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A framework for profiling the characteristics of risk governance in natural hazard contexts

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2207

Abstract

The observed moves over recent decades away from government towards a broader practice of “governance” is as relevant to the handling of natural hazards as it is to other societal concerns. Key characteristics of this change include the emergence of multi-level governance processes and the “hollowing out” of the nation state; shifts away from the exercise of centralised authority towards the involvement and collaboration of a multiplicity of actors specific to each policy area; the creation of new forms of authority and control; and changing distributions of responsibilities between the state and other actors. However, the extent to which these shifts have taken place across the full diversity of national contexts in Europe, and can be observed specifically in relation to the governance of natural hazards, is very much open to judgement and debate.

In this paper, we propose a framework for profiling risk governance in relation to key characteristics identified in both the general governance literature and in more specific work on risk governance. This framework can be flexibly applied in relation to a specific hazard and national/regional context and enables qualitative profiling across a spectrum of eight governance characteristics. Past trends and likely future changes can also be represented. We discuss the formulation of this framework as well as illustrating how it can be used in a process of discussion and debate about risk governance issues. We provide examples of the ways in which the profiling approach can enable comparison between risk governance contexts and approaches, and how it can be used in a variety of potential settings.

1 Introduction

Risks are always managed within a broader context of relationships between governments, citizens, civil society and private business; relationships that shift and evolve over time with changing political currents and economic conditions. Over the past thirty years or so, moves away from government towards a broader practice of “governance”

2208

have been identified (Rhodes, 1997; Bevir and Rhodes, 2003), a shift that is potentially as relevant to the handling of natural hazards as it is to other societal concerns such as economic regeneration or transport. The characteristics of what has been termed “new governance” include the emergence of multi-level governance processes and the “hollowing out” of the power of the nation state; moves away from the exercise of centralised authority towards the involvement of a multiplicity of private sector and civil society actors; the creation of new forms of authority and control; and changing distributions of responsibilities between the state and other actors, including individual citizens (Walker et al., 2010).

In the case of natural hazards in a European context, we can observe examples of how each of these generic emerging governance characteristics have played into the reform of structures and strategies of hazard and risk management, both in EU level provisions and in the measures of particular nation states and regions. However, there is also much variation in the extent to which these characteristics have taken hold – for example, in the extent of multi-stakeholder participation, or the degree of individualization of responsibility for hazard protection – across the complex and varied European natural hazard landscape. There is also an undoubted need for debate and discussion around how far these new governance characteristics should be integrated into the policy and practice of natural hazard management; where some might see progressive reforms, others might see damaging undermining of established principles of democratic practice and equality of treatment.

In this paper, we propose a framework for profiling risk governance practice in relation to key characteristics identified in both the general governance literature and in more specific work on risk governance. We argue that this profiling framework is of value in (i) drawing out the governance differences that exist between national and regional settings in Europe and between the different forms of natural hazard that are faced across the European space; and (ii) providing a useful stimulus and focus for debate and discussion around the trends of change in governance practice that have been, and are continuing, to take place. In the first part of the paper we summarise

2209

the key shifting attributes of governance and how these pertain to natural hazards in Europe; these key attributes directly inform the content of the profiling framework. In the second part of the paper we explain the development of the framework and discuss how this can be used in processes of discussion and debate in different risk governance contexts.

2 From government to governance

The move from government to governance first began to be observed during the 1980s and 1990s, particularly in a European context during a period of scaling down of the size and remit of the public sector (Rhodes, 1997; Walker et al., 2010). Governance is typically captured by a set of distinctive characteristics. Most crucial is a move away from the exercise of centralised governmental control and towards the emergence of multiple governance actors, networks and partnerships in place of a single sovereign authority (Rhodes 1997), such that the state is no longer necessarily the main player in the system (Rosenau, 2004; Ahrens and Rudolph, 2006). This means that there will be increasing interdependence between actors and agencies, a need to negotiate shared goals and some degree of blurring of boundaries between private, public and voluntary sectors. Governance is characterised by different state-society relationships and responsibilities, involving co-resourcing, co-decision and co-delivery, with the state becoming increasingly dependent on other actors to deliver services and to implement policies (Bever and Trentmann, 2007). The “hollowing out of the nation state”, to which governance theorists often refer, captures the dissolution of linear chains of command associated with different tiers of government (local, regional, national, international) and the emergence of more complex structures based on networks involving social groups, private companies, policy makers, civic and voluntary organisations and agencies, which can work interdependently and communicate across boundaries at different levels (Rhodes, 1997).

