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Key actor perspectives on stakeholder engagement in Omani Environmental Impact Assessment: an application of Q-Methodology

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Abstract

Stakeholder engagement (SE), particularly with representatives of locally affected communities is integral to Environmental Impact Assessment (EIA) processes, so critical evaluation of SE is necessary across different a range of different socio-political contexts. EIA SE practice in the Sultanate of Oman is examined using Q-methodology: a qualitative-quantitative discourse analysis technique, in order to evaluate key-actor perspectives and policy directions. Four discourses emerge, pertaining to 1) the institutionalisation of SE; 2) business as usual; 3) rights-centred engagement; and 4) decentralisation of EIA institutions. Consensus emerges is shown in support for transparency and formalisation of SE; greater citizen-centred decision-making power; transparency in Government guidelines; and the elimination of developer-led consultation processes. Policy options for reforming EIA policy are discussed, including a code of participation practice and a toolkit of suitable engagement methods.

Key words: Stakeholder engagement, public participation, Environmental Impact Assessment, Q Methodology, Sultanate of Oman

Introduction – citizen stakeholder engagement in Environmental Impact Assessment (EIA)

Stakeholder engagement (hereafter SE), particularly with local citizens affected by development proposals, is frequently construed as an integral aspect of successful decision-making in environmental impact assessment (EIA) processes for major development projects. Nevertheless, amongst the various components of EIA; SE is still "the least established aspect … and treated with scepticism by certain users and practitioners" (Kasemir 2003). The goals of EIA to protect the environment and encourage sustainable economic and social development necessitate a socially legitimate decision-making process for the governance of project proposals in both public and private sectors (Lawrence 1997). One of the key benefits of EIA is the capacity to reduce the likely adverse environmental and social impacts of such proposals during the analysis stages, before they are authorised (Wathern 1988). SE is often construed as an essential element in achieving social control within EIA, thus enhancing the quality and legitimacy of environmental decisions and post-assessment project outcomes (Bond et al. 2004; Beierle 2002). In principle, SE promotes bi-directional dialogue between multiple actors, and has been strongly advocated to the point that "few theorists and practitioners doubt" the benefits claimed from public participation in EIA (see Speller and Ravenscroft 2005); and as such, EIA is promoted as an instrument that both requires and benefits from multiple stakeholder inputs from techno-scientific, policy, legislative and lay expertise.

Though SE is often lauded as a core component of EIA there are potential pitfalls, as Collins and Evans (2002) suggest.: participatory processes replace the 'problem of legitimacy' (i.e. the exclusion of community actor voices in decision-making), with a 'problem of extension' whereby the involvement of many different voices in participatory procedures can be a hindrance to effective decision-making. The participatory elements of EIA shift environmental management decisions away from a stance of 'all we have to do is get the numbers right' to one of, 'all we have to do is make them partners'; and so institutions that instigate engagement processes often fail to reflect on whether or not they provide the best quality information, are inclusive or well organised (Fischhoff 1995). The inclusion of SE does not automatically translate into better quality decisions, as chosen participatory methods may simply be considered too *ad hoc*, unrepresentative of the broader 'public' and hence exclusionary - widening the gap between those that are able (and willing) to use these opportunities to be involved in decision-making and those that are not (Mansbridge 1980; Young 2000), thus missing out on capturing the values of those that are marginalised by policy decisions. These groups have the greatest stake and yet often have the least access to participatory decision-making - due to self-perceived inadequate knowledge or lack of available resources. Participatory processes may also tend to bias the viewpoints of specific interest groups such as activist organisations, NGOs and businesses (Bartlett and Baber 1989); or else co-opt citizens into formalizing top-down, authority-made decisions, providing a veneer of social legitimacy to otherwise technocratic decision-making processes (Allen 1998; Chess and Purcell 1999; Gariepy 1991).

In practice, SE in EIA is often constrained by the upfront cost and lengthened project times that they entail for developers (Sadler 1996). This can lead to poor uptake or incomplete implementation despite the potential to ensure procedural fairness in decision-making and alleviate project opposition from citizens. Opposition is commonly characterised

by legal challenges and civil protest, often resulting in increased project costs and delays. Though participation involves significant upfront costs, it can provide strategic advantages to developers in reducing these project risks (Dryzek 2000; Shepherd and Bowler 1997; Beierle and Cayford 2002; Fiorino 1990).

Though in theory participation provides win-win scenarios for both developers and affected community stakeholder, in practice criticisms about both quantity and quality of SE in EIA have been widely reported not only in the academic literatures, but also from various public and private sector stakeholder groups, EIA practitioners, and lay citizen representatives from local communities where development projects take place (e.g. Gu and Sheate 2005; Ogunlana et al. 2001; Adomokai and Sheate 2004; Wood 1995). Critical empirical evaluation of key actor conceptions of SE in specific EIA contexts is therefore necessary for the development of socially robust environmental management systems. In particular, there is a need to better understand the limitations and barriers to effective multi-actor involvement in EIA in various geographic, socio-political and cultural contexts. The examination of EIA in the Middle East and the Arabian Peninsula is one such emerging area of research (see for example El-Fadl and El-Fadel 2004; Azri et al. 2013), and this paper aims to contribute to this literature by empirically examining the SE practice within the EIA system of the Sultanate of Oman (hereafter Oman). Specifically it aims to explore key stakeholder actor conceptions of SE in Omani EIA, and the emergent social discourses surrounding participation practice through Q-Methodological inquiry: a combined quantitative/qualitative social research method.

