SIXTH FRAMEWORK

**Project N° : 036992**

SPICOSA

**ACRONYM** : **S**cience **P**olicy **I**nterface for **Co**astal **S**ystems **A**ssessment

# REPORT

## GUIDANCE FOR IDENTIFYING THE POLICY ISSUE

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*Purpose: This discussion document was originally produced as part of WP3 (System Design) to assist SSAs within the SPICOSA project in the identification of the Policy Issue. It should be read and used in conjunction with the SPICOSA stakeholder-policy mapping users' manual (Vanderlinden et al., 2011[1]).*

[1] Vanderlinden, J-P., Stojanovic, T., Schmuëli, D., Bremer, S., Kostrzewa, C. and McFadden, L. (with others) (2011) The SPICOSA Stakeholder-Policy Mapping Users' Manual, Spicosa Project Report, Guyancourt: Paris, Université de Versailles-Saint-Quentin-en-Yvelines.

# 1. An introduction

One of the initial stages of the SAF process is to focus on a particular problem or 'Issue' within the coastal zone that will have consequences for the provision of ecosystem goods and services. The SPICOSA glossary defines the Policy Issue as a coastal zone problem that initiates a system appraisal framework. In the SPICOSA SAF it is an ecosystem dysfunction that is being investigated. In other circumstances, those managing the coastal environment might chose to adopt an approach that centres on the societies and/or cultures present and therefore be more socio- or economic centric rather than eco-centric.

Throughout the first iteration of SPICOSA SAF process the selection of the Policy Issue and also the process by which this is undertaken has been identified as one of the key influencing processes. It has been observed, for example, that the selection of the PI has affected the interest and willingness of stakeholders to be further involved, the ability to incorporate the different ESE components into the simulation model, opportunities for stakeholder to engage in social learning and potentially the acceptance of the results. It can therefore be considered to be one of the fundamental steps within the application of the SAF and it is important that the selection of the PI is a process which is given time, resourcing and due consideration.

There are a number of SPICOSA tasks that feed into process of identifying the issue; these include the selection and engagement of stakeholders, Institutional Mapping (McFadden et al., 2010) and Stakeholder mapping (Vanderlinden *et al.,* 2011a). Each of these have a vital role to play in ensuring that the process of Policy Issue selection is comprehensive and legitimate and in creating a constructive environment for Policy Issues to be deliberated and prioritised by stakeholders. Reaching agreement on the Policy Issue and later the associated scenarios, indicators, descriptors and criteria of that issue and the process by which agreement is achieved are fundamental to the later stages of the SAF. The aim of this document is to explore the process of issue identification and provide examples from study sites about how this has been achieved. This document is compliments, and is complimented by, the Stakeholder-Issue Mapping users' manual document and it is important that both are read in conjunction.

# 2. The process of issue resolution

Integrated Coastal Zone Management (ICZM) is itself a process that recognises that there are multiple issues that need to be managed in a coherent and consistent manner. However, despite the multitude of issues and stakeholders for any given coastal area there will be key concerns which are particularly urgent to those involved, and need to be prioritised for management and resolution.

Those applying the SAF are likely to be already aware of actual or potential ecological dysfunctions and their possible causes by human activities at their location of interest. Thus, their knowledge of impacts provides one starting point for the process of identifying a Policy Issue for SAF users. However, the main process of Issue Resolution should be the remit of the coastal stakeholders. The priority Policy Issues should be identified in conjunction with those organisations that have legal and management responsibility and those who are affected by as well as those who cause the policy issue in the coastal area. Therefore, it is clear that best practices of identifying the issue need to have stakeholder engagement and deliberation at the centre of the process.

As discussed within the SPICOSA Stakeholder-Issue Mapping users' manual (Vanderlinden *et al.,* 2011a) all policy issues should be thoroughly and systematically identified both in terms of their varying relevance and importance to the different stakeholders and to ICZM. This works towards

achieving process legitimacy (i.e. all stakeholder concerns are taken into account), process efficiency (i.e. leaving out a key issue may endanger the process later on) and transparency (i.e. no policy issue is hidden). It is also important for any process of issue resolution to realise the fact that there are not only differences in the relevance and importance that different stakeholders attach to different policy issues. In addition, different perceptions of, and around, any single policy issue will likely exist within a stakeholder group. It is useful to explore these perceptions (i.e. different worldviews) as they provide the context determining why a particular issue is deemed relevant and in doing so, also determine what should or should not be included be explored in the context of the choice of issue.

### *2.1 Exploring different perceptions of a policy issue: using CATWOE*

Whether we realise it or do not, we view raw data via a particular mental framework, or world-view. Within a process of issue resolution we must accept the existence of multiple perceptions of any issue. From exploring these perceptions we can gain insights into the nature of the policy issue and the choices to be faced in the process of managing this coastal zone problem.