2210

With these changes have come new forms of authority and control. Traditional techniques of coercion and enforcement are replaced by arguably more subtle tactics of diplomacy and management. In governance, the exercise of authority still occurs, but it involves the development and use of a broader range of strategies and implementation tools including informal agreements, negotiated solutions to problems and initiatives aimed at shaping people's expectations, norms and habits (Rosenau, 2004).

These observed key elements of the shift from government to governance have prompted much discussion and debate by researchers, practitioners and policy makers. There have been suggestions that the changing nature and increasing prominence of some global problems, such as climate change, terrorism and financial crises inherently require new forms of collaborative and distributed governance process as they cannot be addressed by regional or national agencies or states working in isolation (e.g. Beck, 1992; Bulkeley, 2001; Marks and Hooghe, 2004). Positive perspectives on the emergence of governance also emphasise that the changes can increase democracy and empower individuals and groups through increased participation and the recognition of diversity through plurality of perspectives (Marks and Hooghe, 2004; Hajer and Versteeg, 2005; Rosenau, 2004). However, critics of the "new governance" argue that power relations still play an intrinsic role in policy negotiations and that whilst participation can give an impression of transparency, engagement and interaction, decision-making still rests in the hands of a few influential individuals or organisations (Bache and Flinders, 2004). There are also major debates about issues of accountability and justice, both of which formerly rested with elected political parties, but are now becoming increasingly opaque or elusive as a consequence of the distribution of management responsibility to the private sector or to un-elected bodies and the difficulties in stimulating, coordinating and adjusting activities amongst and between different actors (Bovens, 1990; Ahrens and Rudolph, 2006).

Such evaluations of governance practice can be discussed in rather sweeping terms, but in practice there are considerable differences between countries and regions in the extent to which the key attributes of the shift from government to governance have

emerged, and in the extent to which they have permeated different practices, processes and domains of state policy and action. Techniques for revealing rather than subsuming such variation and for promoting debate about changes in governance policy and practice are arguably therefore of increasing importance.

5 **3 Governance of risks from natural hazards in Europe**

The governance of risks from natural hazards is the domain of policy and action in which we are particularly interested in this paper. As more communities, property and infrastructure are exposed to natural hazards, and as greater complexity in physical, social, cultural and systemic forms of vulnerability are produced, hazardous events have been seen to become more likely to evolve into disasters (e.g. Pelling, 2003a, b; Turner et al., 2003; Cannon, 2006). Such escalations of disaster vulnerability have emphasised the need to find better ways of living with risk and in response we have seen the emergence of some of the governance shifts outlined above.

The management of natural hazards has always involved the participation of a variety of actors operating at different levels beyond those in the public sector. Emergency and disaster response activities in particular, are characterised by co-ordination between a range of public services and voluntary and community organisations (Pearce, 2003; Ahrens and Rudolph, 2006; Walker et al., 2010). However, there has been recent recognition of the need for new forms of collaboration and partnership-working on risk issues that are symptomatic of new governance arrangements. Across different hazard and national contexts we can accordingly observe greater provision for the participation of a wider range of private, non-governmental organisations and community stakeholders and the development of new roles in hazard and risk management (e.g. Christoplos et al., 2001; Kuhlicke et al., 2011). New models of governance of natural hazards can also be seen in the development of regional and local resilience forums and action groups, which integrate a range of non-governmental, public and private actors and emphasise those at risk taking greater responsibility for their own protection;

characterised by Medd and Marvin (2005) as a move towards the “governance of preparedness”. Risk communication and risk education have the potential to play key roles in these groups and networks, but are not always developed or effective in practice (e.g. Komac et al., 2010; Höppner et al., 2012).