Background to EIA in Oman

Unlike a number of other developing countries that have been compelled to apply EIA, even with no national legal support according to aid agencies' requirements (Wood 2003; El-

Fadl and El-Fadel 2004), the Sultanate of Oman has displayed a demonstrable long-term legislative and policy commitment to environmental management since the late 1970s. Table 1 shows the chronological progression of ministerial and legislative changes in Omani environmental management policy. EIA specifically has been a part of Omani environmental policy since 1982, supported by the Law of Conservation of the Environment and Prevention of Pollution (LCEPP), which introduced environmental planning considerations into development projects. This law was later updated in 2001, displaying a specific legal requirement for EIA. Article 16 of RD 114/2001:

> *"The owner of any source or area of work which – according to the basis specified by the Ministry – may constitute an avoidable or treatable risk to the environment, shall submit, prior to the application for the environmental permit, a detailed Environmental Impact Assessment (EIA) study confirming that the benefits of the source or area of work surpass the potential damage to the environment."*

Oman was one of the first countries in the Middle East and North African region to establish a specialised independent Government body responsible solely for environmental issues, and to fully apply EIA. However, implementation in the 1980s and 1990s was hampered by an initial lack of procedural guidelines for EIA, a dearth of relevant domestic expertise in carrying out the assessments, low public awareness of environmental pollution effects, and a political desire for rapid infrastructure construction to aid socio-economic development (El-Fadl and El-Fadel 2004). Due to the lack of domestic EIA experts, environmental management decisions throughout the 1980s and 90s were largely technocratic: when large development projects applied for an environmental permit (formerly known as No Environmental Objection: NEO), mostly proponents or their representatives prepared Environmental Impact Statements (EIS) themselves. Projects applications

documents along with the EIS reports were commonly reviewed and evaluated by Ministry employees. Technical environmental assessment and monitoring tasks were primarily performed by contracted experts from outside the region, along with a small number of Omanis, in accordance with World Bank and the Cooperation Council for the Arab States of the Gulf (GCC) guidelines.

Since 2001, significant progress has been made in addressing sustainable economic, social and environmental development issues within environmental management systems. Omani environmental laws have evolved to cover a wide range of biophysical and environmental impacts. Legislative and regulatory instruments have been established on various environmental protection issues such as desertification, marine and terrestrial wildlife protection, waste water, air pollution, and hazardous and municipal waste control (see Omanuna 2013 for details). In terms of socio-economic and governance issues in environmental decision-making, Oman stands ahead of other Gulf Cooperation States (GCC) in a number of respects. In Oman the "Guidelines for Obtaining Environmental Permits" outlines the roles and duties of the Ministry of Industry and Commerce, different sectoral authorities and local municipalities; outlining a structure for each stakeholder's jurisdiction enabling collaboration in a manner unseen in other GCC states (El-Fadl and El-Fadel 2004). As this study focuses specifically on participation, in Oman specifically the environmental legal framework provides access for public or developer objection to EIA decisions or actions and an associated appeals processes, under Article 5 in Royal Decree RD 114/2001, in contrast to the United Arab Emirates, the Kingdom of Saudi Arabia, Bahrain or Kuwait (though Qatar provides similar provisions under article 14 in Law 30/2002). Also of all the EIA systems in the six aforementioned GCC countries, only Oman legislatively requires public consultations during the EIA study process, though public participation is not mandated during review and evaluation stages (Azri et al. 2013). Though participation is

enshrined in environmental law, the LCEPP itself does not compel the EIA to be public, nor to publicly explain the operations of the EIA process. EIA processes may therefore be subject to *ad hoc* participatory procedures and Omani EIA policy lacks clarity in regulating when participation is required, in what situations or circumstances, how it should be done, or whose responsibility it is to facilitate citizen and stakeholder involvement in decisions.

In practice, communication and consultation between various stakeholders is often facilitated through environmental consultants and developers or their representatives, conducted through meetings with government officers. For locally-affected site communities, consultants first contact local government authorities (known as the Waly office) and hold meetings with Sheikhs and tribe leaders who are often asked by the Waly office to seek opinions and cooperation of the local people with the project. These key community stakeholders act as representatives or proxies in locally affected project locations. Consultants might meet with individuals from the community or get feedback via the Sheikhs and the Waly office. Consultants are then subsequently tasked with addressing public concerns regarding the project design in the EIA study. The Waly office often mediates between the community and the project proponents. However, the current practice of public involvement in the Omani EIA ranges between a one-way information provision about the proposed project from developers to affected, to consultation practices where communities raise their concerns to the Waly and EIA consultants, but lack direct decision making authority. To give a couple of examples from English language-published EIA reports, the Sohar-II Independent Power Project (HMR Environmental Engineering Consultants 2010b) and Barka-III Independent Power Project (HMR Environmental Engineering Consultants 2010a) EIA reports both describe public consultation and disclosure plans, with the former involving two main stages. In both projects, the first stage involves dissemination of project information including environmental, site use, traffic, health and safety impacts, and the construction

schedule and influx management plans delivered through the Wali of Sohar and Liwa, and the Sheikh (Sohar II) and the Wali of Barka, the developer Barka and the Sheikh (Barka III). The second stage involves the discussion of community grievances and resolution of issues through a project developer-recruited Relations Officer whose prime function is to coordinate the various on-site activities with the Wali and the Sheikh at the community level. Together these consultation and disclosure strategies are representative of a decide-announce-defend approach, whereby information provision about project impacts is disclosed to communities (through the associated stakeholder representatives), grievances emerge and must then be resolved in relation to project plans. Such a model is consistent with an information processing or 'decisionist' model of EIA (Bartlett and Kurian 1999), standing in contrast to the growing commitment to pluralist models of environmental governance emerging in North American and European states that construe EIA as a tool to achieve procedural fairness for participants through upstream engagement processes involving partnership decision-making between communities and developers (Lawrence et al. 1997; Hourdequin et al. 2012; Beierle and Koninsky 2000).