One way of exploring these ideas is through the use of a CATWOE model. It shows the link between stakeholder perceptions and the change of state of the system deemed important by those stakeholders (transformation) and in turn the issue(s) which are considered relevant to be resolved. CATWOE (Figure 1) is a mnemonic of six crucial characteristics that help provide an understanding of the human actions relevant to the policy issue (Checkland, 1981). The core of CATWOE is focused on understanding the different worldviews which make processes changes the state of a system relevant to a particular stakeholder or stakeholder group. Understanding these differences within a SAF implementation will provide insights into the nature of the choice (e.g. incorporating a different perspectives may broaden the anticipated losers or beneficiaries from the management process) and may particularly provide insights about the appropriate course of management action to adopt within a decision-making process (e.g. are there particular management actions that will address the Policy Issue from a range of perspectives, thereby increasing the win-win nature of decision-making?).

| | |
|---|---|
| C = | Customers: the victims or beneficiaries of T |
| A = | Actors: those who would do T |
| T = | Transformational process: the conversion of input to output |
| W = | Weltanschauung : the worldview that provides a (meaningful) context for T |
| O = | Owner(s): those who could stop T |
| E = | Environmental Constraints: elements outside the system which are accepted as givens |

Figure 1: The CATWOE mnemonic

In the CATWOE paradigm, stakeholders may be considered as:

- **Customers**: those who are on the receiving end of whatever it is that the system does,
- **Actors**: those who would actually carry out the activities envisaged in the system being defined,
- **Owners**: those who have sufficient power over the system to stop it existing.

The ‘E’ or Environment in CATWOE is the elements outside of the system which are accepted as givens. These may include the trends, events and demands of the political, legal, economic, social, technological and natural environments which provide the context for the situation and specific problem arena.

In this approach the system is defined in terms of *a series* of **Transformation** processes and customers, actors and owners are defined for each transformation. A transformational process is something that changes the state of system; it can be one or more of the following:

- A physical movement of matter or energy
- A biogeochemical process
- A flow of information
- A change in the mental or emotional state of a person

Identifying T (Transformation process) can cause difficulties. It is important not to confuse the input which gets transformed into output, with the resources or actions that are needed to carry out the transformation process. Actions do not get transformed into anything: ‘leading to’ is a different concept from transformed into. In a transformation, what comes out is the same as what went in, but in a changed (or transformed state). As an example, if we consider a policy issue of over-fishing related to salmon farming in Scottish Fjords; one possible transformation may be ‘demand for farmed salmon’ into ‘demand for farmed salmon met’. An error in formulating this transformation process would be ‘demand for farmed salmon’ transformed into ‘farmed salmon’. The farming industry would make a fortune if they knew how to bring off this remarkable transformation! A critical point is that there will always be a number of different Transformation processes which are relevant to the Policy Issue chosen within a SAF implementation. Exploring several CATWOE models built on these different Transformation processes helps to identify the different perspectives through which we can look at a problem situation and also helps to identify the range of appropriate stakeholders that have some input to/impact by the Policy Issue identified. Indeed a comprehensive approach to the process of issue resolution would be to develop a series of CATWOE models for each of the Worldviews associated to the Policy Issue and use this range of information to inform the construction of the conceptual model.

Going back to the example of salmon fishing in Scottish Fjords, Figure 2 gives examples of a range of pairs of Transformation processes and Worldviews, outlining Customers, Actors, Owners and the Environment for one of these pairs. The drivers, or social forcing, behind the growth of this farming, include the Worldviews in the table, the need for economic capital to be invested profitably, and the wish to preserve employment in remote parts of Scotland where commercial fishing of wild stocks has been important – but is now seen as at threat due to overfishing. It is the mixture of roles (social positions recognised as significant), norms (expected behaviours) and values (beliefs about what is humanly ‘good’ or ‘bad’), combined with the economic costs which define the different worldviews relating to salmon fishing. It is a part that can change. When wild salmon were common in Scottish rivers, and there was little demand from tourists for salmon-fishing, then salmon were poor peoples food. Then, salmon became a rare and expensive fish, because most were preserved for the benefit of those who had bought the fishing rights. Nowadays, farmed salmon are the cheapest fish available in supermarkets, and so are once again widely eaten and the more prosperous distinguish themselves by paying extra for ‘organic’ salmon, believing it to be reared in better conditions and with less environmental impact, and themselves more virtuous (see SAF System Design manual).

It is interesting to note that the CATWOE was not utilised to any significant degree during the implementation of the SAF by the SPICIOSA scientific community and this was largely due to the fact that study site scientists did not readily identified the potential usefulness of the framework. A clear problematic area was the idea of ‘worldview’ and the fact that for any human activity related to a

given policy issue, there is very rarely only one worldview – but in fact there is a series of ideas regarding relevant sub-systems of human actions and relationships – a series of relevant CATWOES models. The traditional methodology of physical science is largely concerned with only one 'worldview': from which a specific need is defined and an efficient means of meeting that need is explored (Checkland, 1981). The reality is that different stakeholders and different scientists come to the table with different perceptions, beliefs, and motivations and from hence objectives as to what they wish to gain from the engagement process. CATWOE can be used to gain some insight into this social complexity.

