The questionnaires were statistically scored and analysed manually with support from a statistician and input into Nvivo 9 for analysis. The findings are discussed in more detail later in this report.

## 6.5 Interviews

A semi-structured interview was designed to review and understand how decisions were made and the interactions with and within the LAAs (Appendix 4); understanding how particular key individuals made

decisions within the project partner organisations and how the LAAs influenced this. Various methods were applied to do this with interviews to accommodate individuals' varying circumstances. Each LAA was sent a copy of the questionnaire and interview and a brief explanation attached, each were requested to identify key members or any member of their LAA who would like to take part. Then correspondence established the easiest way to conduct the interviews, this ranged from telephone, Skype, email and face-to-face interviews.

From this process it was found that the most effective way to conduct the interviews was face to face, due to the points outlined below:

1. The questions were open ended and encouraged discursive answers that needed to be transcribed in detail, taking the interviewers' attention away from the interviewee's responses;
2. In connection with the point above, questions could arise from answers as these were given and this could only be handled effectively if the interviewer was able to actively listen to the interviewee;
3. Two people were found essential to complete a good interview; particularly in this study, where one has psychological knowledge and the other a knowledge of water management as both areas of expertise are required to fully understand the answers given;
4. Audio recording was considered, however, it was felt that this posed a barrier and gave cause for concerns amongst the interviewees regarding confidentiality; (for example, the interviewee could ask to not have specific things transcribed which would not be the case using an audio recording);
5. Communication was another factor, as those who conducted the interviews were at the time, new to MARE it was felt to be beneficial to building trust and respect by allowing individuals' time to discuss any issues or concerns they may have had with the process as it unfolded;
6. Interviewer time was an element considered, if one person carried out the interview with a recording they would also have to manually transcribe after the interviews which would be very time consuming.

Questionnaires were emailed and recipients were asked to fill these in before the interviews took place. At the interview, feedback and perceptions were gathered, an opportunity was given to discuss any questions or queries individuals' may have had regarding the questionnaire. The interviews that were completed face to face also had more complex answers resulting in better data for analysis. The interviews were manually recorded and later transcribed, these were then sent back to the interviewee to read and make any changes before the information was finally complied and uploaded to NVivo 9[15] for analysis, allowing recommendations to be made.

Reflected in the results, each stakeholder viewed there to be leaders/champions in their LAAs who had not formally been elected, and in many cases were already incumbents in the decision making/information processes, but are "*enthusiastic, trustworthy and very good at their jobs*." The LAAs who had a majority of risk averse or high-risk propensity members were reported to be as equally

[15] NVivo is software that helps you easily organize and analyze unstructured information, so that you can ultimately make better decisions. (http://www.qsrinternational.com/products_nvivo.aspx)

unsuccessful in delivering innovation and engagement. This could be explained potentially by the socio-psychological effect of the perception of trust and decision processes within the structure of the LAA in terms of the governance. For example, with a Hierarchical governance approach, information is disseminated 'top down'. Creating a sense of control eliminates the sense of an open, secure place to share ideas. One member explains, *"It could be the case that some voices are listened to more than others but it is not a top down leadership."* Another says, *"Closed doors are dangerous, people can lose touch with reality."* creating more of a 'market for production' with a particular agenda, thus negatively affecting stakeholder motivation.

One way to tackle motivational issues is to create 'quick wins'. This incentivises and creates a 'product' that can be seen by the individuals' company/organisation as immediately displaying the benefits of the LAA and potentially saving individuals' time in their own working practices. Some examples of this, "*The government and municipalities are searching for advice, this is motivating and interesting to be used immediately and effectively.*" Also "*Some networks may work but it is good to be a part of one that is useful for society and communicates with the community and has many voices."*

A commonly recurring question from LAA members was: "What do I gain?" Potentially members gain an insight into the strengths and weaknesses of their LAA; specialist recommendation of how to build trust; engage partners; create interest from communities; create an environment that breeds innovation and productive useful networks were the MARE aims. However, only time will tell if this has been achieved to any level. Nonetheless, all interviewees were positive about their alliances and the desire to have them continue, examples of this, "*I like to do new things not in hierarchical way, like to try new things out. Its rewarding bringing my own ideas, see results of projects – new ideas of organisations, then get feedback and bring it to other LAAs*" or "*We can influence the politicians. There are no right answers. In my experience we have quite big influence on their decisions. It helps to have a lot of people working together and thinking the same; this is why the LAA is interesting and helps*" and "*Open, I'm not an island, insofar as there is a two way flow, perhaps also broad I try to involve those who need to be involved, public, drainage, it's their environment, their community they have to live with it. Community engagement is a big part of it".*

## 6.6 Review workshops

The review of the functioning and support needed for each LAA was undertaken starting in 2011, just past the mid way point of the project. This included, for the first time, behavioural and psychological expertise.

Dordrecht in March 2011

It was initially presumed that partners/beneficiary LAAs would require a uniform training and support for leadership as assumed in the initial WP1 objectives. However, from the self-expressed visions and observations of the activities of the LAAs, it was apparent that this was not necessary and

an alternative looking at the best way to support the functioning of individual LAAs was devised.

The MARE partners had not been consulted about the thinking behind a move away from the traditional leadership and champion training package, towards more specialised support until the Learning and Action Alliance review of operation meeting was held at a MARE international workshop in Dordrecht in March 2011. It was then that the initial introduction of the WP1 review team with specialist behavioural scientists was made. Those involved were new to the project, and initially MARE members were not aware that a more socio-psychological view might be considered. This engendered some hesitation amongst members as to how relevant a psychological perspective may be for understanding LAA functioning and sustainability. This apparent change of focus could have been handled better, as change in any circumstance is difficult and causes uncomfortable feelings; also differing personalities react differently to change. This led to some initial barriers in cooperation. Consultation via e.g. emails prior to this meeting may have reduced members' initial anxiety.

Cultural and individual bias and frames emerged at this initial workshop. There was a sense, by some that the psychological models were there to analyse and criticise individuals and LAAs rather than provide the supporting role that was the intention. Subsequent feedback from interviewees confirmed this. This was despite the inclusion of albeit a limited number of social scientists in MARE,

This may be explained by various factors, 'psychology' in general evokes a rather emotive reaction from people for varying reasons. This could be affected by, media portrayal, personal experiences, individual and cultural stereotypes and biases. Throughout the project there were mixed reactions to the involvement of a psychologist, however, once intentions and objectives were made clear this initial anxiety reduced in most cases. This phenomenon was very interesting as it highlighted the potential barriers that may arise when cross-disciplinary interactions are established; psychology is not the only field with bias and frames attached by society, culture and the individual. The main learning point from this experience is that through the development of trust, by being transparent, open, actively listening and eager for dialogue communication pathways, these barriers were soon overcome. This was an evident beneficial impact when dealing with the risk questionnaires.

The initial presentation given at the workshop concentrated on explaining the aims and objectives of the evaluation and outlined some of the theoretical models that may be considered; but most importantly it was to introduce the idea that risk could be viewed in psychological terms, not just in flood management terms (the presentation is in Appendix 2).

A second workshop was delivered in Hannover in September 2011. Due to the gap in information, specifically non-completion of all of the interviews with LAA members, feedback was provided only on the commonalities that arose from the findings to date. Specific recommendations were avoided due to confidentiality, as findings needed to be robust and validated and also used to inform transnational learning. The workshop centred on Trust & Communication in general terms. This encouraged the LAAs to trust the WP1 activities and see that the support was useful and that their views had been listened to. Following on from this, further workshops and training were requested from the LAAs and to support the sharing of knowledge and good practice. This was received well by the members and at the subsequent

follow up meeting the researchers were publicly thanked by one of the MARE lead members for their contribution to the project.

Experience and outcomes up until the end of 2011 were presented at the international conference on water sensitive urban design in Melbourne in February 2012 (Dudley et al, 2012). Audience feedback and interaction with the leading international researchers from Monash University[16] helped to validate the processes being adopted in MARE WP1. At a separate meeting for the Victoria State municipalities, held in Melbourne (LGPro[17]), the WP1 team were asked to run two workshops on capacity building within partnerships. This also provided another affirmation of the approach being taken.