In order to understand the dimensions of participation and to inform best practice in SE in Omani EIA, policy-makers and practitioners would benefit from understanding the different positions within the public discourse on EIA practice – including different stakeholder actor conceptions of SE and associated stakeholder roles in EIA. This empirical study aims to analyse these issues surrounding multi-actor SE policy and practice in Omani EIA, by drawing out multiple 'discourses' from different stakeholder groups within Oman through the application of a Q-Methodological social scientific approach.

Background to Q-Methodology

Q-Methodology (hereafter Q-Method) is used to identify and assess subjective perspectives emerging around an issue or topic of public concern. It was first developed by the physicist-turned-psychologist William Stephenson as a means to systematically evaluate subjective social perspectives by rendering them open to statistical analysis in order to extract a series of 'idealised accounts' or 'discourses' emerging from the rank-ordering of a sample of preselected statements, termed a *Q-sort* (Brown 1996). The statements making up a Q-sort are sampled from a larger 'communication concourse' which is collected by the researcher, and designed to be broadly representative of the debates surrounding the topic under consideration. The concourse is usually drawn from qualitative data available on the topic, in the form of individual statements that encapsulate specific ideas, though other media such as images or objects can be substituted for statements where appropriate (see for example Watts and Stenner 2012). Statements making up the Q-sort are not empirical facts, rather, they express specific positions that carry an affective valence (i.e. are not value neutral) and are reflective of subjective reasoning around the topic area.

Analysis of the collected Q-sorts involves statistical procedures (inverse factor analysis – in the sense that one correlates persons instead of tests) and subsequent qualitative analysis of the outputs. Thus it is a "qualiquantological" approach (Stenner and Stainton Rogers 2004), whereby statistical operations produce composite Q-sorts representing collective positions (these are sometimes termed 'idealised accounts' or 'discourses' to use the original terminology of Stephenson 1953 whereby discourses could be defined as shared percpetions of the issue under consideration) which are then reinterpreted qualitatively by the researcher. Q-Method differs from traditional social surveys, referred to as R-method, because the results don't have predictive or explanatory powers over a population based upon predefined demographic characteristics. Instead, they reveal the typologies of perspectives

that prevail in a given situation, rather than purporting to investigate the prevalence of views within a population. In this context, Q-Method's value lies in the capacity to define and delineate key stakeholder viewpoints, values, and positions; explicitly outline areas of consensus and dissensus and thus help to develop a common view toward policy-making (Steelman and Maguire 1999; Baker et al. 2010). As such, it has grown in popularity as a research tool in the environmental social sciences. Specifically a number of Q-studies have emerged covering issues such as: sustainability discourses (Curry et al. 2012), sustainability indicators (Doody et al. 2009), energy project siting (Cotton and Devine-Wright 2011; Ellis et al. 2007; Fisher and Brown 2009; Wolsink 2010), forestry management (Swedeen 2006; Steelman and Maguire 1999), environmental risk (Venables et al. 2009; Cotton 2012), science communication (Cairns 2012; Johnson and Chess 2006), and public participation (Webler et al. 2003; Webler et al. 2001).

Methods

Concourse selection and sampling

The communication concourse in this study is drawn from a mix of primary and secondary sources, to produce what Stainton Rogers (1995) terms a quasi-naturalistic sample. Firstly, statements are drawn from academic and policy literatures pertinent to issues of stakeholder participation, EIA and decision making processes in Oman. Secondly, they are drawn from semi-structured interview materials (n=28, not presented here), representing five stakeholder groups from three geographical regions of Oman. Note that the interview participants did not take part in this Q-method study. Through assessing this combination of primary and secondary data sources 330 statements were identified to present a coherent concourse.

Analysis of the concourse statements using NVIVO qualitative data analysis software produced 18 thematically coded conceptual categories, reduced to 10 through pilot testing and researcher discussion. Sampling of the concourse was then done using an unstructured sampling approach (van Exel and de Graaf 2005), through researcher judgement in concert with pilot testing with original interviewees (not participating in the study). The categories and numbers of statements sampled from each is shown in Table 2. The finished Q-set of 50 statements is intended as microcosm of the larger set (Addams and Proops 2000), ensuring that the chosen statements maintain a balance of key themes from the broader concourse. The Q-set was presented to participants in dual language format (Arabic and English) with the aid of professional translation services.

Participant sampling

The selected participants or P-sample involved recruiting 20 key personnel representing major EIA stakeholder groups including Government Ministry representatives, project developers, EIA consultants and community actors shown in the categories in Table 6. No financial incentive was offered for participation. The P-sample is broadly constituted according to diversity of perspectives on the subject, rather than representative of researcher-imposed and predefined demographic characteristics in the manner of a social survey (R-method). In this case it uses a snowball sampling technique to recruit participants from the key stakeholder groups in Table 3. Participant sample numbers reflect standard procedure of selection between a 2:1 and 3:1 ratio of statements to participants (Webler et al. 2009).

Q-sorting process

Participants were presented with the set of 50 statements and asked to sort the cards under a condition of instruction (Brown 1993), from 'most strongly agree' (+5) to 'most strongly disagree' (-5), sorting the statements into the forced quasi-normal distribution detailed in Table 4. The sorting process is a holistic or gestalt procedure in which all elements are interdependently involved (Addams and Proops 2000). Participants must consider the unity of the topic regardless the variety of statements, thus they consider the complete set of statements and how each statement relates to the rest, and then 'force' the statements into the quasi-normal distribution pattern. Though this forcing encourages respondents to consider the relationships among the statements in a systematic way (Steelman and Maguire 1999), it must be noted however that non-forced distribution patterns have been used with success (Brown 1971). Completed Q-sorts were numbered 1-20 and entered into the PQMethod software, for statistical analysis.

