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The ERA-NET promoting European research on biodiversity

BiodivERsA STAKEHOLDER ENGAGEMENT Handbook

BiodivERsA is the network of national funding organisations promoting pan-European research that offers innovative opportunities for the conservation and sustainable management of biodiversity and ecosystem services.

For further information on the ERA-NET BiodivERsA2, please contact:

Coordinator
Xavier Le Roux
xavierleroux@hotmail.fr

BiodivERsA Secretariat
Executive Manager: Frédéric Lemaître
frederic.lemaitre@fondationbiodiversite.fr

Fondation pour la Recherche sur la Biodiversité
195, rue St Jacques
75005 Paris
France

Tel: +33 (0)1 80 05 89 37
Fax: +33 (0)1 80 05 89 59

www.biodiversa.org

BiodivERsA2 (2010-2014), ERA-Net funded under the EU's 7th Framework Programme for Research.

BiodivERsA Stakeholder Engagement Handbook

Best practice guidelines for stakeholder engagement in research projects

This publication should be cited as:

Durham E., Baker H., Smith M., Moore E. & Morgan V. (2014). *The BiodivERsA Stakeholder Engagement Handbook.* BiodivERsA, Paris (108 pp).

For further information on this report, contact:

Helen Baker (helen.baker@jncc.gov.uk) or Matt Smith (matt.smith@jncc.gov.uk)

Acknowledgements:

BiodivERsA would like to thank everyone who contributed to the development of this Handbook.

The main authors were Emma Durham, Helen Baker, Matt Smith, Elizabeth Moore and Vicky Morgan of the Joint Nature Conservation Committee UK (JNCC).

Xavier Le Roux, Frédéric Lemaître, Claire Freour and Claire Blery of the Fondation pour la Recherche sur la Biodiversité (FRB, France), Hilde Eggermont of the Belgian Biodiversity Platform/ BELSPO (Belgium) and Henrik Lange of the Swedish Research Council FORMAS (Sweden) provided contributions and support.

The Partners in BiodivERsA2 contributed information on national practices.

Additional material and review was provided by Ros Bryce (Perth College, University of the Highlands and Islands, UK), Mark Reed (Birmingham City University, UK) and Anna Everly (Project Maya).

Representatives from 21 of the BiodivERsA research projects, along with Peter Bridgewater and Richard Ferris (JNCC, UK), Marie Vandewalle (Biodiversity Knowledge), Juliette Young (SPIRAL), Cathy Jolibert (University of Barcelona, Spain), Mark Reed (Birmingham City University, UK) and Anna Evely (Project Maya), made important contributions at a workshop in April 2013.

The Handbook was copy edited by Neil Ellis (JNCC, UK) and the design and layout completed by Angélique Berhault (Belgian Biodiversity Platform/ BELSPO, Belgium).

BiodivERsA is also grateful to all those who kindly contributed to the development of the Handbook through response to the public consultation process.

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FOREWORD

WHY DOES BIODIVERSA PROMOTE STAKEHOLDER ENGAGEMENT IN RESEARCH PROJECTS?

BiodivERsA is the network of national funding agencies in Europe that aims to build a dynamic platform for encouraging excellent and policy-relevant biodiversity research at a pan-European scale. Between 2008 and 2014, it launched five major calls for proposals on prioritised topics that correspond to the most pressing strategic issues that biodiversity and ecosystem services currently face. BiodivERsA aims to launch annual calls in future.

BiodivERsA partners recognise that research on biodiversity and associated ecosystem services is not only an environmental issue, but as much an economic, political, food-security and energy-security one. Being a cross-cutting subject, biodiversity research needs to promote interdisciplinarity, integrate a range of actors, reach academic excellence, and have a clear societal impact. Biodiversity scientists have already been involved in the provision of knowledge to stakeholders, including policy makers, adopting new ways of disseminating and explaining their findings. Still, for researchers it is not always clear how to effectively engage with stakeholders as exemplified by a recent statement from the principal investigator of one of the BiodivERsA-funded projects: "*A key point for me is understanding who are the key persons to be involved in research and what is the best way of communicating research results while having an impact; which is the lever we need to activate in order to make our results be used and change the course for the foreseeable future*".

In this context, BiodivERsA is promoting science-society and science-policy interfacing along the whole research process, from inception onwards (Figure F1).

BiodivERsA recognizes that it is particularly challenging for researchers to ensure academic excellence and societal impact at the same time. In particular, it appears that biodiversity scientists (probably as scientists from many other domains) are very strong in developing and using scientific frameworks and methodologies, but often lack such clear frameworks and methodologies when engaging with stakeholders. A selection of frameworks and methodologies designed to ensure a balanced representation of relevant stakeholders in research activities are available, but are often not applied in biodiversity research.