**POLICY ISSUE: OVERFISHING**
**HUMAN ACTIVITY: SALMON FISHING**

Example 1:

| | | | |
|---|---|---|---|
| Customers: | Beneficiaries: Fish farmers, suppliers of goods and services (e.g. ice suppliers, net makers, fish vets, haulers). Victims: Anglers, Biodiversity Action Groups | | |
| Actors: | Fish farmers | | |
| Owners: | Crown Estates, Scottish Executive, Scottish Environmental Protection Agency (SEPA), Scottish Natural Heritage? (SNH), European Union? (Financial Instrument for Fisheries Guidance) | | |
| **Transformation:** | **market for farmed salmon** | **>>>>** | **market for farmed salmon exploited** |
| **Wordview:** | **salmon farming plays an important role in the Scottish regional economy** | | |
| Environment: | Farming technology, assimilative capacity of the loch, regulatory laws | | |

Example 2 (in part):

| | | | |
|---|---|---|---|
| **Transformation:** | local provision of organic salmon | >>>> | local provision of organic salmon enhanced. |
| **Worldview:** | Salmon farming is creating significant environmental impact on Scottish lochs: rearing 'organic' has less environmental impact | | |

Example 3 (in part):

| | | | |
|---|---|---|---|
| **Transformation:** | health needs | >>>> | health needs met |
| **Worldview:** | Salmon provides an important source of protein and omega-3 fats which are central to good health. | | |

Figure 2: Examples of different Transformation processes and associated Worldviews for one policy issue.

Table 1 is a final example of from SPICOSA about how it is possible to have different viewpoints, using the Project itself as a basis for identifying emerging perspectives on who 'owns' issue resolution.

*Table 1: An example from SPICOSA: 'Who owns 'Issue Resolution'? Three CATWOE models*[*]*.* (see ASF System Design Manual).

| | Model 1 | Model 2 | Model 3 |
|---|---|---|---|
| ***T**ransformation* | Need for knowledge transfer from science to environmental management → need met by completion of SAF SSA[2] | Requirement to satisfy sustainable environment regulation under EC Directives → requirement met | Peoples' environmental concerns → these concerns met |
| ***Owners*** (who drive, or can stop T) | SSA scientists | Official environmental decision-makers | Community Environmental Activists (in Civil society) |
| ***W**orldView* (examples of possible world-views relevant to SPICOSA | Enhancing the availability of scientific knowledge to decision-makers will aid the transition of policy and society towards sustainability | Development and application of policy will allow more sustainable environmental management; meeting EC requirements, as well as electorate's expectations, is central to getting re-elected or keeping a job | A 'healthy' environment is needed for community and individual wellbeing; addressing an environmental problem is needed to sustain the livelihood of the individual or community |
| *Environment* (including drivers of the SAF SSA | EC FP6; SPICOSA Description of Work, timetable available expertise | National/ provincial governance; WFD and similar EC directives | Everyday life; public awareness of environmental problems; people' concerns about loss of ecosystem goods and services |
| ***A**ctors* (who carry out **T**) | SSA team, Stakeholder Participant Group (SPG) | SPG, SSA team | Activists, SPG, SSA team, other identified stakeholders |
| ***C**ustomers* ('end users'): who will profit or suffer loss from, **T** | EC; SPICOSA Management, SPICOSA participating scientists | 'The Public'; 'the Government' ( as executive) | Households or individuals with interests or concerns; communities or informal groups characterised by place, interests or concern |
| *Starting Point for 'Issue Resolution'* | The System Design handbook etc; knowledge of actual or potential Impacts | Policy defined by Governance & implemented by Environmental Managers at the operational level | Specific concerns about environmental ill-health and its effect on human socio-economic well-being |

[*] Notes. (1) Other models are possible- for example, one in which the ***O**wners* are organizations from the Private Sector . (2) The ***E**nvironment* in CATWOE comprises everything about the political, legal, economic, social, demographic, technological, and natural environments that provide the context for the SAF SSA 'problem' and the arena or forum in which it is debated.

[2] SSA= Study Site Application

## *2.2 Steps for identifying the issue*

Accepting the existence of multiple perceptions of any policy issue is an important and challenging facet of issue resolution, hence discussing this first. However, the type of exploration discussed in the previous section belongs to a more extensive process for identifying a policy issue or issues. Figure 3 presents a sequence of steps for undertaking the process for identifying the issue. The aim of this process is to gain a better understanding of the potential policy issues within the coastal environment and the relationship between stakeholders and these issues. More specific information about this process of mapping can be found in the accompanying document on stakeholder mapping (Vanderlinden *et al,* 2011a).