Statistical and qualitative analysis

Statistical analysis of the Q-sorts follows a standard pattern:

1. Calculation of the correlation matrix of the Q sorts;
2. Extraction of significant factors
3. Orthogonal rotation of significant factors

Principal component analysis (PCA) was used, and the factor solution used by-hand rotation where the significant factors are rotated through the calculation of the standard error (SE) of the factor loadings using the formula; $SE=1\sqrt{N}$, where N is the number of statement items in the Q sample. Thus:

$$SE=1\sqrt{50} = 0.141$$

Participant loadings in excess of the coefficient correlation, r = ± 0.365 [2.58(SE)] are significant at $p < 0.01$, and factor loadings exceeding (r) = ± 0.277 [1.96 (SE)] at level of $p < 0.05$ are significant as well (Brown 1980; Watts and Stenner 2005). Based upon these criteria, four significant factors were extracted. The statements, four factors and the loadings are shown in Table 5.

The rotated factors are then reinterpreted in the form of 'discourses' – whereby they are reinterpreted in terms of meaningful relationships between Q-sorts (Webler and Tuler 2006). This is done principally by examining the Z-scores of statements (measuring how far a statement lies from the middle of a distribution) as a measure of salience to the discourse, and then generating a qualitative, theoretically grounded description of the factor in a narrative form.

Findings – emergent discourses

Each of the emergent discourses is given a thematic label or 'handle', and narrative description of the emergent themes, with reference to statements shown in table 5 (presented as s#). The four themes are:

A) Trust in institutions and the formalisation of SE procedures

B) Supporting business as usual

C) Environmental rights and sustainable development

D) Decentralised decision-making and upstream engagement

Discourse A: Trust in institutions and the formalisation of SE procedures

This discourse can be summarised as a call for the institutionalisation and formalisation of SE practices within EIA systems, motivated by a desire to establish public acceptability and trust in developer institutions and Government ministries, and hence a socially robust decision-making processes (Nowotny 2003). The desire for the formalisation of participation practices within EIA (s6) is founded within a positive normative evaluation of SE; in particular a rejection of strategic motivations for limiting participation practice on the grounds of a modernisation agenda (see for example Wolsink 2003) that emphasises rapid economic development at the expense of procedural justice (Renn et al. 1996) (s41), and concerns over project failure at the stage of community benefits/community compensation at later stages in the EIA process (s17). The issue of the *formalisation* of SE practices is key to understanding this discourse – as it strongly emphasises the problems associated with ad hoc developer-led participation (s2) and internal consultation measures which only canvass perspectives within Government departments (s42). In addition, the discourse highlights and aims to find solutions to specific weaknesses that can be resolved within the current system; notably regarding the provision of sufficient information to affected stakeholders in a timely manner (s12), a lack of clarity in the guidelines for standardised EIA practices (including SE within the process) (s7) and strengthening of the legitimacy of EIA by independent and external selection procedures (s27). Information provision is not however limited to pre-application stages, as this discourse in particular, emphasises the rights of stakeholders to have access to EIA reports upon completion (s14).

Discourse B: Supporting business as usual

The theme of this discourse concerns a positive, pro-participation stance that, for the most part, supports the status quo of current SE practice in Omani EIA, and hence a 'business as usual' position. Of interest are two similar, though subtly different statements (s31 and s32): the former emphasising SE as a form of information provision and consideration of relatively limited citizen stakeholder feedback to proposals (what could be considered as 'informing' using the ladder terminology of Arnstein 1969); whereas the latter emphasises direct decisional influence of stakeholder actors through consultation mechanisms (closer to a 'partnership' approach). The strong +5 emphasis on both of these statements indicates a desire both for broad spectrum participation methods that encompass both information provision, assessment of feedback and decision-making opportunities for stakeholder actors, though it must be noted that some confusion emerging from the similarity of these statements may account for the high ranking of both. Though broad spectrum engagement aspects are desired, it appears that proponents of this discourse believe that many positive benefits of participation are already experienced within the current system, and that existing EIA practice is more than simply a bureaucratic procedure (s23). This positive assessment of current EIA practice is principally grounded in economic and business-related justifications. In particular this discourse rejects a number of significant criticisms of current SE practices, such as possible concerns over environmental destruction from big business in the wake of inadequate participation (s43), or, like Discourse A, concerns over the suppression of longer term economic development from project failure (s41), or that participation is limited by concern over future community compensation claims (s17); though distinct to Discourse B is a rejection of the stance that the positive economic benefits of project developments are being over-emphasised (s45). The business and economy-related focus of this discourse is tempered

by a reflexive stance on the influencing factors of participation, particularly the role of cultural differences in influencing responses to project-related EIA issues (s38). However, the business as usual approach to participation is reinforced by the scepticism shown towards participation in EIA as a means to motivate proenvironmental behaviours (s46), in contrast to a number of academic theorists which have emphasised the possibilities for public deliberation on environmental issues as a means to foster social learning about environmental issues (Orman 2013; Schusler et al. 2003) and thus foster pro-environmental behaviours and practices (Wynne 1993; Cass and Walker 2009),