In this context, BiodivERsA has developed this best practice handbook on stakeholder engagement in research projects, providing practical guidance to researchers to better plan and engage with non-academic stakeholders, including policy makers. The development of this handbook has been led by the Joint Nature Conservation Committee (JNCC), one of the UK partners in BiodivERsA and an established authority in the field of stakeholder engagement practices. The objective of this BiodivERsA handbook is not to provide a detailed and prescriptive methodology; the handbook provides a framework and selection of tools so that each research consortium can determine which types of stakeholder engagement are the most profitable for their research project.

Making the engagement process more inclusive and enhancing the legitimacy and societal relevance of scientific research is considered a crucial aspect of BiodivERsA's activities to reinforce the European research community in the field for reaching excellence in terms of both academic outputs and societal relevance. We hope this handbook will further pave the way to knowledge provision and illuminate solutions for better protecting, managing and using biodiversity to tackle key environmental and societal challenges at the European level.

Xavier Le Roux
FRB, BiodivERsA coordinator and CEO

Hilde Eggermont
BELSPO, BiodivERsA WP5 leader

Helen Baker
JNCC, leader of the Task for stakeholder engagement in BiodivERsA

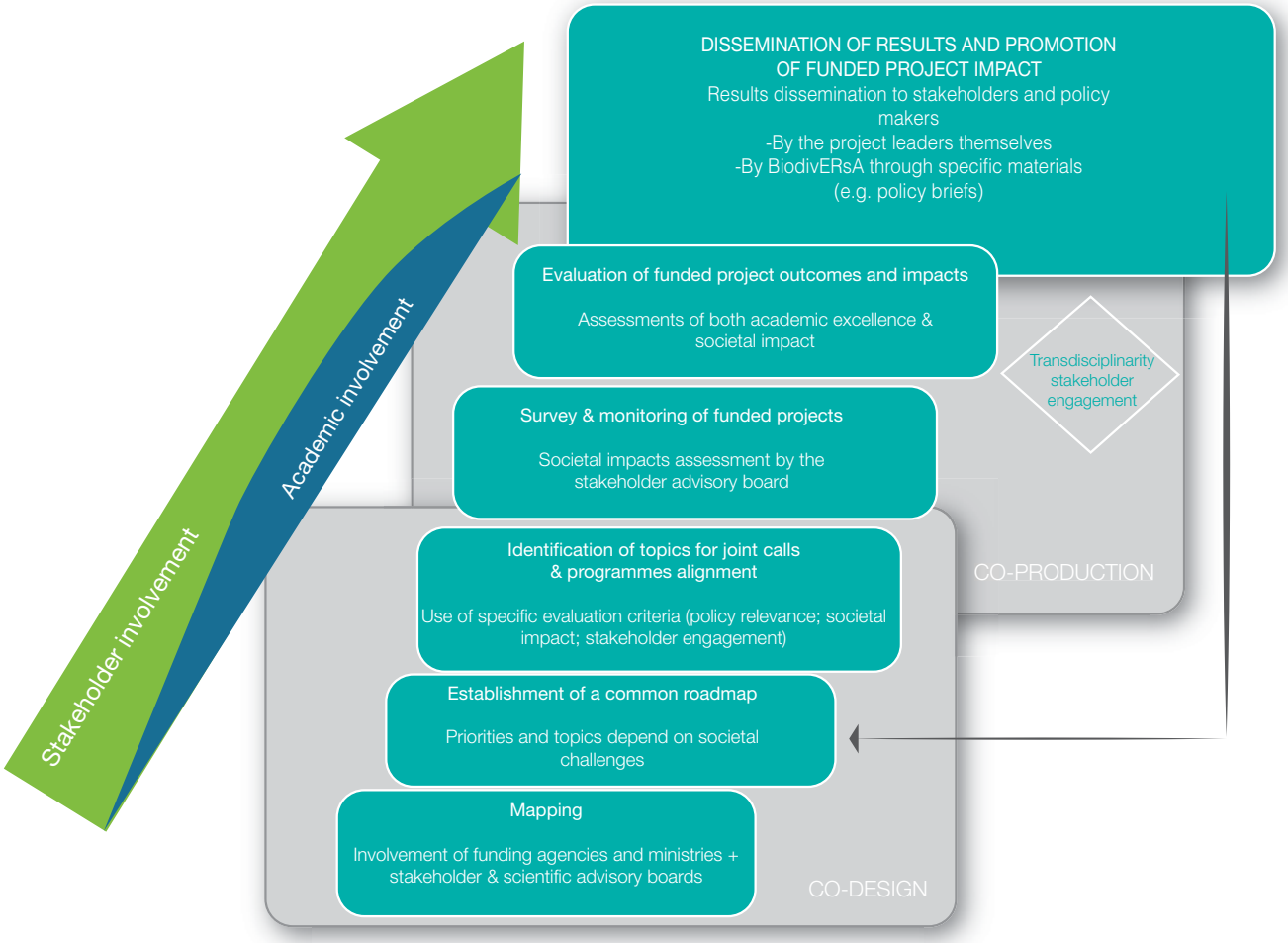

Figure F1. Approach and methodology used to engage stakeholders and promote the science-policy and science-society dialogue in BiodivERsA throughout the research (development) process. While academic excellence is a major criterion for evaluating research to be supported in BiodivERsA, innovative approaches are used (from co-design of programmes to promotion of research results) to increase the societal impact of the funded research.