**Figure 3: Possible broad steps in a process for identifying and selecting the Policy Issue**

| |
|---|
| **Step 1: Building relevant context information**<br>Information about the history of the situation in the coastal zone, about the issues that may be raised and the stakeholders likely to be involved should be gathered. It is recommended that study sites begin a broad process of Institutional and Stakeholder mapping in order to most fully understand the coastal system prior to identification of the issue. Before beginning any interviews or focus groups communication, the facilitator should collect sufficient background information on the total coastal context. In some cases it enough contextual information might be provided by carrying out a desk-top study. |
| **Step 2: Understanding the issues of the stakeholders**<br>In addition to seeking contextual information in a desk-based study, the scientists should at an early opportunity seek to meet with stakeholders to begin to identify the range of potential policy issues and use these opportunities to refine and develop the stakeholder and institutional mapping. The Stakeholder-Policy Mapping Users' Manual provides some specific guidance about how to identify and begin the process of engaging with stakeholders. It would be useful at this to start using the CATWOE model to begin to identify different groups of stakeholders and their relationships to particular policy issues.<br><br>The initial data-gathering stage is interactive, as stakeholders clarify their positions or needs (what they want) and more importantly, their interests (why they want it). If undertaken in a group context; the assessment can be helpful in building relationships among stakeholders as well as between the stakeholders and the assessor, and in eliciting stakeholder participation in managing and resolving the dispute. This initial phase of the process presents the opportunity to build a shared body of information and knowledge, before deliberation on the policy issue commences. Moreover, as issues that had previously been submerged come to the forefront, this informational stage can lead to the identification of other stakeholders. |
| **Step 3: Stakeholder issue mapping**<br>For each policy issue, define how the stakeholders relate to each other and to the issue. The Stakeholder-Policy Mapping Users' Manual (Vanderlinden *et al.,* 2011) contains advice on the preparation of five different 'maps' using the information taken from desktop studies, interviews and focus groups. These maps are just five possible ways of presenting the information to help plan and inform a later collaborative process. The CATWOE model should be revisited at this stage to see if further insights can be gained into the functional relationships between stakeholders and issues.<br><br>There are many mapping tools and ultimately it falls on the assessor of the mapping exercise to decide on the best way of displaying the information for the context, and how they plan on running the deliberation process. |

**Step 3: Facilitating a deliberation on the policy issues**

Following mapping of the issues and the stakeholders, it is important to now engage in discussion with a group of stakeholders about the main Policy Issues. The stakeholder maps should be used as a basis for information this deliberation process. The stakeholders involved should be as wide and representative a group as possible and is likely to also involve those stakeholders who were engaged within the interview or focus group phase when using the issues of the stakeholders.

It is important to check during the deliberation forum that the maps produced are precise and comprehensive and that they really catch the diversity and range of ideas/interests/opinions represented among the stakeholders in total. It is important to keep this diversity and the variety of opinions for as long as possible into the deliberation process and thus make the variations in interests and in the positions understandable for the participants in the collaborative process of policy-making. Information about how to conduct a deliberation process is available from Vanderlinden et al. (2011b).

**Step 4: Agreeing a Policy Issue**

The aim of the deliberative process described above should be the identification and agreement on the Policy Issue or Issues which the SAF implementation will seek to address. In some cases key research questions or priorities within a broader issue that should be studied. The tools that have been briefly described should assist the process of Policy Issue selection and the motivations, priorities and interests of stakeholders, however reaching a consensus on the most important Policy Issue might not be straightforward. Despite best efforts following deliberation a clear consensus on the Policy Issue may not emerge from the process.

If these conflicts cannot be resolved by discussion, it may be necessary for a voting-style decision-making process to be employed in order to make the selection and to go with the Issue selected by the majority of stakeholders. Alternatively, scientists may ask stakeholders to individually rank the issues and they undertake an analysis of the results to achieve a decision. Where there is conflict, these situations need to be handled carefully and as transparently as possible to avoid alienating those stakeholders whose priority Issue is not eventually selected.

The steps provided above are certainly not a hard and fast process and SAF users should attempt to tailor their approach to the situation and management context to be found in their situation. Although there is no 'correct' way of identifying the issue, SAF users should try to be as inclusive in this process as possible, provide as transparent a process as possible and genuinely allow the selection of the Policy Issue to reflect the priorities of the stakeholders.

## 3. Influences of the identification of a policy issue: External and internal pressures

The preceding section suggests a procedure for scientists to follow and proposes some simple best practices for identifying the issue. However, it is recognised that there are many external and internal pressures that may influence the identification and selection of a policy issue. This section introduces some of the constraints on the process of identifying the policy issue as these have emerged from the experiences of implementing the SAF within the SPICOSA scientific community. It does not attempt to discuss these constraints in any detail but rather simply raises them as issues that SAF users might wish to be aware of, and where possible, manage earlier in the issue resolution process.

### *3.1 Governance and law*

Legal considerations are likely to be important influence on identifying and prioritizing Policy Issues. For example, the need to satisfy the requirements of the Water Framework Directive, as transposed into Laws or Regulations in the state or region containing the location of the SAF application, may be of particular concern to some policy makers or environmental decision-makers.

Institutional mapping has an important role within this context (McFadden et al., 2010). It highlights that certain features of the governance process (e.g. rules, policies, laws) will be encountered at one point or another in a decision-making process and illustrates those actors, activities and environments that a decision regarding a policy issue may impact. This can influence the selection of a management option: if governance constraints mean that there is limited power to influence the policy issue or alternatively if they provide a vehicle whereby change can be facilitated. Institutional and stakeholder mapping might also bring practical advantages from making information on institutional and development history as well as the management legacy accessible. This could help to avoid inefficient use of resources both in meetings and prior to the meetings discussing unfavourable options which may have already been rejected or failed in their implementation. In addition, it should also serve to assist in avoiding the repetition of previous mistakes.