Discourse C: Environmental rights and sustainable development

Like discourse A, this discourse emphasises the value of participation in achieving public acceptability and developer trust from multiple stakeholder actors (s6). However, the emphasis in this discourse is less upon the formalisation of procedures and practices, and more upon the environmental rights of stakeholders within a sustainable development framework. Like discourse B there is a positive emphasis on current SE practices, and a sense that the processes are not solely bureaucratic (s23), and can have positive benefits even when stakeholder issues are not directly considered in decision-making (s29*). However in this discourse, the favourable view of SE is not specifically focussed on business and economy-related justifications, and there is strong recognition that investment opportunities for local communities from project development will influence engagement processes (s33). Rather, the positive view of SE is strongly related to recognition of movement towards a sustainable development framework implemented from the top-down by Government (s20), and trust that the current institutional practices of SE are transparent and fair (s5). The positive emphasis on current SE practices through a focus on sustainable development also has a 'bottom-up'

component, as there is specific recognition of traditional rights of the community, such as protection of rights to fishing and grassing areas, protected and supported through engagement practices in EIA (s19). In this respect, the discourse is indicative of a sustainable development-focussed environmental justice perspective that emphasises local and traditionally grounded environmental rights, mirroring articles such as Rio Principle 22 protecting indigenous cultural rights and knowledge, and also a more top-down policy-led approach exemplified in Aarhus Convention (UNECE 1998) principles - protecting access to information, participation and environmental justice. This latter aspect is further supported by a sense that SE in EIA has positive legislative and regulatory impacts, as well as strategic benefits for reducing stakeholder conflicts (s48*).

Discourse D: Decentralised decision-making and upstream engagement

Unlike Discourse C which emphasises a Government-led sustainable development framework for the implementation of SE, discourse D focuses specifically upon decentralisation as a means to facilitate stakeholder participation in EIA (s10), thus indicative of the 'deliberative turn' concept, where proponents of the discourse emphasise opportunities for direct citizen stakeholder involvement in decisions at the local level. This is further emphasised by a sense that EIA is more than simply a bureaucratic procedure (echoing both discourses B and C). This discourse also emphasises the temporal scales of decision-making, with a specific concern for upstream engagement, i.e. SE at early stages of project development prior to the implementation of 'siting' of projects. This upstream engagement ethos is supported by a call for both early involvement and access to information (s13) particularly on budget, locations and alternatives (s12); greater coordination of planning,

investment and regulatory authorities (s40); and like A, the formalisation of EIA SE procedures, reducing the ad hoc nature of participation (s2) and improving current guidelines and practices of SE in EIA (s7). What is also clear is that there is demonstrable satisfaction with current EIA arrangements on these terms, as it appears that SE in EIA is not deemed to be implemented too late in the project stages to effectively incorporate citizen stakeholder values (s8*).

Discussion

Evaluating the discourses involves discussion of areas of consensus and statements that distinguish between discourses. Consensus is most strongly shown where there is agreement (all positive or all negative loadings for a statement) across all four factors. Distinguishing statements are revealed by calculating the *difference score* - the magnitude of difference between a statement's score on any two factors required for it to be statistically significant. When a statement's score on two factors exceeds the difference score, it is classified as a distinguishing statement, and receives a significantly different score from each of the other factors and is treated differently by participants (Brown 1993). A distinguishing statement for a factor is therefore a statement whose score on that factor is statistically significantly different from its score on any other factor (van Exel and de Graaf 2005; Watts and Stenner 2012). The statements that are significant at $p < 0.05$ are highlighted with asterisk (*) in Table 5 and in the main body text. None were significant at $p < 0.01$. Though statistical criteria can be used to show consensus from distinguishing statements, the researcher should not only consider statistical criteria, but also use their own judgment in the interpretation (see for example du Plessis et al. 2006); as such, statements which show consensus between two

factors and distinction with the other two are also of interest in differentiating discourses and have been included as well (for example s18).

1. Areas of consensus

A number of areas of consensus emerged across the discourses, and together these can be interpreted as a consistent narrative that emphasises the procedural fairness elements of SE in Omani EIA. In particular, consensus emerged across the discourses around the issue of clarity and consistency in decision-making processes, in particular the movement away from ad hoc developer and ministry-defined practices (s2) towards a system that demonstrates clarity across the life-cycle of projects: namely the enhancement of social acceptance through early access to project information (s13); the upholding of traditional rights (s19); the enhancement of trust in government and developer organisations through stakeholder involvement (s6) and input into decision-making (s32); and once the process is complete, providing public access to post-assessment reports (s14). Consensus on these issues across the lifecycle of the assessment process is illustrative of cross-stakeholder support for standardisation of SE practices from a procedural fairness perspective – there is agreement that socially robust SE must involve clearer communication of project goals, decision-stakes and the involvement of representative parties. This finding show similarities with other studies of procedural fairness in environmental project siting (covering issues such as access to information, standardisation and communication of SE practices, and developer transparency, honesty, accountability and openness) which illustrate how stakeholders' perception of procedural fairness enhance the legitimacy of project outcomes (Gross 2007; Wolsink and Devilee 2009; Davy 1996), and this is a key consideration for future EIA policy in Oman and where EIA is incorporated into environmental management systems in other regions.

2. Distinguishing between factors

Though consensus emerged on the procedural fairness aspects, a number of conflicting positions emerged around the more specific details of implementation of SE in an Omani EIA policy context, defined through statements that distinguish between factors. Particular areas of dissesnsus concerned broader policy and governance issues surrounding SE in EIA, the temporal scales of SE and decision-making for projects, the efficacy of consultation and open meetings as engagement tools, and the role of different organisational bodies in representing citizen-stakeholder interests.