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Part 1

BACKGROUND

The *BiodivERsA Stakeholder Engagement Handbook* has been created for researchers planning and carrying out research projects on biodiversity and ecosystem services, and may be a useful resource for the wider environmental science community. It is designed to assist research teams identify relevant stakeholders to engage with in order to enhance the impact of their work, and select appropriate methods of stakeholder engagement. It may also be useful for those evaluating applications to BiodivERsA research calls as context for the specific approaches taken by research teams.

Biodiversity and ecosystems research can have wide ranging applications and benefits; it is a cross-cutting subject, which has economic, social and political impacts. Thus, to be effective and comprehensive biodiversity research needs to take a trans-disciplinary approach and to involve a wide range of different researchers and scientists from different disciplines[1], from ecologists to social scientists and economists, as well as other stakeholders, from engineers to policy makers, land-owners, businesses, NGOs, the media, and the general public. A trans-disciplinary approach has its own complications; those involved may well have different ways of approaching and undertaking the research, as well as differing views on the desired aims and outcomes of the research. The findings from research need to be communicated effectively[2] and acted upon, in order to bring about a change in attitudes and behaviour which ultimately may deliver better outcomes for biodiversity and society. However, the complex nature of biodiversity issues means that agreement on concepts and solutions from such a diverse range of stakeholders is rarely straightforward, and can be difficult to achieve.

BiodivERsA is a pan-European biodiversity research funding mechanism that generates new knowledge for the conservation and sustainable management of biodiversity. It follows that the main users of this research, and therefore **critical stakeholder groups, include:**

- policy makers
- research funders
- non-governmental organisations
- natural resource managers (practitioners), including businesses and industry.

However, policy and managerial decisions can also affect the public and so it may be important to consider a wider range of stakeholders in the research process.

Several previous studies have assessed stakeholder engagement in biodiversity research[3-5], including approaches to social learning[6], and some guidance is available, for example the SPIRAL Handbook on science-policy interfacing[2], the UK programme 'Living With Environmental Change' knowledge-exchange guidelines[7]. These studies demonstrate that no single approach to stakeholder engagement can be applied to all projects and generally that the engagement carried out is considered to be 'too little, too late'. Additionally, existing literature outlines the importance of managing the expectations of both the researchers and the stakeholders – not only regarding desirable outcomes of a project that result from the engagement activities, but also what stakeholders can realistically expect to achieve and/or receive from engaging with a project[8,9]. The existing literature provides a clear set of generally agreed engagement rules, which this *Handbook* follows.

In determining the approach to take, previous studies demonstrate that **it is important to consider, at a minimum[10]:**

- the aims and objectives of the engagement
- the expectations of the stakeholders regarding the outcomes of the engagement
- the available resources (in particular time and money).

The *Handbook* aims to address these requirements, by providing a clear, simple guidance, which considers 'why', 'who', 'when' and 'how' to engage, as well as guidance on planning engagement activities, managing conflict and monitoring outcomes.

HOW DOES THE HANDBOOK WORK?

The *Handbook* is designed to provide advice to researchers on how to plan or manage the way that they engage with stakeholders. Exactly which stakeholders are engaged, how many there are, and the most successful methods of engagement, will depend on the type of research.

The *Handbook* covers topics such as: identifying the benefits of engagement; identifying appropriate stakeholders; when and how to work with stakeholders to inform the scope of research and share knowledge; and choosing the best techniques for engagement. It provides guidance on planning, carrying out, and following-up on stakeholder engagement. The *Handbook* should not be viewed as prescriptive; it provides **suggestions to help users ensure that they:**

- account for all factors necessary for conducting effective engagement,
- consider what tools are available for engaging stakeholders, and
- communicate decisions and outcomes (within the project team, with funders, and with stakeholders).

The *Handbook* demonstrates that there is a wide range of stakeholder engagement methods and tools available, each with their own advantages and limitations[10]. Additionally, it describes how different stakeholders are likely to make differing contributions and require different levels of communication at each key stage of a project[11]. Not all stakeholders will need to be engaged all of the time, or in the same way so the degree of engagement is likely to vary throughout the project[12, 13].