### *3.2 Political pressures*

In addition, to recognising that there are potential legal considerations that may impact upon the selection of an issue, other political pressures may also influence the process. An example of political pressures influencing the process of policy resolution might be when the priorities of those who provide funding for ICZM or have political influence may be weighted more highly than those of other stakeholders. Recognising and capturing political sensitivities is important when seeking to understand the policy issues and again this is something that the process of Institutional Mapping can assist with. Committing time to defining the stakeholders is important for a number of positive reasons, however in this context of political pressures it can help develop the basic ground-conditions for a successful engagement process. The figure below identifies some questions concerning issues of power and legitimacy that are useful to bear in mind when identifying a stakeholder group (Green, 2004). These can prove useful in helping to avoid the pitfall of unwanted exchange of powers within the issue resolution process. However, it is important to remember that power can come from many sources, including not only those who command a significant legal mandate or have significant financial resources but also for example those who have a significant amount of information or can wield emotional or other pressures. This leads us to the next of the factors: the dominance of one or more stakeholders in the issue resolution process.

- Who has entitlement to involvement, and what creates that entitlement?
- How representative are those involved?
- What is the relation between unelected stakeholder groups and democratically elected bodies?
- Do the processes through which stakeholders reach a conclusion comply with the requirements of procedural equity?
- What are the obligations that follow from being included in the decision process? In particular, are the stakeholders bound by the decision of the group?

Figure 4 Examples of questions concerning power and legitimacy in stakeholder engagement

### *3.3 Stakeholder conflicts, dominating stakeholders and power relations*

Understanding as much as possible about stakeholders, their relationships and identifying potential conflicts prior to engaging with stakeholders will provide SAF users with the best opportunity for tackling these issues within the process of selecting a Policy Issue. During the process of conducting stakeholder-issue mapping it can be useful to weight different stakeholders or stakeholder clusters according to the power held by these groups. Experience has found this 'power weighting' to be the most difficult task, and potentially the cause of conflict if the map is presented to a group of stakeholders. While making power explicit is an important and useful task, users should think about the intended use of such maps before making these maps available to a stakeholder group (Vanderlinden *et al.,* 2011a).

In some cases conflict resolution activities or techniques should be employed by the facilitator to assist this process. For references to conflict resolution techniques see Appendix A of the Stakeholder-Issue Mapping users' manual (Vanderlinden *et al.,* 2011a). To participate or not in a collaborative process is a choice each participant makes, so understanding motivations or incentives for engagement is important. A concept from negotiation theory that helps assess incentives to collaborate is BATNA or Best Alternative To a Negotiated Agreement. Each potential participant has his/her set of objectives and perceives various means for attaining them. If a party believes it has a strong BATNA, in other words, an alternative to negotiating within the process, then collaboration may not seem desirable. If one can do what one desires unilaterally, why collaborate? Examining each participant's BATNA, allows users of the SAF process to better understand stakeholder motivations and identify best processes to deliver effective deliberation on the policy issue resolution process.

Of course, not all of the discussion around differences and the conflict will be negative. Understanding more about the stakeholders and their priorities is a key part of undertaking coastal management in the real world. Indeed, many stakeholders might be comfortable with existing hierarchies of decision-making and will actively look to other stakeholders to make the decisions about the Policy Issue. Managing the process to ensure that all parties are able to participate and representing all of the opinions is a key aspect in the success of the process, even if in the end a consensus about the Policy Issue is unable to be reached. One final issue to raise is that there is often an assumption that consensus is a good thing whilst ignoring the question of whether the consensual solution is a desirable one in any other sense, or whether the process which produces the consensus is a good one. Framing the issue in a particular way may be more useful than the others in a particular context. At a simple level, it would be useful to know when it is most beneficial to focus upon areas of agreement between stakeholders and where it is necessary to consider zones of conflict.

### *3.4 Experience and interests of the scientists*

As described above an initial starting point for identifying relevant Policy Issues and ecological dysfunctions often rests with those applying the SAF and their experiences of their study site and the human activities located there. Examples from SPICOSA illustrate that in some situations scientists have selected a list of issues for discussion at initial stakeholder meetings, although in many of such cases they have attempted to put together a comprehensive and inclusive list. This was felt by the SPICOSA scientific community to be necessary for practical reasons and to initiate discussion. However it is imperative that these 'pre-selected' issues should not be allowed to dominate and preclude the discussion of other (potentially more relevant) issues. This might be avoided by ensuring that a meeting is properly facilitated to try to ensure that as many viewpoints are considered as possible and a wider range of policy issue discussed if stakeholders feel that this is appropriate.

The refinement of a selected Policy Issue by the SAF user is another area whereby caution needs to be exerted. When applying the SAF within the SPICOSA scientific community there where cases in which the process of stakeholder engagement led to the selection of a broad Policy Issue (for example eutrophication) which was then refined by the SAF user into a more targeted Issue (for example, sustainable mussel production) that can be taken forward into the system definition. This process of refinement is clearly going to be influenced by the experiences, interests and expertise of those leading the SAF and needs to be done in such a way as to maintain the integrity of the stakeholder engagement process. Ideally, the stakeholders would be involved in this refinement process. At the very least those leading the SAF implementation should present the refined issue and the reasons for its selection at a stakeholder meeting and allow time for discussion on the process.