Firstly a statement (s48*) distinguished between A, B and C when compared to D, on the issue of the influence of SE in EIA as a means to improve environmental laws and regulations and reduce stakeholder conflicts . Though D recognises the importance of current arrangements in upstream engagement practice, it does not recognise the broader systemic value of SE in Omani environmental governance processes, thus representing a counter position to the other discourses' acceptance of the value of SE to legal and regulatory frameworks. This is related to another conflict over the temporal scales of decision-making in EIA, as advocates of A, stood in opposition to advocates of C and (particularly) D, in recognising that EIA occurs too late in the project development process to include the various stakeholder actors' voices and opinions (s8*). This shows an internal conflict within discourse D over a desire for an upstream engagement approach, (which is advocated by D, but also believed to already exist, s26*), and also conflict between C and D compared to A, as the latter seeks earlier implementation of EIA processes on procedural fairness grounds, whereas the former two do not. It is interesting that the rights-based approach and the upstream engagement approach both appear satisfied with the temporal scales of engagement under current arrangements (with the latter unconvinced that it has broader influence on

environmental governance), whilst the formalisation approach does not, as this indicates different levels of satisfaction with current EIA policy amongst a range of stakeholder actors, leading us to conclude it would behove the Ministry of Environment and Climate Affairs (MECA) and EIA consultant organisations to clarify the terms of when EIA is needed, implemented and who is involved at the different stages of project development in order to provide a resolution.

There was specific disagreement between discourse A and C on the types of engagement practices that are implemented. Though not of major concern, 'open meetings' (referring in this context to what are often termed 'town hall meetings') came under scrutiny (s11*), with C construing them as stimulating public opposition in contrast to all other perspectives (particularly A). Open meetings are controversial practices, as they give open access to a range of stakeholders based upon the assumption that 'getting people round the table' is enough to stimulate consensus (see for example Hildyard et al. 2001). Similarly in terms of satisfaction with existing methods, the practice of 'consultation' (involving limited stakeholder feedback on project proposals but no decisional influence) came under scrutiny in discourses B and C, with the former emphasising the importance of considering feedback in study recommendations and the latter dismissing it (s29*); and discourse D is distinct from from A.B and C by expressing satisfaction in the current raft of consultation measures within EIA, in comparison to calls for more interactive participatory-deliberative measures expressed in the other discourses (s26*). Moreover, as the rights-based discourse C shows, there is some recognition that certain forms of engagement actually have the potential to stimulate opposition, particularly when decisions are perceived as being made prior to the engagement process beginning (see for example Gariepy 1991), or else not providing opportunities for input to decision-making. Care must be taken by developers in choosing firstly the right framing of engagement practices (whether informing, consulting, creating

partnership decision-making), and hence establishing trust in the process and organisations involved; and also care in selecting the right tools to engage with multiple stakeholder interests in order to avoid exacerbating conflict and project opposition through unstructured and unfacilitated dialogue processes (like open meetings).

There was disagreement not only on methods but also the organisations implementing EIA and related SE procedures. Both the reformist discourse A and rights based discourse C emphasise the need for independently selected EIA entities, selected by unbiased panels of experts (s27), in contrast to B. This shows that advocates of B support business as usual in terms of maintaining (their current) control of EIA process implementation, and satisfaction with current arrangements for ensuring community interests are incorporated into decision-making (s15*). However, when considering implementing organisations for SE, the MECA was divisive, when framed as a proxy representative of citizen-stakeholder interests (with A and B critical, versus C and D in support). Both of these points of disagreement are crucial considerations in the reformation of EIA policy, and should be considered as policy options when trying to establish a legitimate and procedurally fair process. Discourse B favours neither independent organisations, nor the Ministry when it comes to implementing SE in EIA, and so there is a clear distinction between supporters of the current system (B) and those seeking to change it (A and D).

Conclusions and policy recommendations

Q-Methodology provides an inductive, yet systematic methodology to define and delineate stakeholder positions within controversial environmental management debates, allowing the researcher to identify important criteria, explicitly outline areas of consensus and conflict and thus facilitating the development of a common view toward policy-making

(Steelman and Maguire 1999). This study of emergent discourses around stakeholder engagement (SE) in relation to EIA processes in Oman provides opportunities to illustrate convergent and divergent perspectives on the future of engagement practice within EIA policy. Care is needed, to avoid the assumption that the resultant discourses correspond to specific stakeholder groups as these findings show, the idealised perspectives presented in the discourses are shared to varying degrees across the boundaries of established social networks (see Venables et al. 2009), with loadings across multiple factors shown within the defined stakeholder groups in this study (see Table 6).

The emergent discourses reveal both areas of consensus and dissensus across a range of diverse positions in relation to Omani EIA, which can be instrumental in defining future policy directions. Of specific note in this regard is the dominance of reformist positions across the discourses shown most strongly by advocates of discourse A, but also emphasised by those that seek to maintain the status quo for developers and Ministry departments (discourse B). Areas of consensus emerge in relation the standardisation and institutionalisation of formal SE procedures, thus broadening engagement beyond developer-led SE management and internal Ministry consultation, clarifying the terms in which participation is required and presenting clearer information to a range of stakeholder groups both before and after the EIA process.

Nationally, Oman has demonstrated a firm commitment to EIA and has enshrined public participation within its legal framework for environmental management decisions in contrast to most other Gulf Cooperation States (GCC), with the exception of Qatar (Azri et al. 2013). Oman thus avoids many of the pitfalls of technocratic, expert-driven and non-transparent decision-making as shown in other emerging EIA practising countries (see for example Hostovsky et al. 2010). Nevertheless, dissatisfaction with current SE arrangements remains because EIAs are frequently not made public, and *ad hoc* developer led consultation

leads to practices of placation and information provision dressed up as consultation and effective engagement with stakeholders (in particular locally affected site communities). As such, two potential policy fixes can be recommended: the first is the preparation of a code of participation practice, and second is the mandating of toolkit of engagement methods and practices.