5 The emergence of *multi-level* governance processes and practices has also become increasingly apparent. At an international scale, this is evidenced by co-operation and coordination strategies and organisations; for example, the Global Disaster Information Network, the United Nations International Strategy for Disaster Reduction (2005) and the Hyogo Framework for Action 2005–2015. The European Union has also become
10 increasingly involved in natural hazard governance through the development of funding and cooperation mechanisms for large scale emergency responses and by establishing pan-European provisions in the Floods Directive and the Water Framework Directive (Walker et al., 2010; Kuhlicke et al., 2011). Examples of networks that have a role to play in risk governance include the European Union Mediterranean Disaster Informa-
15 tion Network, which makes research results and information available to the disaster science community and the recent Academic Network for Disaster Resilience to Optimise Educational Development (ANDROID), which aims to promote co-operation and innovation across European higher education environments.

Shifts of responsibility away from the state have been increasingly associated with
20 approaches that emphasise social capacity building, adaptation and resilience rather than costly structural and technical mitigation schemes (Walker et al., 2010; Kuhlicke et al., 2011). In a European context, this has chiefly been evident in the management of flooding and water scarcity. Public strategies and policy initiatives that try to encourage businesses and householders to make buildings more flood-resistant (e.g. Defra, 2008)
25 are symptomatic of governance changes that transfer actions and costs to those at risk, whilst flood policy is still set by government. In the context of water scarcity, emphasis on demand management, changing behaviours and expectations and the development of techniques of drought-sensitive farming has gone hand-in-hand with the more traditional hard engineering solutions of reservoir and de-salinisation plant construction

2213

(e.g. Chappells and Medd, 2007; Walker et al., 2010). Hazard related insurance cover for homes and businesses has also been increasingly at issue with the socialised systems characterising arrangements for example in France and Belgium that collectively share the burden of disaster insurance, contrasting with the more individualized systems
5 (for example in the UK) that strongly marketise and segment insurance cover, to the point that those at risk can struggle to afford escalating premiums, or, in some cases, to obtain insurance cover at all (O'Neill and O'Neill, 2012).

It is therefore possible to identify a number of changes in the management of risks from natural hazards in Europe that parallel the emergence and development of gov-
10 ernance processes more generally. However, these are not universal features of the ways in which risks from natural hazards are now being governed, and we might still expect considerable variation across the full diversity of European national contexts. The wider evolving economic environment and its differential effects are also important to take into account, given that the severe credit crunch and austerity measures have in
15 some European countries denuded the public sector of funding and created sometimes enormous pressures on the budgets of departments and agencies involved in hazard governance. In any contemporary evaluation of governance practice, the availability of resources in relation to allocated responsibilities is therefore an important element, and may itself underpin the drive towards some of the new governance characteristics that
20 we have outlined.

4 Developing a framework for profiling risk governance

The discussion up to this point has distilled some of the key characteristics of the shift from government to governance and their applicability to natural hazard contexts. These characteristics have informed the content of the profiling framework to be out-
25 lined in the rest of the paper, which was developed as part of the learning achieved through the 3 yr CapHaz-Net project (Kuhlicke et al., 2012). Within this EU-funded “Co-ordination Action” a series of workshops were organised in which project researchers,

2214

external experts, practitioners and stakeholders were involved. The first phase of the project generated three thematic meetings to explore the social dimensions of natural hazards and disasters. The key concepts of social capacity building and risk governance were central to these meetings, which focused on issues of risk perception, social vulnerability, risk communication and risk education. An initial “state of the art” report (Walker et al., 2010) reviewed the underpinning literature on the general shift from government to governance, as well as more specific work on risk governance (e.g. Renn, 2008). Various issues were identified in the application of these broad ideas to the many ways in which natural hazards are encountered and handled across the EU.