### *3.5 Perceived availability of data and information*

Another factor that may influence the selection of a Policy Issue is the availability of data or information about the system and in particular in a format that can be used within the quantitative models being developed within the SAF process. A need within the implementation of a SAF process to undertake numerical modelling may mean that the availability of data is a genuine constraint on the selection of a Policy Issue. However the modification of a Policy Issue away from that selected within a stakeholder engagement process should not be undertaken lightly and in those cases where it is necessary it should be facilitated in a transparent way with the full knowledge of those stakeholders who were involved in the selection. Where the availability of data is likely to be a constraint on the choice of a Policy Issue, data issues should be included within the selection discussion with stakeholders. Where appropriate quantitative data isn't available, it is also important to consider using social science tools as vehicles to gain such information, for example based on survey data collection and questionnaires.

### *3.6 Time and other resourcing pressures*

Engaging stakeholders can be a challenging and lengthy process. There are many problems and barriers that can emerge as a result of poor resourcing of the issue resolution process. It is therefore of vital importance that engagement processes are resourced as appropriately as possible in the implementation of a SAF process. It is particularly important that resourcing issues are discussed in early decisions regarding the use and implementation of a SAF.

## 4. SPICOSA examples of selecting the policy issue

This focus of this section is on using two detailed examples to provide some review of the lessons which can be learned from the process of issue resolution within the SPICOSA scientific community experiences of the SAF. The Stakeholder-Policy Mapping User's Manual provides specific examples of how the stakeholder mapping activities have been achieved (Vanderlinden *et al.,* 2011a). The discussion below provides a brief summary of the approach adopted in the study sites and includes a review highlighting some best practices where these can be identified as well as instances in which the process might have been improved. It is important to note that this review was based on the process of issue resolution as implemented within the initial step of the SAF process. It does not reflect any subsequent reiteration of issue resolution at a later stage of the implementation process.

### *4.1 Guadiana Estuary: a ranking approach to identifying the Policy Issue*

Guadiana River Estuary provides an interesting but challenging case study when considering Policy Issue identification due to its location as a border between Portugal and Spain and the need to try to select an issue that is relevant to both sets of stakeholders.

**Approach**

The SSA team began the process of issue resolution by holding a series of meetings with those stakeholders clearly 'visible' within the Algarve region e.g. those with direct legal responsibilities within the region. In addition, other stakeholders who were located in Lisbon, Huelva and Seville were contacted by phone and e-mail and introduced to the rationale and aims of SPICOSA and the SAF. Using these meetings the study site scientists compiled an initial list of Policy Issues. Relevant policies such as the Water Framework Directive were also taken into consideration when compiling the initial list.

Portuguese stakeholders who where identified in this initial engagement process were then invited to respond to a questionnaire (10 Institutions, 2 private organisations and 2 non-governmental institutions responded) in order to identify and prioritise their concerns with respect to the state of the estuarine system. The questionnaire presented a list of 18 potential Issues and allowed the stakeholders to add other issues which they considered as relevant.

The results from these questionnaires were used to rank the policy issues. The five issues of most concern to each stakeholder were taken and then tallied. These totals were then used to identify the three issues which were considered to be most important across all of the stakeholders. These were specified as:

1. the increasing discharges of untreated wastewater into the estuarine environment
2. the decrease of water and sediment quality and
3. the decrease of river discharge by the upstream dams

The SSA team used this list of three prioritised issues to select and refine their policy issue. Although they were identified as independent policy issues, the perspective of the study site scientists was that each issue was clearly linked within the system. Given this fact, and in an effort to try to include all of the most relevant issues to stakeholders, the SSA team decided to integrate all three of these as their SPICOSA Policy Issue. The Policy Issue was formulated to include the two human driving processes urban development and the use of dams which relate to ranked issues 1 and 3 respectively. These both lead to a number of dysfunctions and subsequent impacts within the system including ranked issue 3, the decrease of water and the quality of sediment in the system. The final aim of their Policy Issue was developed to account for all of these issues and was stated to be: *To develop a management tool able to simulate reliable eco-socio-economic scenarios for imposed conditions on: dam discharge regimes and/or wastewater treatment efficiency.*

**Review**

The process of selecting of the Policy Issue has in this case shown a number of positive aspects. The use of a ranking technique has ensured that the priorities of all those stakeholders that have responded to the questionnaire have equally been taken into account and the Policy Issue has been selected to try to address these concerns. The approach adopted can also be considered to be iterative and this is a very positive feature of the process. Initial contact with stakeholders has been used to discuss their concerns and create the list of possible issues and they have then been re-consulted through the questionnaire in order to rearticulate these priorities. This provides those engaged in this process with time for reflection

on the issues and may lead to a more thorough result. Utilising a questionnaire reduces the influence of power relations on the process of Policy Issue identification and should lesson any conflicts that may have occurred. Although there is also a negative perspective on this in that the lack of a group-based deliberation of the policy issues meant that there was no opportunity at this stage for relationship-building amongst the stakeholders. More importantly, the lack of a group-based discussion of policy issues meant that collaborative learning between stakeholders was not facilitated.