A code of practice would outline official SE guidelines and legal obligations for developers in completing the EIA process. Such guidelines should differentiate between one-way communication practices for informing communities of project plans and two way deliberative dialogue in order to reduce confusion and improve stakeholder satisfaction with engagement methods. It is important to also provide guidance to developers and affected community stakeholders about the stage of project development where engagement measures are implemented - mandating early stage consultation (and thus satisfying proponents of discourses A, B and C), and compelling developers to publicise such practices and eventual assessment outcomes. A code of practice has the potential to alleviate project costs (by reducing risks of consultation failure leading to community objections and delayed implementation) thus satisfying proponents of discourse B, it also has the potential to satisfy proponents of discourse D which desire upstream engagement practices through early consultation and involvement (though admittedly they are somewhat satisfied with current arrangements in this regard). A toolkit of standardised engagement methods would therefore prove useful. The *ad hoc* nature of current engagement practices implies a paucity of experience and skills in designing and implementing deliberative dialogue in Omani EIA. Deliberative tools are likely needed to facilitate practitioner engagement with heterogeneous Omani publics, thus it is necessary to provide developers not only with rules about who and when to engage, but also certainty and clarity in *how* to engage citizen-stakeholders in meaningful two-way dialogue. With the increasing institutionalisation of SE within

environmental decision-making, a number of such toolkit approaches have emerged in both academic literatures, from local government departments and dialogue practitioner organisations (some examples include Elliott et al. 2005; Lotov 2003; Rockloff and Lockie 2004; Wates 2000); it would behove Ministry of Environment and Climate Affairs (MECA) to critically examine these approaches and construct an Omani context-sensitive toolkit approach for dissemination with project developers.

Research evaluating specific SE processes in Omani EIA is also needed, and best practice needs to be identified and applied across the GCC states. Firstly, it is necessary to identify whether participatory processes are demographically representative of host communities, whether outcomes of decision-processes are reflective of stakeholder interests identified in the SE process, and whether social learning about engagement practice is occurring amongst project developers and affected stakeholder parties. Secondly, it is necessary to compare the performance of Omani participatory decision-making practice enshrined in law, with other GCC countries that do not mandate participation in EIA processes, in order to benchmark the procedural fairness of different environmental management systems in the region. The findings of this study thus present a call both for the consideration of new participatory practices, tools and institutional mechanisms to ensure the satisfaction of multiple stakeholder parties' interests in Omani EIA, and present grounding for future comparative work on participatory practice in environmental management systems, particularly within GCC states.

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Table 1. Brief chronology of Omani environmental Ministries and legislation

Year	Event
1979	'Council for the Conservation of the Environment and Prevention of Pollution' (CCEPP) established
1982	Law on Conservation of the Environment and Prevention of Pollution (LCEPP): RD 10/1982 Implementation of EIA in environmental management systems
1984	CCEPP superseded by Ministry of Environment
1991	Ministry of Environment (including CCEPP) and Ministry of Regional Municipalities merged into 'Ministry of Regional Municipalities and Environment' (MRME)
2001	MRME merged with Ministry of Water Resources to form Ministry of Regional Municipalities, Environment and Water Resources (MRMEWR) The Law on Conservation of the Environment and Prevention of Pollution (LCEPP) RD 114/2001 (cancels RD 10.1982) The Issuance of Environmental Approvals and Final Environmental Permits: MD 187/2001
2007	MRMEWR divided and Ministry of Environment and Climate Affairs (MECA) established by Royal Decree (90/2007). MECA currently responsible for environmental affairs within the Sultanate

Table 2 Categories of statements following qualitative analysis of the concourse

No.	Categories emerged from the concourse of statements	Statements
1	Role of regulations	4
2	Communication practices	5
3	Obstacles to effective participation	8
4	Access to information	3
5	Decision-making: fairness and competence	3
6	Right to participate in policy-making	6
7	Future improvements to participation in EIA	5
8	Capacity building and awareness	6
9	Factors encouraging participation	5
10	Significance of participation, stakeholder responsibility and facilitation	5

Table 3 Stakeholder groups represented in Q-sorts and numbers of participants loading on factors

Stakeholder group	Description	Participants loading per group			
		A	B	C	D
Government Authorities	• Director, marine environment reservation department, MECA • Director General of Climate Affairs, MECA • Environmental Advisor, MECA • Director, Department of Design in Directorate of Ports, Ministry of Transportation and Communications • Director General of Industry, Ministry of Commerce & Industry • Director General of Planning, Follow-Up & Information. Ministry of Tourism • Director General of Wilayat Affairs. Dhofar Province	3	3	1	0
Local Community	• Citizen-stakeholder from Aluthaiba, Muscat • Citizen-stakeholder from Hillat Alsheikh, Liwa • Citizen-stakeholder from Alzahiya, Liwa • Citizen-stakeholder from Albatinah, Muscat • Citizen-stakeholder from Bausher, Muscat • Shura (consultation) member, Representative from the city of Sohar. Member of Majlis A'shura,	4	0	0	1
Experts and Practitioners	• Head, Road Department, RENARDET Consulting Engineers • EIA Expert, Georesources Consultants • EIA Practitioner, Directions Consultants	1	2	1	0
Development Proponents	• Director, Health Safety and Environment. Sohar Port company • Expert from Salalah Methanol Company • Director General of Raysut Industrial Area, Salalah	2	0	0	1
Civil Society Organisations	• Director, Centre for Environmental Studies, SQU. Environment Society of Oman, ESO	1	0	0	0