Knowledge acquired from the first phase of the project was then contextualised by focusing on regional and local practices of hazard mitigation and adaptation and on different policy approaches for social capacity building across Europe. Regional workshops on droughts and heat-related hazards, alpine hazards and river catchment flooding were held in order to better understand the respective regional cultures of risk and risk governance and to explore ways of initiating social capacity building with resilience as a long-term regional goal. Discussion and learning from regional workshops led to a greater appreciation of the different governance contexts across Europe and their dynamism during a period of transition in Central and Eastern Europe and recent economic and political upheaval across the continent. The risk governance profiling framework emerged from knowledge sharing, debate and discussion at these workshops as well as from the review outlined in the previous section.

We trialled the first version of the framework at the final CapHaz-Net workshop attended by project members and invited experts from across Europe. This involved a focus group discussion of the framework and participants producing a risk governance profile for a hazard and governance context with which they were familiar. We concluded that whilst the broad idea and format of the framework was effective, further development was necessary to add to and clarify the governance characteristics. A second and final version was then produced particularly to better capture both contextual

2215

variability and change over time. The final version of the profiling framework therefore enables:

- any chosen national, regional or local natural hazard governance context to be profiled against a set of eight governance characteristics;
- positioning of the current situation for each governance characteristic along a spectrum;
- the direction and strength of past and expected future change either towards or away from the present situation to be indicated.

The aim was to capture, in relatively simple and immediate terms, the variability and dynamism of governance practice through a structure that enables any chosen national, regional or local natural hazard governance context to be profiled. The eight governance characteristics (numbered in brackets and each featuring in the earlier review discussion) address:

- governance scale and its distribution between national (1), regional (2) and local levels (3), with a spectrum from weak to strong in each case;
- how much those at risk are expected to be responsible for protecting themselves, compared to how much responsibility rests with government (4);
- the extent and culture of stakeholder participation in the governance system (5), extending from high to low
- the type of insurance provision in place, in terms of how much this is marketized and segmented according to level of risk (6);
- the extent of communication with the public about risks (7), extending from high to low;

2216

- the degree of balance between governance tasks and the availability of resources for such tasks to be carried out (8).

These provide a set of broad categories that can be applied in a generic way for different hazards. A blank risk governance characterisation template is presented in Fig. 1, whilst Fig. 2 reproduces guidance notes which explain more about the end points of a spectrum of possibilities for each of the eight governance characteristics. Users identify the current perceived position along the relevant spectrum for each risk governance characteristic, and then join these up to create a profile. Arrows can then be added to indicate past and predicted future dynamics in risk governance; arrows pointing towards the current position are used to indicate the direction and extent of change (if any) over the last 5 yr. Arrows pointing away from the current position indicate shifts (if any) expected in the future, again over a approximately 5 yr time-span. If there has been a lot of change the arrow will be longer as it will start from further away from the current position; if there not very much change it will be shorter and start from closer to the current position.

The result is a visualised governance profile that is inherently qualitative and judgemental in character; subject to the perspective and evaluation of the person creating the profile, rather than measurable in any absolute fashion. It was designed to be relatively simple to complete and to be flexible enough to be used in many different settings and for different forms of hazard, so the characteristics it is profiling are only described at a general level. During the trial stage of the development of the governance profile, some workshop participants argued that the spectrum for each characteristic should be specified, (for example, on a 1–5 scale), with each graduation precisely defined. However we have resisted this move in order to maintain the qualitative and flexible nature of the framework as this is essential to the ways in which we envisage its application and usefulness. It is to examples of its application that we therefore now turn.

2217

5 Applying the framework

As outlined above, the risk governance profiling framework enables any chosen national, regional or local natural hazard governance context to be profiled against key governance characteristics, giving individuals and groups of users insights into risk governance of a particular natural hazard or a range of natural hazards. The framework can be used to, for example, compare governance profiles for the same hazard across different contexts (for example, for earthquake hazards in different national systems), or between hazards in the same context (e.g. for a range of natural hazards on a national basis), drawing out similarities and differences and, it follows, raising questions as to why these similarities and differences exist. In this respect we see the qualitative nature of the risk profiling tool as being instrumental in stimulating and focussing discussion; indeed, this is a key way in which we envisage the framework potentially being used, with users each producing their own version and then comparing and discussing their similar or contrasting perspectives. This is particularly valuable in the context of the on-going socio-economic changes and evolving patterns of risk management outlined earlier in this paper.