One clear way in which this process would have been improved would have been by introducing a deliberative phase, where stakeholders could have discussed and debated their priorities. This may have permitted a greater insight into the opinions of the stakeholders and provided a richer understanding of the Policy Issues. In particular, it would have allowed them to explore in more depth the specifics of the concerns of the stakeholders about water quality issues, when refining the policy issue, helping to avoid the dangers of making some assumptions about their concerns.

Despite the study site being located on the border of Spain and Portugal, no Spanish stakeholders were involved within the selection of the Policy Issue. The study site scientific team did consider those issues which they thought would be important from a Spanish perspective; however political challenges prevented these stakeholders from being actively engaged in the process of issue resolution. The lack of Spanish stakeholder involvement is clearly detrimental to the process as the scientists to not have the opportunity to understand the perspectives, agendas and priorities as these are expressed by the stakeholder themselves. However the difficulties of cross-border issues are appreciated and that some circumstances are outside of the control of the study scientists. One simple but important message is that a mixed scientist group from both countries may be most likely to facilitate a process where both stakeholder groups would be willing to participate.

From a broad perspective, using a ranking system that treats all of the stakeholders equally has a very equitable and justifiable rationale. However, it must be ensured that all of those stakeholders who will be engaged in the SAF later in the process 'buy in' to this approach. In this SSA, it does appear that this selection process has worked very well as stakeholders have remained actively engaged and interested in the SAF process. However, in other situations in which one or more organisations are dominant with strong legal responsibilities within the coastal zone, a process that ignores or marginalises their concerns in favour of those from a greater number of stakeholders, might cause problems of process legitimacy. Understanding the governance and legislative contexts within which the different stakeholders reside is an important aspect when identifying the main Policy Issues may influence the suitability of adopting a ranking approach to issue selection.

### *4.2 Oder Estuary: a political process in identifying the issue.*

The Oder Estuary is another SSA that presents a trans-boundary perspective with the study site being located within both Poland and Germany. This example illustrates the different political complexities present.

**Approach**

Within this study site the engagement context plays an important role in the process of issue resolution. There was already an existing ICZM initiative within the area and therefore a group of stakeholders had already been established. Scientists had previous experience of engaging with these stakeholders and had therefore some existing relationships and had gained some prior knowledge of their concerns. On this basis the scientists began the process of issue identification by building on this existing knowledge and through the examination of a large number of the Region's official documents, expert reports,

development plans and strategies and scientific papers. From a systematic analysis and evaluation of these documents some general issues of importance were identified. From this original list, those issues without a coastal dimension or those issues that scientists felt unqualified to tackle were rejected (e.g. emerging labour markets, cross-border education) and four broad issues were identified: flooding, shipping and technical measures, eutrophication and water quality and species migration.

The next step of the SSA team was to contact the relevant Ministry asking their opinion of the four different options. The scientists felt that this process of politically legitimising the selection of a policy option was necessary: the view was that they did not want to waste time and resources discussing potential issues with stakeholders that the Ministry would then not support. This process identified some topics that it would not be suitable to study, particularly due to existing political sensitivities present in the management of this cross-border system.

At the same stage of the process some members of the existing stakeholder group were also contacted on an individual basis to gather their opinions about the different potential Policy Issues. Water quality was considered to be an issue that had good support from these stakeholders. However this topic, although relevant to the Ministry, was also one in which political sensitivities became apparent. The Water Framework Directive sets out clear responsibilities for managing water quality and concerns were raised about whether this work would overlap and interfere directly with these responsibilities. Scientists allayed any concerns that their work would interfere with the implementation of WFD and a general Policy Issue of water quality and eutrophication was selected.

Following a discussion with stakeholders within a first stakeholder meeting a range of sub-issues and questions relating to the broad topic of water quality and eutrophication were identified and debated. Following these discussions and initial work undertaken by the scientists, the selected Policy Issue refined to the question: *which measures in the estuary would support a water quality improvement and how efficient will they be?*

**Review**

As described above a number of issues combined to influence the selection of the Policy Issue in this study site. A very clear lesson is the importance of historical legacy on the process of stakeholder engagement in general as well as issue resolution in particularly. Strong efforts should be given to gathering context information relatively to a study sites to explore and identify the existence of any such legacy effects. In this region it was important legitimise the process and gain support from high ranking stakeholders. In this case this involved gaining political commitment through originally selecting issues that had a predefined focus (i.e. the German Policy Regional Agenda 21) and discussing these with the relevant Ministry (Land Mecklenburg-Vorpommern) who had legal responsibility for many aspects of ICZM. These power dimensions strongly influenced the selection of the policy issue and it demonstrates the important impact that power relations play in engagement processes.