Overall, the capacity building needs that had emerged from the workshops, questionnaires and interviews, related to sustainability of the individual LAAs. The way in which discourse was undertaken and managed in each alliance was identified as being largely 'traditional', whereas this could be more effective if there was greater understanding of the patterns of framing and interaction processes between participants and with outside organisations. The need for a specialist facilitator to run the next workshop was evident and Pieter Lems, a specialist in framing discourse, organised and ran the third workshop.

Training for MARE members took place at a review meeting in Sheffield in March 2012. The covering aim for the three workshops (two above and this one) was for participants to understand the processes and decide on rules for their personal communication in LAA meetings, in order to better support a co-constructive communication pattern in these meetings. This co-constructive communication pattern enables the participants to: 1) explore their differences; 2) direct their attention to deal constructively with these differences; and 3) develop a constructive relationship with one another.

In workshop 1, the participants were challenged to reflect on their personal communication strategies and how these strategies contributed to or impeded the 'space for change' in an LAA meeting. In workshop 2, the participants discussed communication patterns that either disable or enable them to deal co-constructively with their differences.

In workshop 3, after consideration of the previous workshops and participants' feedback, a response was made to the outstanding questions from the participants considering areas other than the communicative aspects of the 'production process' of the LAA. They were able focus in workshop 1 and 2 on the communicative aspect. Workshops 1 and 2 had generated 'real' questions with regard to collaboration.

### 6.6.1 Review of workshops

During the MARE meeting from in March 2012, the participants joined three workshops dealing with aspects of collaboration. Some reflections are given here on the responses of the participants at the workshops, based on the impressions of the workshop leader, Pieter Lems.

Whereas the workshops aimed to address the communication patterns within the LAA's, the participants framed their major problem as follows: "*What if you are right, but others don't accept it?*" The framing of the problem in this way revealed that the participants have the tendency to exclude themselves from their analysis of what is going on in their collaboration. Such a problem perception directs the search for solutions

[16] Centre for water sensitive cities: http://watersensitivecities.org.au/
[17] http://www.lgpro.com/ (for the 2013 conference)

towards persuasive communication, the art of convincing other target groups of *your* ideas. However, such an approach of communication and interaction immediately creates its own resistance. During the workshops the team tried to re-frame this problem perception to enable the participants' to link their personal communication to the shaping of communication patterns in their interactions with other actors. Such a problem definition directs the search for solutions towards the collaborative creation of space for change. The challenge for such an approach for change is to build trust in the quality of the collaboration process, so that it produces satisfying outcomes.

During the workshops, it was discovered that a systemic analysis of the effect of personal communication in collaborations was new for the participants. The participants' expressed their views that personal communication is taken for granted and is something you 'have' or 'not'. The major attention of the participants in collaborations is on 'solving the issue of flood management'. However, during the workshop participants, were able to provide examples that showed how interactions with other actors proved to be crucial for successful or problematic development of their LAA. Important insights on the communication of participants were:

- Expert language. The LAA consists primarily of experts who share a lot of understandings on the problem of flood management. This enables them to develop solutions for improvement. However, the 'expert language' is not suited for interaction with other actors (decision makers, public) who address non-expert concerns.
- A division between 'we-group' and 'they-group' easily leads to labelling and stereotyping. Other actors are labelled as layman, self-centric, unwilling. The construction of these labels during in-group conversations influences the out-group interactions. Such labels create distance between actors and impedes the listening process to the concerns of other actors.

Based on these observations, the composition of the LAA's was considered. Does the LAA consist of like-minded participants, or does the LAA include different-minded actors? The opening up of a collaboration to address incompatible differences inevitably increases conflict and complexity, but it also creates the opportunity to arrive at outcomes that will work. During the workshops three strategies were discussed that can help support participants to deal with differences: explore differences; manage expectations and develop the relationship. These strategies enable development of a shared context for interaction with different-minded actors. Communication patterns were also reviewed within collaborations that are more or less suited to deal with differences: downloading; debate and dialogue. Each pattern has its own advantages and disadvantages and these were illustrated in the workshop. The ability of an LAA to scale up or scale down their communication patterns can be crucial to support their delivery of sustainable outcomes.

# 7 Statistical Analysis

As previously mentioned a modification of a clinical questionnaire evaluating risk propensity from (Abad *et al*, 2011) was circulated to interviewees. This was chosen because of its clinical validity and to link to previous research. Recipients were asked to complete it before the interviews took place; some recipients did so while others felt they did not want to take part for varying reasons. During the process two

versions of the questionnaire were used due to barriers occurring through use of language and associated meanings. The second draft had the term 'risk' removed and questions terminology had been adapted to sound more tailored to water management language, than the previous scenarios that were general statements on varying subject matter at request from one of the municipalities. (Both versions are in the appendix 1). Feedback received regarding the second questionnaire showed that too specific questions can also be counterproductive, "*I do not feel that the questionnaire is relevant to me it is not from the citizens point of view but most suited to practitioners and flood risk managers*." In response to this, the first questionnaire was sent out and was completed.

The validity of the questions and analysis using two versions of the same questions on the alternative questionnaires is open to debate. Terminology can affect meaning and context of the questions an in turn the answers. To mitigate this, the expected answers remained the same on both questionnaires and were scored the same, but this variation needs to be considered when assessing the validity of the data.

## 7.1 Results

The thematic content analysis initially gave a broad result of frequently occurring words (Box 4). A tree map represents the words in a graphical view, where each word is contained in a rectangle. The size of the rectangle indicates its relative frequency. These frequencies were then refined further to produce more specific themes that could be attributed to percentages of occurrence and analysed by looking for correlations.

NVivo 9 analysis was supported by direct manual thematic analysis to senure contextual nuancies were not missed by the computerised tool.

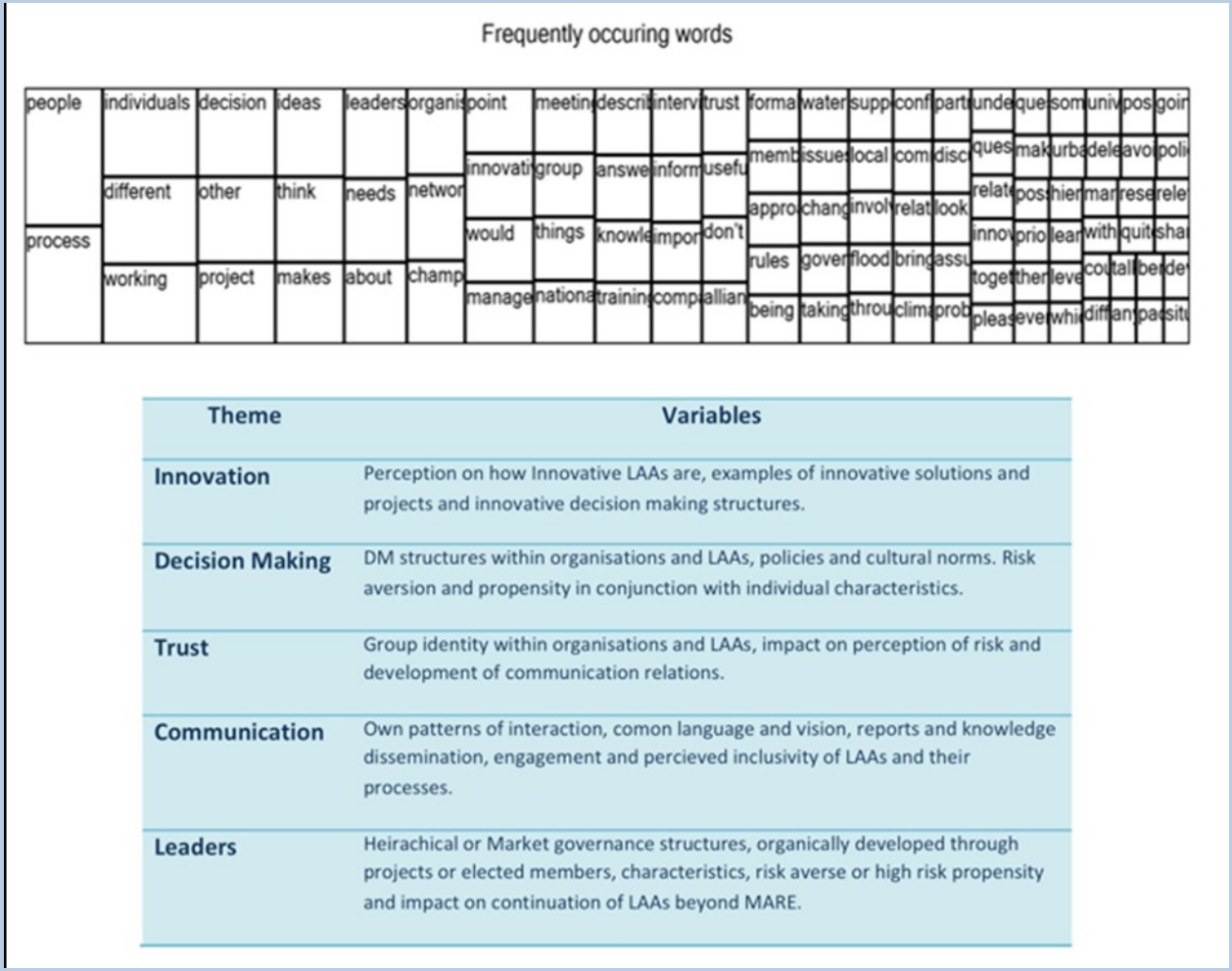
The themes in Box 4 also took into account observations from meetings, previous reports and municipality feedback throughout the MARE project. The face validity of the hypothesis was then analysed to see if the methodology proposed stood up to validity in this area by:

- Taking the scores from the risk propensity questionnaire and comparing these to the thematic results related to decision making.
- Considering if decision-making increases the more risk averse the individual becomes, thus those individuals who are predisposed to being risk averse would avoid decision-making and discussing the processes.

This process was informed from Zeleny's model of decision making and risk propensity, that states that the decision making model needs to be considered less of an 'act' and more of a dynamic process of pre-decision, decision and post decision stages. This would not be the case for those who are averse to thinking and reflecting on the process, nor those behaviourally predisposed to be avoidant to making any decision, as it may be the wrong one, thus triggering feelings of cognitive dissonance.

Results showed positive correlation as hypothesised above and statistical significance ($r=0.63$, $p>95\%$).

**Box 4 NVivo and thematic analysis**




| Theme | Variables |
|---|---|
| **Innovation** | Perception on how Innovative LAAs are, examples of innovative solutions and projects and innovative decision making structures. |
| **Decision Making** | DM structures within organisations and LAAs, policies and cultural norms. Risk aversion and propensity in conjunction with individual characteristics. |
| **Trust** | Group identity within organisations and LAAs, impact on perception of risk and development of communication relations. |
| **Communication** | Own patterns of interaction, comon language and vision, reports and knowledge dissemination, engagement and percieved inclusivity of LAAs and their processes. |
| **Leaders** | Heirachical or Market governance structures, organically developed through projects or elected members, characteristics, risk averse or high risk propensity and impact on continuation of LAAs beyond MARE. |

The correlation between time and risk propensity were also examined and found to be significant. The risk averse individuals were more concerned with time constraints on activities, enagement and their roles in their organisations. For example one interviewee states, "*The only problem is that there is a lot of other duties, it is difficult to find time to bring as much as you want*." While those whose risk propensity is higher were aware of this factor but resolved to find solutions to this or accepted it as an inevitability and in some cases reported the LAAs as a time saver,"*Invest time in the alliance and it saves time*."

Results showed positive correlation as hypothesised and statistical significance (r=0.68 p>95%)

It was also found that overall, interviewees' responses during the interviews showed little correlation to their risk questionnaires (appendix 3): (R=-0.50 p>90%)

There are mitigating circumstances to consider. The interviews may not have ascertained meaningful information about individuals' risk behaviours due to social ethicacies and loyalty to organisations or to LAAs and lack of trust in the interviewer. Another factor may have been the lacl of individuals' ability to reflect upon their own perceptions and behaviours objectively. As was seen throughout the commnication workshops, this skill is perceived to be 'easy' and naturally occuring, much like the assumption seen in the SWITCH project regarding engagment processes. Such skills in reality take training, skill and practice to develop despite what engineers and other professionals concerned with FRM believe. Other complicating factors include the use of a scientific tool; the NVivo package may have not been able to take into account context and meaning. Finally, the sample size was relatively small and would therefore affect the significance of the correlations being drawn. Also the change in language may have affected certain individuals' understanding of the questions. Even though there was great difficulty in the use and implementation of a clinical measure, the questionnaire, more use of such clinically proven tools could enhance understanding and findings from studies such as reported here. Strengthening scientific confidence and helping to provide stronger recommendations to support the continuation of the LAAs beyond MARE, such as a more clear measure for assessing innovation and communication perceptions, with working examples.

# 8 Discussion

So were the aims met?

- Reviewing and understanding how decisions were made in each project partner organisation and the interactions with and within the LAAs
- Understanding how particular key individuals made decisions within the project partner organisations and how the LAAs influenced this;
- Development of a programme/tailored capacity building approach that assists with helping to change decision making norms and cultures within the project partner organisations to better align with the future challenges and ensure longevity.

As presented in this report, the research and participation has shown that all LAAs report to have a market or networked governance approach,

while individual organisations are often referred to as hierarchical and in some cases referred to as 'bureaucracies' hindering innovation and demotivating the individuals who work within them. Whole institutions have difficulties with the responsibility of risk concerning decision making processes, as seen in Forbes research, reflected in the UK alliance with the governance of the EA. The results support Zeleny's model, "Man is a reluctant decision maker, not a swiftly calculating machine," resulting in individuals who are averse to risk making fewer decisions, in some cases avoiding this completely and giving up responsibility to another individual or institution. Another observable effect is the resulting psychological phenomena of cognitive dissonance that may occur in the final decision stage which is continually questioned due to the uncomfortable nature occurring where there are no perfect solutions or decisions. This creates an ever cyclical process inhibiting innovative solutions and ideas and kills innovation. As shown by the statistical analysis, risk averse individuals tend to avoid making decisions and often do not make decisions, for fear that as these may be wrong. However, with the support and membership of an alliance, even those who are risk averse become less so as a member of a mixed characteristics alliance, which is seen to be greater than the individual with "many voices" and "*at work in terms of how bold I will be I will take more risk in the alliance than at work*".

How risks are perceived is important to the foundation of stakeholder interests not only for the obvious effect of risk on decision-making, but also because relationships are mediated by a balance of trust and risk-taking (Das and Tang, 2004). Indeed, understanding risk perception is a crucial component of multi-stakeholder dialogues because risk perception shapes the mental attitudes that are preconditions to such dialogues by affecting individuals' cognition and knowledge construction, which are critical parts of the dialogue process (Payne and Calton, 2004). In terms of LAAs, a culture of risk aversion in an organisation could constrain innovation, which membership of an LAA could help to counter.

Stakeholder engagement has been shown through SWITCH and MARE to be paramount in establishing LAAs, the member diversity and buy in are essential to the approach of adaptive management. Process documentation and reflection sessions establish productive communication strategies that are integral. While facilitators and leaders are the building blocks of the foundations, these key roles can innovate or block an LAA, as highlighted by members here," *It is very difficult, because if the leadership is too structured and rigid you feel inhibited. Coming in late I feel I have noticed it more*." The organic development of a good leader is shown here, "*it is our daily role to lead people and processes. In MARE, this is because ..started the project. We took the group around and shaped the alliance from the first day and it became natural through the history of the project*" and the strength of LAAs is seen here, "*All members are leaders when called upon, anyone in the LAA who dedicates ideas brings in their personality, if I had a problem with one person, someone else may be in contact with them, I can delegate. All members can be leaders but still need a driver for the project and keep the level of work sustained. An unpredictable decision maker is not a leader. "* In turn the leaders need to be able to communicate on many levels and have the propensity to make decisions.

Due to differing personal characteristics one individual may view a situation or comment entirely differently from another, sometimes causing conflict or frustration, an example of this can be seen here; "*Emotion and experiences caused some members to have resentment, due to being laid off or not appointed causing them to criticise and created real damage to trust and had to be re-engaged*". Good communication, "*It is about assessing people's characteristics to best deliver the outcome not necessarily their job title*". Another LAA member

felt, "*They get people to do what they want and you do it due to his/her presence. I don't like delegation from a controlling top down approach, people need to be respected and trusted to do their jobs. Characteristics are essential in making me feel included in the LAA*". Thus support for individuals to reflect upon their communication strategies is essential. These can be accessed through the portal in the form of powerpoints, skilled facilitators or in house training can and has been delivered as discussed previously in the workshops section.