To demonstrate further the different ways in which the profiling tool can be used we asked a range of people involved with knowledge of natural hazard governance in different parts of Europe to complete a profile, providing them with a set of instructions¹ and guidance notes. Their completed profiles are provided as examples, and briefly discussed below.

1. The governance of volcanoes and earthquakes in Iceland from a national perspective: As an example of how the profiling tool can be used collaboratively and to compare between hazards in the same governance context, three staff working in the monitoring and forecasting division of the national Icelandic Meteorological Office (IMO) discussed the governance of risks arising from earthquakes and

¹ A copy of these instructions and guidance note can be obtained from the authors

2218

volcanic eruptions in Iceland and jointly completed a profile for each hazard (see Fig. 3). Iceland has an established culture of monitoring, researching, educating, forecasting and warning with respect to volcanic eruptions and earthquakes and a strong national policy framework has been in existence for some time. As a consequence, we can see that there are strong commonalities in the completed profiles for both of these hazards, with differences only in apparent in the extent to which those at risk are expected to protect themselves and in the strength of regional institutions and in the direction of trend of change in resource availability.

2. The governance of landslides and earthquakes in Italy from different governance perspectives: A second example (Fig. 4) of a comparison between hazards was undertaken by two researchers who were able to complete profiles for, respectively, the governance of landslides in Modena province of the Appennines (hence a regional focus), and the governance of earthquakes at a national level. The two profiles are quite strikingly different in this case with earthquake governance seen to be generally weak, particularly at a local level, with similarly weak cultures of stakeholder participation and risk communication. Landslide governance in contrast is seen to have a particularly strong regional profile, a trend towards greater stakeholder participation and established practices of extensive risk communication, although these are diminishing. In both cases there is a similar insurance regime, an increasing responsibility on those at risk to protect themselves and, in the earthquake case, a strong trend towards diminishing resources committed to governance tasks. Revealing these similarities and differences raises questions about why they exist, how the regional competence for landslides is perhaps particularly effective in promoting involvement and communication, and how pressures are pushing for change in different direction. It is also interesting to consider how the perceptions and experiences of the two researchers may be shaping how the profiles have been filled out.

2219

3. The governance of river flooding in Austria and the UK from a regional perspective: Our third example (Fig. 5) keeps the form of hazard constant (river flooding) but changes the national context, with profiles filled out by two hazard researchers for Austria and the UK. Here some quite striking differences emerge. In Austria there is a strong role for regional governance, reflecting the wider structuring of the political system, whereas in the UK the regional level has always been weaker and has been further denuded by the removal of regional bodies by the current administration. There is a stronger pattern of multi-stakeholder participation in the UK, reflecting the development of resilience forums and cross-agency working, and between the two countries there is a big contrast in insurance arrangements. In the UK there is a strongly marketised system with big differentials in insurance costs and consequences for affordability, in Austria (for households at least) a socialised system remains in place in which flooding is a shared risk. Commonalities include both countries seeing moves towards more responsibility being given to those at risk to protect themselves and clear pressures on the availability of resources for flood risk governance.

6 Conclusions

Like other forms of governance, the governance of risks from natural hazards is evolving and dynamic and there is variation in the extent to which key characteristics of 'new governance' have permeated risk management strategies in different European nation states and regions. The risk governance characterisation framework presented and discussed in this paper enables a simple, qualitative representation and evaluation of key characteristics of natural hazard governance to be produced, that can be applied in a flexible way to a variety of forms of hazard and governance setting. We have experimented with various ways of utilising the profiling tool and provided three examples to demonstrate the forms of comparison and contrast that can be achieved. Across these three examples we can immediately see the extent to which governance arrangements

2220

in just a few European settings vary between forms of hazard and between political context, sometimes strikingly so. This reinforces the need to guard against generalisations about risk governance patterns and trends in Europe and to develop a more nuanced and differentiated account of how natural hazards are being governed and the past and future dynamics involved.