The competency of the scientific team was also considered to be an important factor steering the process of issue identification. Although scientists did discuss the broad policy issue with their stakeholder group and included their opinions within process of refinement, ultimately the scientific team developed the final refined aim of the project. The process might have been improved by the scientists having a clearer and perhaps more formal process of deliberating on the refinement of the policy issue. However, this issue needs to be contextualised within the research exercise of the SPICOSA project. It is hoped that post-SPICOSA applications of the SAF would have different ownership and leadership of the process (i.e. not a specific group of scientists leading but policy-makers or other stakeholders managing the process). In these instances, there might be greater flexibility in terms of involving scientists which have expertise in the specific issue that stakeholders are interested in addressing.

In relation to this point, it has been recognised by the SSA team that this Policy Issue does not reflect the priority concerns in the region: high rates of unemployment and emerging labour markets. These were topics that clearly did not fit into the expertise of this group of coastal scientists. They were also issues that were not considered specific enough issue for the SAF to address within the scientific project. However, this impact did have significant consequences for the SAF implementation. This was particularly seen with respect to difficulties in engaging some stakeholders within the process: they felt that the project was not addressing their main economic concerns.

In a review of the engagement process with SSA scientists in this case-study, they report that with hindsight it would've been more useful to have held more discussions in advance of the policy issue selection, including more stakeholders and discussing in more detail about the topics. They felt that provisionally speaking with the individuals face-to-face would have been more effective for exploring and understanding their interests and their intentions. This stresses the importance to the process of issue resolution of an early stage which seeks to understand the different perceptions, motivations and objectives which stakeholders bring to a specific engagement process. In the instance of this case-study the scientists had some prior knowledge of stakeholder interests. However, this overview did not provide enough depth of knowledge to build as strong and meaningful exchanges of information as would have been hoped for by the SSA team.

## 5. Concluding messages

There is a great danger in romanticising stakeholder engagement The danger is that an assumption is made that merely getting the 'stakeholders' together will necessarily result in success. Stakeholder involvement does not change the nature of the choices in a decision-making process: it changes who makes the choice. Its virtue lies in procedural equity rather than there being by necessity an improvement in the quality of the decision that will emerge from the process. It is clear that without effective stakeholder engagement we loose both an important aid to understanding the range of conflicts and choices, and the commitment of individuals or groups of stakeholders to any management plans that result from decision-making. Nevertheless, simply creating a deliberative group neither results in a consensus nor in a decision that is necessarily better than the decisions the individuals would have taken on their own. Although stakeholder engagement and deliberation are key facets of issue resolution they do not guarantee either consensus on the priority coastal problem or problems or that that a consensual decision will represent the 'best' decision or plan of action for the coastal system in question. This raises a more fundamental question of what is a 'better' choice: a better social choice or a better public choice? There are no simple answers to this question.

Although these, and other constraints can be identified, the fact remains that facilitating a deliberative approach to resolving the process of selecting the policy issue can significantly improve communication between social actors in such a way that they become more aware of each others interests and perspectives, and capable of elaborating solutions that serve the interests of all the participations instead of just some of them to the determent of the others (Tàbara *et al*, 2005). This idea of social learning is a central component of stakeholder engagement: engagement should be thought of less as a method for identifying the 'best' option and more as a process of discovery and invention. The facilitator must therefore be particularly sensitive to helping the disputants reveal, often through self-discovery, the issues that are really important to them, as well as to understand the priorities that motivate the beliefs and actions of the other stakeholders. In this sense, then, the assessment becomes a learning process.

This discussion has sought to introduce a range of issues, challenges and opportunities faced by a SAF user when seeking to implement an issue resolution process. From this discussion a few bottom-line

messages emerge that should be followed in order to facilitate, process efficiency and transparency. These attributes are critical to providing the best foundation on which to build the SAF process.

- Stakeholders should be involved as early as possible in the process of identifying the Policy Issue, as the Issue selected should be clearly emerging from the stakeholders.
- Study sites should try to engage and consult as many of the relevant stakeholders as possible within the constraints of the budget and resources and also stakeholders' willingness to be involved – a wide range of stakeholders that have been involved should provide the widest possible range of Policy Issues for discussion and in addition provide a legitimate process.
- Where appropriate an iterative approach to the selection of the Policy Issue should be adopted, which will allow for a more reasoned and considered discussion and deliberation of the potential Policy Issues to be identified.
- The process should be as transparent as possible – study sites should clearly document the process by which the Policy Issue was selected so even if the process that was used has limitations; stakeholders recognise and understand why decisions were made.
- A 'closed' pre-selection of issues (prior to stakeholder engagement) should be avoided where possible. If study sites do provide a list of Policy Issues for discussion by stakeholders, there should still be the opportunity for stakeholders to suggest alternatives to those on the list.

The selection of Policy Issue will most likely become the first interaction between scientists and stakeholders within a SAF implementation. This process of engagement and sequent inclusion of stakeholders' opinions should set the tone for the rest of the science-policy integration efforts throughout the SAF process. Lessons from elsewhere in the SPICOSA process (see Benefits of hindsight section of the SAF website: http://www.coastal-saf.eu/introduction/hindsight.shtml) have highlighted the importance of the Policy Issue to the success of the process. It is therefore imperative that due consideration is given to its selection and the process by which this is achieved.

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