Learning can be gained through one area of conflict that arose in the MARE project. There was initial confusion of roles and responsibilities due to unclear definitions at an early stage. "*It is difficult to level different interests and to find solutions with people from different backgrounds or understandings, not only in the way of talking but also how results are put together and visualised"* one way to overcome this issue, "*The most important way is bringing all stakeholders around the table, allowing people to discuss and find solutions. We used this process to make climate and action plan."*

Interdisciplinary working is an innovative approach and raises obstacles for individuals, organisations, and municipalities. Reflected through individual's frames that were triggered in the group by introducing new members later on in the project and also the introduction of a psychological perspective not many had extensive knowledge about. Members frame things very differently from each other; one member states "*There are lots of academics, finances, staff members; it's not about being keen on projects. They are doing the project to get money for staff members and to write papers, main driver is not to solve the specific problem which is different for the city*" and "*There are other groups who spend less time on the project, the university is less commited, very busy with governmental day to day business they have less time for MARE*". However, other areas of discipline interaction are becoming evident through the merging of specialisms: the social scientist can deliver action research findings that are inclusive and define stakeholder engagement; engineers deliver the specialist skills to develop complex solutions through demonstration projects; planners and architects can support the planning and design processes and psychologists or skilled facilitators can establish essential communication pathways. In a time of rapid environmental change the professional sectors are need to mirror this understanding. The possibilities for transnational, national, institutional, organisational and personal adaption are vast.

Also observed were negative effects of local/national economy and priorities affecting the establishment of LAAs, through e.g. the Don Catchment example. When there are budget restraints, loss of employment and re-deployment within organisations this can cause leaders/champions with knowledge of the LAA to leave or move on and in some cases not share that information. Under these conditions innovative approaches seem to become low priorities; employees do not want to spend time on projects that may be seen as unproductive; workloads increase so time restraints hinder the process and job insecurity psychologically increases stress and demotivation. In our study these concerns have hindered the process to such an extent that some LAAs (notably the Don Catchment) have ceased to exist in their previous forms. Ironically it is precisely at these times of rapid change that the most innovation is needed. However, what is not appreciated is that the innovation is needed in all aspects of endeavour, not just technical. In fact the technical innovation is often the least difficult, whereas the

contextual conditions and institutional framing are the greatest obstacles to change (Cettner, 2012).

Through this process the MARE partners have gained a lot of knowledge about the interplay between decision-making norms, individual risk propensity and the formation of trust to support the innovation process. With the mechanism of the LAA to inspire and support members, these areas that may seem to be a weakness can be turned into strengths that balance the 'personality' of the LAA, culminating in an entirely different entity where an effective balance and mix of characteristics, disciplines and communications are evident.

## 8.1 Individual Support to continue the MARE LAAs

### 8.1.1 Hannover

Throughout the MARE project the Hannover LAA felt their individual needs centred on engaging the right partners and raising awareness of the LAA. This LAA has shown to be successful and encompasses a diverse range of characteristics, risk propensity, disciplines and LAA personality. WP1 was requested to support engagement requirements, for stakeholders, other networks, communities or wider society. To address this a three day workshop around communication processes was developed and delivered by the WP1 team in conjunction with a communications specialist Pieter Lems in March 2012. One future recommendation would be for the Hannover LAA to visit the Bergen LAA as they have formal and informal engagement processes in place for communities, schools and media awareness raising through their 'Cities of the Future' strategy, and they also have a member who's role is specifically to raise awareness and communicate with the media regarding demonstration projects thus supporting transnational collaboration.

### 8.1.2 Bergen

This LAA reported to require further media and political coverage, throughout the project this need was fulfilled through visiting international specialists and the support of one politician in particular who engaged to a great extent on the scientific knowledge for their political campaign drawing attention to the LAA and creating respect for its influence. Bergen also participated in the three day communications workshop and future strengths would lie in utilising any learning from those days and disseminating that to the MARE partners beyond MARE, supporting the open dialogue approach of the LAA. Another specific recommendation would be to reflect on own organically occurring adaptive management processes and support partners in delivering this learning transnationally.

### 8.1.3 Dordrecht

Another example of a successful LAA with its own personality and vision. One requirement was to implement across district influence and dissemination of learning from MARE. Support in doing so came from the training in Sheffield where the LAA may find it useful to reflect on the preferred communication style of those it aims to engage and reflect on previous strategies, how could the learning be integrated. There are also recommendations to become more transparent on processes and projects as this may support the need for regional interactions. Finally succession planning for the continuation beyond MARE looks to the horizon for future projects and embrace already existing networks regionally.

### 8.1.4 Don Catchment

For MARE the Don may have missed this opportunity due to uncontrollable circumstances but lessons can be drawn. In the future a vision and 'personality' are essential for member to identify and develop a group identity. There was a lack of coherence, external support and the area was too dispersed. There are other LAAs in the area and recommendations would be to link into already existing networks and move from a theoretical perspective to project focused to build momentum initially.

All countries may encounter the economic and financial concerns facing the Don Catchment today and the lessons learned may be of use to safeguard the alliances under future constraints.

# 9 Overall conclusions & Future Aims

In a time of great uncertainty about environmental and socio-economic factors there is a need to do things differently; innovation is not an option it is a necessity. LAAs can provide an atmosphere for sharing ideas and developing innovation outside the mainstream day to day process which itself may need reform. There can be no one single structure for developing and implementing an LAA but general recommendations can be made. As shown here, to create an innovative, flexible and productive network with various professional and knowledge 'buy in' a common vision, decision process and characteristics all need to be considered. The level of risk needs to be pitched appropriately and is culturally, structurally and goal influenced. The socio-psychological factors that are at interplay throughout this process should not be underestimated and can be the glue that binds or the procrastination and alienation that disable a network. It is important to reflect on functioning of alliances and consider socio-psychological perspectives as these aspects are often neglected, being seen as superfluous to work being done. Ultimately it is the trans-disciplinary and transnational learning and 'fun' that keep partners and stakeholders' interest while creating an atmosphere of trust enabling innovation to flourish.

The outcomes and functioning of the various LAAs reviewed here were each different. Some, such as the Dordrecht and Bergen LAAs were highly innovative, even re-writing rules and regulations, whilst others, such as the Don catchment alliance, collapsed without significant outputs. Other alliances, such as in Hannover, worked effectively to deliver an interpretation of the requirements and implementation of the EU Flood Directive, without really changing what was 'normal practice' locally. The LAAs appeared to function irrespective of spatial scales with a range of these being dealt with – catchment to local schemes. LAAs can innovate only if everyone involved adopts an open minded approach and institutional positions are flexible and decision makers are willing to listen (reference or conclusion). Established processes and institutions with responsibilities for making decisions often feel challenged by such partnerships and in at least one of the MARE LAAs, such partners adopted an 'information providing' stance rather than entering into meaningful and open discourse.

Development of mutual trust, legitimacy, outputs and an open and frank atmosphere as well as working together on tangible and specific projects, are the crucial components that motivate LAA members' commitment and ability to plan and develop a shared vision and thence to innovate. However, creating this working environment often took longer than anticipated in the 7 LAAs investigated. Social science approaches, such as

social games, were found to be effective in supporting what was needed to overcome sectoral, institutional or personal barriers, strengthening team spirit. LAA sessions have to be inviting and attractive to participants (also by embedding “surprising effects” such as live simulation of a flood event) especially in the initial set-up phase, which necessitates knowledge acquisition by participants' for the planning/innovation phase. Thus, the capacity building processes within the LAA, although time and resource intensive, should continuously strive to support the decision making process.

An integrated approach, including harmonisation of activities with EU directives and local planning procedures (here e.g. 2000/60/EC or development plans), has to be taken throughout, making sure that all relevant stakeholders are involved. This can also lead to diverging interests amongst the LAA partners, which can be addressed using social and behavioural science methods and tools, allowing development as a process and hence sufficient time to become established.