The profiling tool is intended to be flexible in its application and we have only outlined a few ways in which it potentially could be used. Other possibilities included its integration into expert workshop settings where representatives of different agencies or disciplines could separately produce profiles for the same hazard and compare and discuss the different or shared views and perspectives that this reveals. Another possibility could be to change the instruction from one that asks for a representation of how the current situation is seen to be, to one in which there is a representation of how governance arrangements *ought* to be. This then shifts the profiling from a descriptive task to a normative one in which desired objectives could be revealed and compared as a starting point for discussion of strategic objectives for the future. In these and other ways we encourage experimentation by others who see value in the characterisation framework we have developed.

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2223

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2224

Risk Governance Characterisation Template

Hazard: Country/Place:

strong national policy framework	weak national policy framework
strong role for regional institutions	weak role for regional institutions
strong local/municipal role	weak local/municipal role
major responsibility on those at risk to protect themselves	minor responsibility on those at risk to protect themselves
strong culture of multi-stakeholder participation	weak culture of multi-stakeholder participation
high reliance on segmented and marketised insurance	low reliance on segmented and marketised insurance
extensive public risk communication	very little public risk communication
good balance between governance tasks and available resources	imbalance between governance tasks and available resources

Fig. 1. Risk governance characterisation template.

2225

strong national policy framework	weak national policy framework
<i>There is a clear, well specified and comprehensive policy framework in place at a national level that is effective in achieving its objectives</i>	<i>There is little in the way of a national policy framework, policies are poorly specified or missing and are highly ineffective in achieving their objectives</i>
strong role for regional institutions	weak role for regional institutions
<i>There are clear roles for regional institutions who play an important part in implementing national policy and/or specifying effective regional policies</i>	<i>There is very little or no role for regional institutions, which may not exist within the political system</i>
strong local/municipal role	weak local/municipal role
<i>Local authorities or municipalities have a clear and important role in implementing national/regional policy and/or in specifying their own local strategies and responses</i>	<i>There is very little role for local authorities or municipalities, and/or what they do is largely ineffective</i>
major responsibility on those at risk to protect themselves	minor responsibility on those at risk to protect themselves
<i>Households, businesses or others who are at risk are largely expected to take action and commit resources to protect themselves from hazards. There is little responsibility for, or expectation of, input or support from government or other organisations</i>	<i>Households, businesses or others who are at risk are not expected to take any significant action to protect themselves from hazards. The government or other organisations primarily have the responsibility to provide protection and minimise risks</i>
strong culture of multi-stakeholder participation	weak culture of multi-stakeholder participation
<i>Many different stakeholders and organisations are involved in collaborative partnership working, they have opportunities to participate and have their inputs to decision-making</i>	<i>There is very little or no collaboration between government and stakeholders. There are very few opportunities for participation and decision-making is closed rather than open</i>
high reliance on segmented and marketised insurance	low reliance on segmented and marketised insurance
<i>Insurance costs for the hazard involved are strongly related to the degree of risk faced by a householder or business. There is a substantial difference in insurance costs between high and low risk locations</i>	<i>Insurance costs for the hazard involved are not at all related to the degree of risk faced by a householder or business. There is no difference in insurance costs between high and low risk locations</i>
extensive public risk communication	very little public risk communication
<i>There is substantial, frequent and effective communication with the public</i>	<i>There is very little, infrequent and ineffective communication with the public</i>
good balance between governance tasks and available resources	imbalance between governance tasks and available resources
<i>Organisations involved in managing the hazard are well resourced and as a consequence are able to undertake their role effectively</i>	<i>Organisations involved in managing the hazard are very poorly resourced and are as a consequence not able to undertake their role effectively</i>

Fig. 2. Guidance on the eight risk governance characteristics captured in the risk governance characterisation template.