Table 4 Pattern of Q-sorting into forced quasi-normal structure

Valence	-5	-4	-3	-2	-1	0	+1	+2	+3	+4	+5
Number of statements in column	2	3	5	5	6	8	6	5	5	3	2

Table 5 Idealised Q sorts and factor loadings

No.	Statement	Factor / discourse			
		A	B	C	D
1	Stakeholder participation processes in EIA should be legitimated and be implemented systematically according to a specific code of practice.	+1	+1	-4	-2
2	Participation in EIA study should be practised on ad hoc basis, as defined by the developer and the concerned ministry.	-5	-3	-2	-5
3	The current EIA guidelines and practises do not capture the social and cultural values of the community because of limited participation.	+2	-1	-3	+2
4	The best participation practise to capture a community's viewpoints in EIA is through stakeholder meetings in the Walys' offices.	-3	-2	+1	-3
5	The current communication process for stakeholders' involvement in EIA lack transparency and fairness.	+1	-2	-4	+1
6	Stakeholders' involvement in EIA enhances the public acceptability of the project and increases their trust in the developer and government decisions.	+5	+2	+5	+2
7	The current guidelines and practices of EIA are clear enough and deemed adequate to various parties of stakeholders.	-5	0	0	-4
8	*The EIA process often starts too late in the project stages to include the participation of various stakeholders.	+3	0	-3	-5
9	The EIA process should include those ministries that have social agendas, to enhance wider stakeholder participation.	+1	0	0	-3
10	Decentralisation of government administration and governance might facilitate stakeholder participation in EIA.	-1	-1	+1	+5
11	*Open meetings of various stakeholders about projects complicate the matter and stimulate public opposition to projects.	-3	-1	+2	-1
12	Sufficient information about the project including budget, location alternatives and proposed area must be provided for discussion in the EIA process.	+5	+3	0	+4
13	Community involvement and access to information from the beginning enhance the social acceptance of the project.	+3	+3	+3	+5
14	Once it is done, stakeholders have the right to look at the final report of the EIA study.	+4	+3	+3	+1
15	*Due to limited participation in EIA, it is rare for the interests of a local community to be taken into consideration in the decision-making process.	0	-3	+1	0
16	The participation of the communities in EIA through their traditional or formal representatives is not enough.	+3	-1	0	0
17	Participation of local communities in the EIA process can create problems with regards to compensation provision later, and hence it is limited.	-4	-4	0	-1
18	The Ministry of Environment and Climate Affairs (MECA) is the most qualified stakeholder to know what benefits or harms people, so they can act on behalf of the community.	-2	-2	+3	+3
19	The traditional rights of the community, such as in fishing and grassing areas, need to be supported and addressed through their engagement in the EIA process.	+4	+1	+4	+3
20	The Government's overall attitude towards sustainable development, via the current EIA process, is encouraging wider stakeholders' participation.	-1	+4	+5	-1
21	*Local people provide the main source of information about their locality, so their participation in EIA is essential, but not as sole decision-makers.	-2	+1	+1	+1
22	Local communities should be the first to be consulted when a new project is coming to their area, especially in project location selection.	+2	0	0	0
23	EIA is just seen as a bureaucratic procedure and as a means to obtain the necessary permits, that's why participation is limited	0	-5	-5	-4
24	The lack of mandatory regulations on participation in the EIA process often leads to biased consultation, weaknesses in evaluation and unrealistic recommendations.	+1	0	+2	+4
25	Civil society organisations and NGOs should be given a role in the EIA on behalf of (ignorant) local and remote communities.	0	0	-1	-2
26	*For better stakeholder participation in EIA, a more interactive and	+2	+1	+2	-3

Table 6 Factor matrix indicating participant loadings on each factor

Participant stakeholder group	Factor			
	A	B	C	D
Civil society organisations	**0.7490***	0.0500	0.0507	0.1552
EIA experts and Practitioners	0.1311	**0.6347***	-0.0548	-0.0227
EIA experts and Practitioners	**0.5684***	**0.3733**	0.0595	-0.2344
EIA experts and Practitioners	0.4324	**0.5963***	-0.0532	0.1828
EIA experts and Practitioners	0.2387	0.2970	**0.6306***	0.2782
Government Authorities	**0.5389***	0.2064	**-0.4915**	0.2168
Government Authorities	0.0396	**0.6852***	0.0003	0.0418
Government Authorities	0.0742	**0.6366***	**0.5155**	-0.1584
Government Authorities	0.1219	0.0068	**0.6872***	0.1063
Government Authorities	0.0010	**0.6374***	0.2731	**0.3494**
Government Authorities	**0.6082***	0.1132	0.3280	0.1428
Government Authorities	**0.4463***	0.2662	-0.0434	0.1574
Local Community	**0.3975**	0.2337	0.0207	**-0.3465**
Local Community	**0.7516***	0.1042	-0.1069	0.1127
Local Community	**0.6669***	-0.3087	-0.0268	-0.1151
Local Community	**0.5373***	0.3067	**-0.4761**	0.1511
Local Community	0.0350	0.1779	0.1139	**0.7796***
Project proponents	**0.6496***	0.2579	0.2114	-0.2500
Project proponents	**0.5644**	0.0314	0.0869	**0.5793***
Project proponents:	**0.6982***	0.1086	0.2115	0.0050
Percentage of explained variance	24%	14%	10%	8%

N.B. Those marked with * are defining sorts for the factor