There are iterative processes still on-going that excite partners because new approaches are emerging that are not yet tested. In the future what works and what doesn’t will be observed and applied to issues as they arise. Further queries arise from this process; how to continue beyond MARE and apply this learning in other fields? Is it easier with a big issue like climate change to focus on as it affects more people and it is in the public consciousness, sustainability may have become a jaded term but can we aim for it without referring to it? LAAs have their own personalities and need to be supported as such; importance of individual support should not be underestimated. Support can be given to LAAs to develop awareness of others’ risk perception or at least to mitigate the negative effect through framing training (e.g. Lems et al, 2011). Generic support does not have any real effect on change; LAAs can easily go through the motions and miss individual needs. Those within the networks need to be less constrained by their job titles, hierarchies and be able to speak freely to be innovative and accept risks. Leaders and champions are necessary, their characteristics are also important and the more risk averse will be less inclined to make decisions that may hinder innovation, but the approach also needs to be balanced. Finally LAAs need to be adaptable, for appropriate people to lead on appropriate tasks, not too rigidly structured where a networked approach is most inclusive and innovative. WP1 has been able to gain relevant information from most of the municipalities that has informed the requirements for general useful support and recommendations for further individualised support.

Future recommendations for the MARE LAAs:

1. A further round of interviews in a year follow up to assess how LAAs have developed beyond MARE and what has been applied from the recommendations and training.
2. Action research direct involvement with an LAA to assess community and social impacts
3. Action research with an LAA to assess impact of stakeholder engagement strategies
4. Future research into the impact LAAs have to influence policy and plans
5. How innovative solutions truly translate into organisational cultures
6. Future research into cross-disciplinary transactions from the psychological, social and policy arenas.

7. Examine the interplay that occurs within institutions such as the EA on innovation in smaller networks.

# 10 General Recommendations

The review and assessment of the MARE LAAs has provided some overall findings that should be applicable to all LAAs. These have been listed below.

1. Stakeholder Engagement Strategy

   Continuous assessment could be used to support the evaluation of members' perceptions of the LAA throughout its operation. One way to do this would be to adapt a clinical tool - therapists use questionnaires to gauge client satisfaction and perceptions of the therapist and the therapeutic relationship in therapy. This could be used to gain insight from members about their satisfaction with the alliance.

2. Assessment of Members

   Characteristics of individuals can be assessed through a risk questionnaire, however, some individuals are opposed to taking part, but this in itself can support an assessment of those individuals' aversion to risk. It may be framed as a risk to take part.

   Another less threatening technique used by psychiatrists to assess risk propensity can be seen through the use of an 'ice breaker'. This can be done as a fun exercise and will support relationship development at the early stages of an LAA[18].

3. Flexible Leadership

Organically evolving leaders are a natural part of the functioning of an LAA in response to project areas and contexts, inspiring members to take the lead with projects or pieces of legislation of most benefit and interest to themselves and their organisation. This should take a non-hierarchical approach that supports an open dialogue and the ability to reflect on own frames and communication styles to achieve the best outcomes from members and their interactions.

4. Agreed communication strategies

Some partners may have better relationships than others, thus recognition of who is best to communicate with whom is beneficial. Adaptive management processes are needed to ensure the establishment of reporting, facilitating, reflecting and any other areas

[18] Place eight boxes in a circle with one in the middle. The one in the middle should be opened first, inside is some money and the instructions in this box state that there is money (or some other incentive, it has to be as emotive as money or the experiment will not work. Money is practically universal) in each box and the money found when a box is opened may be kept by the individual. However, there is a catch, one box has a devil's mask in it, if this is opened all of the previous money collected cannot be kept. For the experiment do not put a devil's mask in any of the boxes, all should have money in them. If an individual opens all the boxes with no hesitation they have very high risk propensities and may need balancing on decisions within the group, otherwise scores can be related to the numbers of boxes opened: 0-4 Risk Averse; 4-5 Neutral; 6-9 High Risk Propensity.

that may arise in the development of new or existing networks. For example, will there be a lead beneficiary or multiple?

5. United Vision and Personality

The personality or 'shop window' supports LAAs' in the ability to unite as a group rather than as disparate individuals. An agreed vision supports a clear understanding of the function and membership and in some cases supports a stage of hibernation if necessary.

6. Defined roles and responsibilities

These are essential for conflict resolution and knowledge dissemination. Individuals require a clearly defined role and responsibilities in order to communicate on the appropriate level and decrease misunderstandings.

7. Legitimacy

Legitimacy is paramount for members, organisations, municipalities, politicians and academics to see the productivity in their involvement, in turn supporting the justification for membership, and evidence of political and social impact.

8. Fun and friendship!

As in all areas of life, individuals invest time, share knowledge and support those they like, creating long lasting networks of support that will exist long after project funding and focus have ceased. Without enjoyment, LAA membership can become an unwanted chore. Here team building and fun events can help most members look forward to LAA events.

Each LAA is very different due to many varying aspects such as: culture; decision processes; structure; aims and visions of the individual LAA; context of operation. The only way to have useful, effective support to continue the LAAs and encourage innovative approaches is through sharing information and transparency; creating a culture of trust and free communication. A more networked approach by an LAA engenders a greater degree of inclusivity, and the influence of leaders and champions within each LAA is largely individualised and culturally influenced.

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# Appendix 1

OBJECTIVE EVALUATION OF RISK

Sex: □ Male  Female Age:

Educational Level □ Attended University  Professional qualifications

Profession:

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INSTRUCTIONS

A series of hypothetical situations is presented below. Each will describe a fictitious problem and three possible solutions. Your task is to choose the solution that seems best to you in each problem. There are no right and wrong answers. The idea is merely to determine your choices. Do not over-think your answers: simply circle the one that seems best in each case (choose only one answer).

**1) A flood threatens the lives of 600 people. Choose the emergency plan that seems best among the following three options:**

a) Save 200 homes at random and sacrifice the rest.
b) A 1/3 chance of saving 600 homes and a 2/3 chance they will all be lost.
c) A 1/2 chance of saving 400 homes and a 1/2 chance that they will all be lost.

**2) You need to send 1,000 urgent invitations to an upcoming conference. You must choose between three different delivery companies:**

a) One will allow 250 invitations to arrive on time and the rest will be late.
b) One has a 1/3 chance of delivering 750 on time and a 2/3 chance they will all arrive late.
c) One has a 1/4 chance they will all arrive on time and a 3/4 chance they will all arrive late.

**4) A Canned goods company must buy a machine to package two million cans of mussels. Choose between the following three machines:**

a) One has a 1/4 chance of breaking all the cans.
b) One has a 1/2 chance of breaking a million cans.
c) One will break half a million cans.

**5) An urgent piece of work, completing twelve reports, must be done. Choose among these three employees to assign the work:**

a) One will certainly complete twelve reports, with a 1/2 chance of doing the work poorly.
b) One will complete six reports without error.
c) One will complete ten reports, with a 2/5 chance of doing the work poorly.

**6) You need to choose a new camera to take photographs in sewers to assess their condition. Choose among the three available camera models according to their performance:**

a) One camera has a 1/4 chance of taking all the photos correctly and a 3/4 chance of not taking any correctly.
b) One camera will take a quarter of the photos correctly.
c) One camera has a 1/2 chance of taking half the photos correctly and a 1/2 chance of not taking any correctly.

**7) Contaminated water threatens livestock on a dairy farm. There are 20 sick cows and three available veterinary treatments:**

a) One gives each cow a 50% chance of survival and can be administered to all the animals.
b) One will save all the animals to whom it is administered with absolute certainty, but it can only be administered to 10 cows.
c) One gives each animal an 83% chance of survival and can be administered to 12 cows.

**8) A collector must verify the authenticity of 20 works of art in a limited amount of time. Three methods are available:**

a) One, in the time allotted, will allow you to authenticate 5 works with 100% certainty.
b) One, in the time allotted, will allow you to authenticate 10 works, but with only 50% certainty.
c) One, in the time allotted, will allow you to authenticate 20 works, with 25% certainty.

**9) A local MP is preparing a campaign for the upcoming elections. Choose among the following three strategies:**

a) One has a 1/3 chance of boosting voting by 30%, and a 1/3 chance that it will stay the same.
b) One guarantees a 10% boost in voting.

c) One has a 1/2 chance of boosting voting by 40%, and a 1/2 chance of decreasing it by 20%.

**10) A police department wants to enact a new plan to prevent crime. There are three possible options:**

a) One plan will reduce crime by 20%.
b) One plan has a 3/4 chance of reducing crime by 30%, and a 1/4 chance of increasing it by 10% instead.
c) One plan has a 1/2 chance of reducing crime by 40% and a 1/2 chance the crime rate will not be reduced at all.