2226

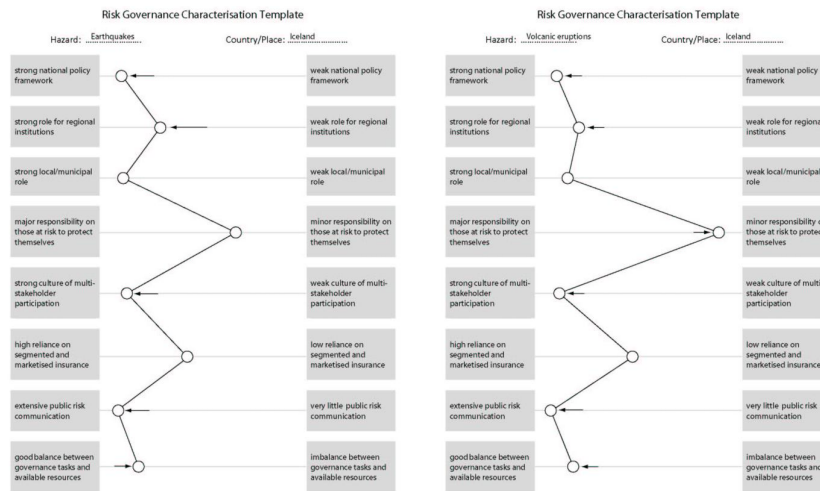


Fig. 3. Risk Governance profiling examples – earthquakes and volcanic eruptions in Iceland.

2227

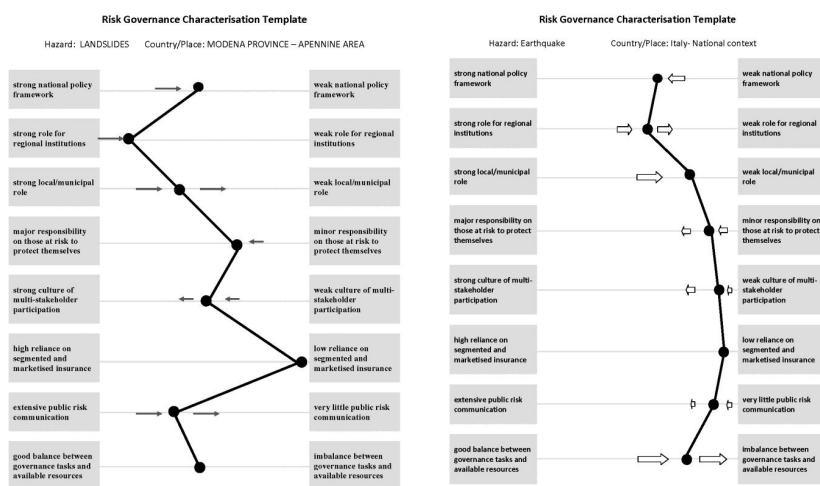


Fig. 4. Risk governance profiling examples – landslides and earthquakes in Italy.

2228

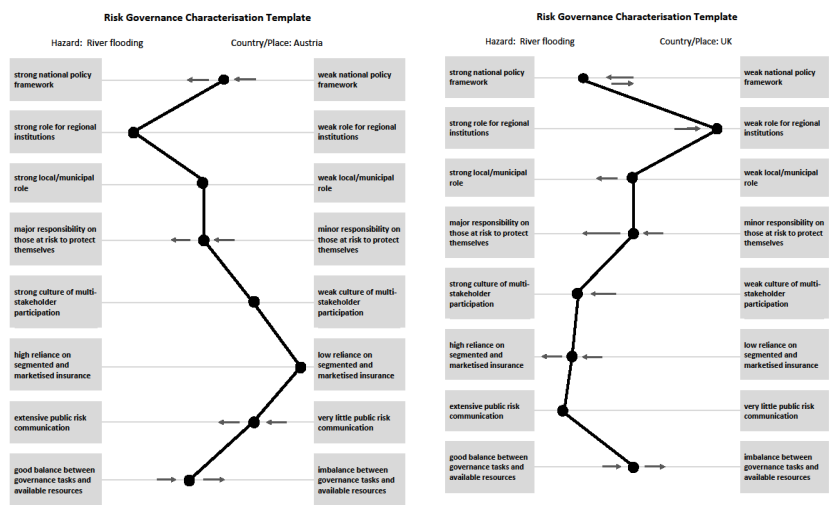


Fig. 5. Risk governance profiling example – river flooding in Austria and the UK.