**11) When buying a new home, you must choose between the following mortgage options:**

a) A fixed interest rate where you will end up paying 200,000€ in interest.
b) A variable interest rate where there is a 1/3 chance you will end up paying 100,000€ in interest and a 2/3 chance you will end up paying 250,000€ in interest.
c) A variable interest rate where there is a 1/2 chance you will end up paying 120,000€ in interest and a 1/2 chance you will end up paying 280,000€ in interest.

**12) Sale season is coming and this is the time to buy the item you have wanted for a long time:**

a) Wait 15 days for prices to drop 50%, knowing that by then, there is a 1/3 chance you will not be able to find the item you want.

b) Wait 5 days for prices to drop 33%, knowing you will find the item you want with total certainty.

c) Wait 30 days for prices to drop 66%, knowing by then there is a 1/2 chance you will not be able to find the item you want.

**13) Two children, one healthy and one weak, need to get vaccinated so they do not get sick. There is only one dose of the vaccine left. Give:**

a) The entire dose to the healthy child, ensuring he or she will continue to be healthy. The weak child will definitely get sick.
b) The entire dose to the weak child so that each child will have a 1/2 chance of not getting sick.
c) A little more than half the dose to the healthy child so he or she will have a 2/3 chance of not getting sick, while the weak child will at least have a 1/3 chance of not getting sick.

**14) As head of state, you must promote a plan to fight corruption. You have three alternatives:**

a) A plan with a 75% chance of catching all corrupt people but a 25% chance of being ineffective and catching none.
b) A plan with a 50% chance of catching all corrupt people and a 50% chance of only catching half.
c) A plan that guarantees catching three quarters of corrupt people.

**15) You are planning the heist of the century that will enable you to buy yourself an island and retire. You must choose among three possible targets:**

a) A bank where 6 million € are kept, where you calculate you have a 1/3 chance of success.
b) A bank where 30 million € are held, where you calculate you have a 1/15 chance of success.
c) A bank where 90 million € are kept, where you calculate you have a 1/45 chance of success.

**16) You have been caught committing the heist of the century and now you plan to escape from jail. You have three escape options. You choose:**

a) The easy route, where there is scarcely any chance of being caught (1/6) but failure to escape would increase your sentence 18 months.
b) The medium route, where there is a greater chance of getting caught (1/4) but failure to escape would increase your sentence 12 months.
c) The difficult route, where you have a greater chance of getting caught (1/2) but failure to escape would increase your sentence only 6 months.

**17) You grow corn for a living. Choose among the following methods to continue being competitive in your field:**

a) Continue using traditional agricultural practices, assuring 40 tons of grain.
b) Use imported seeds that, if they take (1/4 chance), will bear 160 tons of grain.
c) Use transgenic seeds that, if they take (1/8 chance), will bear 320 tons of grain.

**18) You have a week before some international funding meetings and you have to decide how to prepare for nine meetings:**

a) Study for all of them, giving you a 33% chance of passing all nine. If not, you will fail them all.
b) Study for the majority of them, giving you a 50% chance of passing six and a 50% chance of failing them all.
c) Study for the three you are best prepared for, ensuring you will pass those three and fail the other six.

**19) You are the director of a company and have to choose a three-year plan:**

a) Do not merge your company with another, giving you a 20% chance of gaining no benefits and an 80% chance of gaining 2 million €.
b) Merge with another company, giving you a 40% chance of gaining no benefits and a 60% chance of gaining 2.67 million €.
c) Merge with multiple other companies, giving you a 60% chance of gaining no benefits and a 40% chance of gaining 4 million €.

**20) New technologies have allowed you as a doctor to recommend one of the following in-vitro fertilization methods to your patients:**

a) A treatment that gives patients a 1/2 chance of having a baby and costs 6,000€.
b) A treatment that gives patients a 2/3 chance of having a baby and costs 8,000€.
c) A treatment that gives patients a 1/10 chance of having a baby and costs 1,200€.

**21) You are in the military in wartime and find yourself responsible for the safety of 20 soldiers. Select a combat strategy:**

a) One guarantees that four soldiers will die (at random).
b) One means a 20% chance that all the soldiers will die and an 80% chance that none will die.
c) One means a 50% chance that 8 soldiers will die and a 50% chance that none will die.

**22) On a deserted island, a group of survivors must ration out food and water while awaiting their rescuers. There are three possible rationing strategies:**

a) One gives the survivors a 50% chance of living, but there is a 50% chance they will all die.
b) One offers a 25% chance all the survivors will live and a 75% chance only a third will live.
c) One guarantees that half the survivors will be alive when the rescue team arrives, but the rest will have died.

**23) Contagious disease is threatening a crop. There are three pesticides available of variable strengths. Choose one:**

a) One will save the root stocks (one quarter of the crop) but will kill the rest.
b) One has a 1/4 chance of saving the stocks and a 3/4 chance of killing them all.
c) One has a 1/2 chance of saving half the crop and a 1/2 chance of killing all the stocks.

## Amended Questionnaire

WATER AND FLOOD RISK MANAGEMENT QUESTIONNAIRE

The purpose of this questionnaire is to:

- evaluate the approach of each LAA towards innovation,
- evaluate structural commonalities and differences
- gain knowledge and support for the LAAs' continuation beyond MARE and
- derive recommendations for individualised support needs.

This will help to create a vehicle to share best practice transnationally.

Sex: □ Male □ Female Age: □ 18-25 □ 26-35 □36-45 □45+
Educational Level □ Secondary S. □ Attended University □ Professional qualifications
Profession:

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INSTRUCTIONS

A series of hypothetical situations is presented below. Each will describe a fictitious problem and three possible solutions. Your task is to choose the solution that seems best to you in each problem. There are no right and wrong answers. The idea is merely to determine your choices. Do not over-think your answers: simply circle the one that seems best in each case (choose only one answer).

**1) A flood threatens the homes of 600 people. Choose the emergency plan that seems best among the following three options:**

a) Save 200 homes at random and surrender the rest.
b) A 1/3 chance of saving 600 homes and a 2/3 chance they will all be lost.
c) A 1/2 chance of saving 400 homes and a 1/2 chance that they will all be lost.

**2) You need to send 1,000 urgent invitations to important stakeholders for an upcoming flood risk conference. You must choose between three different delivery companies:**

a) One will allow 250 invitations to arrive on time and the rest will be late.
b) One has a 1/3 chance of delivering 750 on time and a 2/3 chance they will all arrive late.
c) One has a 1/4 chance they will all arrive on time and a 3/4 chance they will all arrive late.

**3) You must buy a machine to sort two million information leaflets about flooding for householders. Choose between the following three machines:**

a) One has a 1/4 chance of destroying all the leaflets.
b) One has a 1/2 chance of destroying a million leaflets.
c) One will destroy half a million leaflets.

**4) An urgent piece of work, completing twelve climate change reports, must be done. Choose among these three employees to assign the work:**

a) One will certainly complete twelve reports, with a 1/2 chance of doing the work poorly.
b) One will complete six reports without error.
c) One will complete ten reports, with a 2/5 chance of doing the work poorly.

**5) You need to choose a new camera to take photographs in sewers to assess their condition. Choose among the three available camera models according to their performance:**

a) One camera has a 1/4 chance of taking all the photos correctly and a 3/4 chance of not taking any correctly.
b) One camera will take a quarter of the photos correctly.
c) One camera has a 1/2 chance of taking half the photos correctly and a 1/2 chance of not taking any correctly.

**6) Contaminated water threatens livestock on a dairy farm. There are 20 sick cows and three available veterinary treatments:**

a) One gives each cow a 50% chance of survival and can be administered to all the animals.
b) One will save all the animals to whom it is administered with absolute certainty, but it can only be administered to 10 cows.
c) One gives each animal an 83% chance of survival and can be administered to 12 cows.

**7) You must verify the authenticity of 20 data sets for a flood risk model in a limited amount of time. Three methods are available:**

a) One, in the time allotted, will allow you to authenticate 5 data sets with 100% certainty.
b) One, in the time allotted, will allow you to authenticate 10 data sets, but with only 50% certainty.
c) One, in the time allotted, will allow you to authenticate 20 data sets, with 25% certainty.

**8) A local MP is preparing a campaign to improve local water management for which householders can cast votes. Choose among the following three strategies:**

a) One has a 1/3 chance of boosting voting by 30%, and a 1/3 chance that it will stay the same.
b) One guarantees a 10% boost in voting.
c) One has a 1/2 chance of boosting voting by 40%, and a 1/2 chance of decreasing it by 20%.

**9) A police department wants to enact a new plan to prevent vandalism of a SuDS scheme. There are three possible options:**

a) One plan will reduce vandalism by 20%.
b) One plan has a 3/4 chance of reducing vandalism by 30%, and a 1/4 chance of increasing it by 10% instead.

c) One plan has a 1/2 chance of reducing vandalism by 40% and a 1/2 chance the vandalism rate will not be reduced at all.

**10) When beginning a new project, you must choose between the following borrowing options:**

a) A fixed interest rate where you will end up paying 200,000€ in interest.
b) A variable interest rate where there is a 1/3 chance you will end up paying 100,000€ in interest and a 2/3 chance you will end up paying 250,000€ in interest.
c) A variable interest rate where there is a 1/2 chance you will end up paying 120,000€ in interest and a 1/2 chance you will end up paying 280,000€ in interest.

**11) Local land is available and reducing in price on which it would be beneficial to place SuDS schemes. You need to purchase this land, do you:**

a) Wait 15 days for prices to drop 50%, knowing that by then, there is a 1/3 of a chance you will not be able to buy the land.

b) Wait 5 days for prices to drop 33%, knowing you will find the item you want with total certainty.

c) Wait 30 days for prices to drop 66%, knowing by then there is a 1/2 chance you will not be able to find the item you want.

**12) Two children, one healthy and one weak from a waterborne illness, need to get vaccinated so they do not get sick. There is only one dose of the vaccine left. Give:**

a) The entire dose to the healthy child, ensuring he or she will continue to be healthy. The weak child will definitely get sick.
b) The entire dose to the weak child so that each child will have a 1/2 chance of not getting sick.
c) A little more than half the dose to the healthy child so he or she will have a 2/3 chance of not getting sick, while the weak child will at least have a 1/3 chance of not getting sick.

**13) As head of your municipality, you must promote a plan to fight corruption. You have three alternatives:**

a) A plan with a 75% chance of catching all corrupt people but a 25% chance of being ineffective and catching none.
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c) A plan that guarantees catching three quarters of corrupt people.

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c) Use seeds GI modified for high drought tolerance that, if they take (1/8 chance), will bear 320 tons of grain.

**15) You have a week before some international funding meetings and you have to decide how to prepare for nine meetings:**

a) Study for all of them, giving you a 33% chance of passing all nine. If not, you will fail them all.
b) Study for the majority of them, giving you a 50% chance of passing six and a 50% chance of failing them all.
c) Study for the three you are best prepared for, ensuring you will pass those three and fail the other six.

**16) You are the director of a flood insurance company and have to choose a three-year plan:**

a) Do not merge your company with another, giving you a 20% chance of gaining no benefits and an 80% chance of gaining 2 million €.
b) Merge with another company, giving you a 40% chance of gaining no benefits and a 60% chance of gaining 2.67 million €.
c) Merge with multiple other companies, giving you a 60% chance of gaining no benefits and a 40% chance of gaining 4 million €.

**17)Your house is at risk of flooding, you have been recommended a choice of 3 alternatives::**

a) A strategy that reduces the flood risk by ½ and costs 6,000€.
b) A strategy that reduces flood risk by 2/3 and costs 8,000€.
c) A strategy that reduces flood risk by 1/10 and costs 1,200€.

**18) You are responsible for sanitation in a refugee camp, you need to select from one of 3 strategies that are affordable:**

a) One guarantees that four people will die (at random).
b) One means a 20% chance that all the people will die and an 80% chance that none will die.
c) One means a 50% chance that 8 people will die and a 50% chance that none will die.

**19) On a deserted island, a group of survivors must ration out food and water while awaiting their rescuers. There are three possible rationing strategies:**

a) One gives the survivors a 50% chance of living, but there is a 50% chance they will all die.
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**20) Contagious disease is threatening a crop. There are three pesticides available of variable strengths. Choose one:**

a) One will save the root stocks (one quarter of the crop) but will kill the rest.
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c) One has a 1/2 chance of saving half the crop and a 1/2 chance of killing all the stocks.

**21) You are planning the heist of the century that will enable you to buy yourself an island and retire. You must choose among three possible targets:**

a) A bank where 6 million € are kept, where you calculate you have a 1/3 chance of success.
b) A bank where 30 million € are held, where you calculate you have a 1/15 chance of success.
c) A bank where 90 million € are kept, where you calculate you have a 1/45 chance of success.

**22) You have been caught committing the heist of the century and now you plan to escape from jail. You have three escape options. You choose:**

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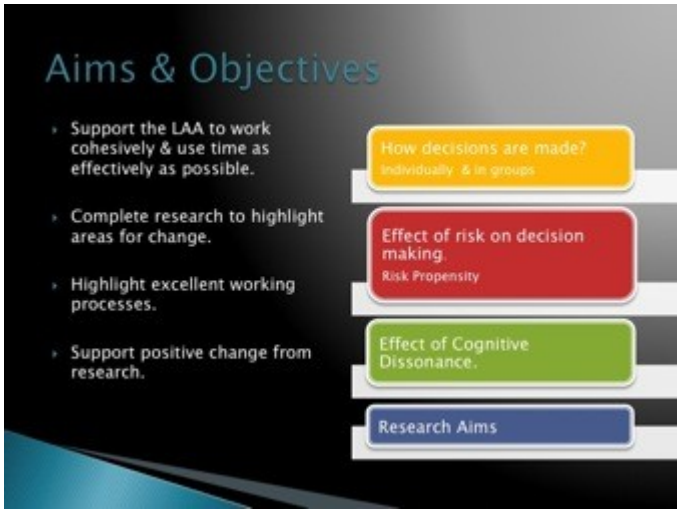
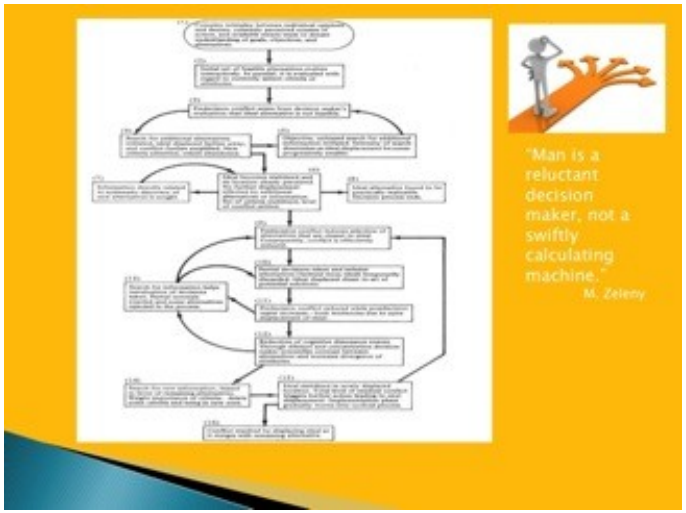
c) The difficult route, where you have a greater chance of getting caught (1/2) but failure to escape would increase your sentence only 6 months.

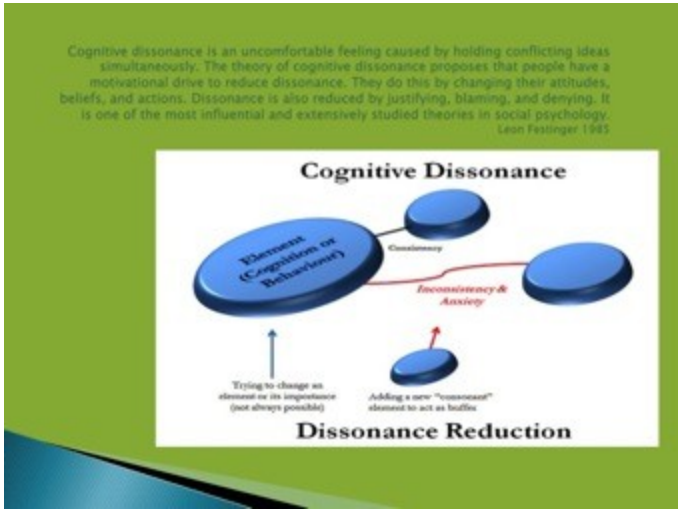
## Appendix 2 – presentation on risk



"Man is a reluctant decision maker, not a swiftly calculating machine."
M. Zeleny


Factors Effecting Risk Behaviour
Sensation Seeking
Impulse control
Risk Propensity
Risk Perception
Cognitive Dissonance


Personal & Social Identity
Self Categorization Theory, Turner et al.
Beliefs
Values
Person al 'I' & 'Me'
Experie nces
Assum ptions
Colleague
Enginee r
Social 'we' & 'Us'
Employer
Male/ Female
How may this impact on our decision process?


Cognitive dissonance is an uncomfortable feeling caused by holding conflicting ideas simultaneously. The theory of cognitive dissonance proposes that people have a motivational drive to reduce dissonance. They do this by changing their attitudes, beliefs, and actions. Dissonance is also reduced by justifying, blaming, and denying. It is one of the most influential and extensively studied theories in social psychology.
Leon Festinger 1985
Cognitive Dissonance
Element (Cognition or Behaviour)
Consistency
Inconsistency & Anxiety
Trying to change an element or its importance (not always possible)
Adding a new "consonant" element to act as buffer
Dissonance Reduction

## How do we embed a culture of change?

- Research on Risk & Decision making.
- Organisations core assumptions.
- Support a Social Identity to form.
- Through interviews, questionnaires & Thematic Content Analysis.


MARS

## Research Aims

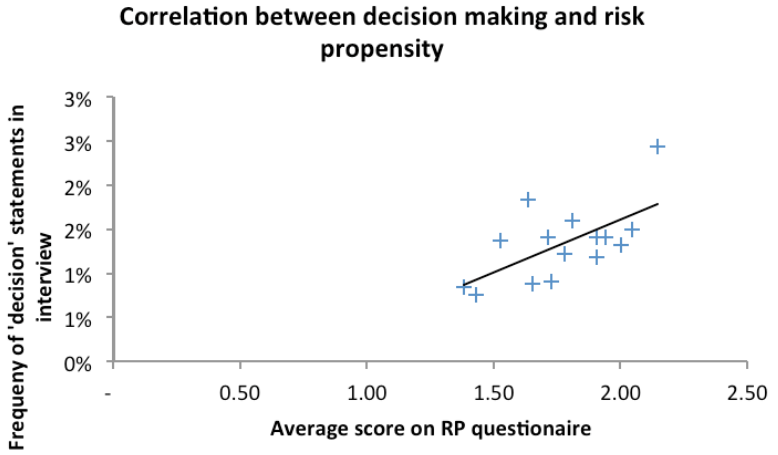
1. Understand specific decision norms & Assumptions
2. Evaluate risk on decisions as a whole & Individually.
3. Consider a social identity as an LAA
4. This will support recommendations for process structures
5. Further research that may be necessary

## Appendix 3 Statistical analysis of questionnaire data

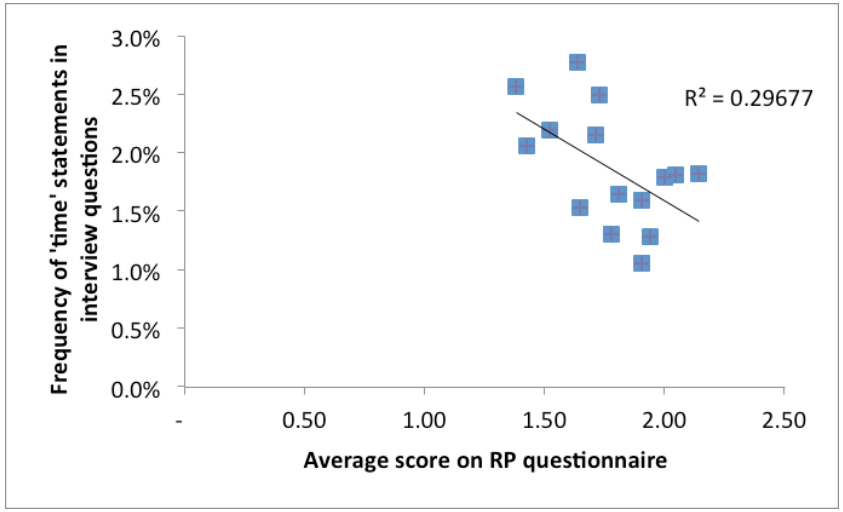
To test the hypothesis that the most productive LAAs had combinations of risk takers and risk avoiders, and the variables stated above, NVivo 9[19] was used to analyse the interviews. The qualitative data were uploaded and collated, then classified into themes emerging from the transcriptions. Themes allow for thematic content analysis, some of which are generic across the LAAs and some specifically connected to cultural and structural variables. This form of analysis considers the use of language and how it reflects commonalities and differences. This also highlights the theoretical models we were trying to assess through the use of language that can be statistically evaluated. Thus the effect of decision processes, innovation perception, risk perception and time constraints could be examined.

The non-directional hypothesis used in an excel analysis was that risk propensity might have an affect on decision-making processes and the perceived innovation of the learning alliances. Those alliances with a combination of high-risk propensity and risk averse stakeholders would be perceived to be more innovative and decision-making processes seen as more of a market form of governance. In turn strengthening the membership of the alliance, developing feelings of group identity, trust and exceptional communication processes resulting in the continuation of the LAAs beyond MARE.

The plots below illustrate the correlations

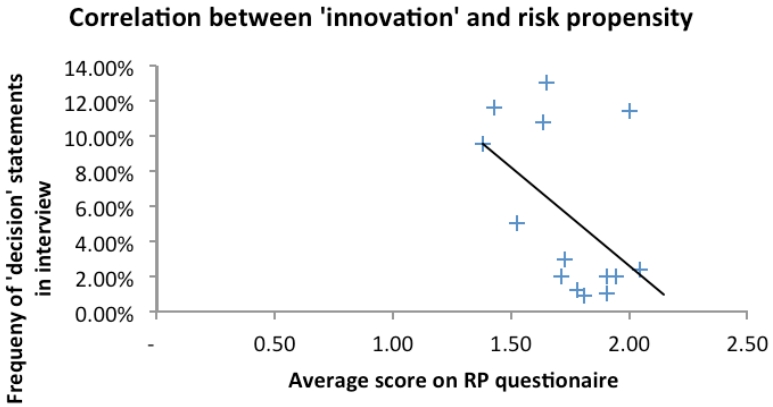



Statistical significance (r=0.63, p>95%).




(r=0.68 p>95%)

[19] http://www.qsrinternational.com/products_nvivo.aspx


Correlation between 'innovation' and risk propensity
Frequeny of 'decision' statements in interview
14.00%
12.00%
10.00%
8.00%
6.00%
4.00%
2.00%
0.00%
-
0.50
1.00
1.50
2.00
2.50
Average score on RP questionaire

(r=-0.50 p>90%)

## Appendix 4 Semi-structured Interview questions

Interview Learning Action Alliance, 2011

**Thank you for taking part in this interview. This is designed to gain more insight into your LAA's individual needs to enable us to develop a package of support for your LAA. Please let me assure you that anything you feel may be relevant will be useful to inform this questionnaire. At any point questions can be repeated and clarified, please take as long as you need to answer each question.**

1. What does an innovative approach mean to you?
   *Relates to sustainable urban water management*

2. How would you describe your working relationships?

3. What is your role in the LAA?

4. How would you describe your role at work?

5. What do you gain from being a member of the LAA?
   *Make sure the emphasis is on the individual*

6. What process do you go through to deal with conflicting priorities?

7. How is conflict avoided? How is it dealt with?

8. How are innovatory ideas imbedded?
   *Ie, part of the normal working process*

9. A common theme from the Dordrecht meeting was trust, what are your rules of engagement?
   *Formal or informal*

10. What do you think makes a good decision maker?

11. What do you think makes a good network?

12. How does your decision making process differ from your company/LAA?
    *Morals, beliefs, ideals?*

13. How is decision making delegated?

14. How would you describe your company? Network, Market or Hierarchical governance approaches

15. What makes a good leader/champion?

16. How are innovatory ideas introduced?

17. How have you identified leaders and champions in your LAA?

18. Is there a formal training process for your leaders and champions or are they motivated individuals? Effect if Paul left?

19. How easy is it for individuals to bring innovative ideas, who are not leaders or champions