The *Handbook* comprises seven main sections:

- Defining the outcomes desired from the engagement (why)
- Identifying the stakeholders to be involved (who), including assessing, analysing, prioritising and understanding their motivations
- Identifying the best times to engage with stakeholders (when)
- Choosing the best methods for engagement (how), including information on the most frequently used approaches
- Planning the detail of the engagement
- Dealing with conflict in stakeholder engagement
- Reviewing and assessing the process to demonstrate achievements and to identify lessons learned for informing future engagement exercises.

Whilst each of these sections can be used separately, they can also be used in sequence to ensure a comprehensive and well-designed engagement process is developed. Case studies and templates, along with references for further reading, are provided.

WHAT DO WE MEAN BY ENGAGEMENT?

Engagement means the active involvement and participation of others in some aspect of a research project. Different levels of stakeholder engagement can be identified, depending on the ultimate aims of engagement activities and the project. Within the *Handbook*, four levels of engagement have been defined for simplicity. At the highest level, fully active engagement is undertaken, where stakeholders are effectively partners with the research team, driving the research direction, and/or contributing resources and perspective (defined as 'collaboration'). At the lowest level, communication with more-passive stakeholders might be designed to simply share information about the project or deliver the outcomes to those whom it

may affect (defined as 'inform'). Informing is typically a one-way flow of information, but is included as a form of engagement because it still requires the research team to communicate in a way that suits the stakeholder. The middle levels of engagement are designed to meet the needs of stakeholders who are 'consulted' (e.g. they are asked for opinions or information); and those with whom 'involvement' occurs (e.g. they are more fully engaged, and may also provide resources or data).

Individual projects may, and often do, engage stakeholders at more than one level. Most research projects require at least the first level of engagement (i.e. 'inform'), but different levels are likely to be appropriate for different projects and situations. Many projects will include a mix of all four levels of engagement.

WHAT IS A STAKEHOLDER?

The *Handbook* uses the following definition of stakeholder[14]:

> ***"A stakeholder is any person or group who influences or is influenced by the research"***

This broad, inclusive definition covers anyone, or any group, directly or indirectly affected by a project, as well as those who may have interests in a project and/or the ability to influence its outcome, either positively or negatively. A stakeholder does not have to be a direct user of, or directly affected by, project outcomes to be influenced by them.

It should be noted that there is a distinction between those undertaking or participating in research in a project, either other academics or non-academics as subjects of study, and those who are not. The scope of this *Handbook* is focussed on engaging with those individuals or groups who are *not undertaking* the research as part of a research team or are not themselves the subject of research. In other words, it is not a handbook of research methods in social science.

Stakeholders are often broadly grouped, for example 'policy-makers' might be identified as an important stakeholder group for a project, but there is likely to be much variation in the interests and motivations of different stakeholders in a grouping. Such variation might be affected by factors such as the geographical scale at which they make decisions or operate, and resource availability. For this reason, it is important to recognise that not all stakeholders in one broad group are likely to have the same interests and motivations, and so the engagement levels may vary for different individuals or organisations in a group.

WHY IS STAKEHOLDER ENGAGEMENT BENEFICIAL?

There are a number of reasons for undertaking stakeholder engagement within research. These include: promoting links between science and society; gaining access to additional information or resources, and improving the relevance or utility of the research to users and beneficiaries (see Table 1.1 for a summary). For example, by engaging with stakeholders, the research outcomes can become tailored more effectively to local contexts, increasing the likelihood that outcomes are adopted and applied, and leading to beneficial impacts for all[15-17].

Additionally, engagement can lead to learning and empowerment. By engaging with researchers, stakeholders can learn and assist in the generation of

new knowledge (e.g. social learning[6]; knowledge exchange[7]), and may be empowered to become involved in future research[15,18,19].

Furthermore, by considering local knowledge in the research process, it becomes possible to anticipate and improve unexpected negative outcomes before they occur[20-23]. Well managed engagement can also facilitate learning and trust between participants[17,24], and help mediate conflicts[25].

Establishing the *reason(s)* for engagement is a critical first step to take *before* any engagement is undertaken. Existing literature suggests that the benefits of engagement can far outweigh the risks, including those risks posed by lack of engagement[26]. If well planned, and adequately resourced, successful engagement can enrich research and deliver better knowledge, and thus better outcomes for biodiversity and society.

Fire management on a European heatland ecosystem, as part of the FIREMAN project.

CASE STUDY

BENEFITS OF STAKEHOLDER ENGAGEMENT

Experiences from the BiodivERsA FIREMAN project (see Appendix 1) illustrate well a range of benefits that stakeholder participation can bring. This project investigated the role of fire management in maintaining biodiversity in different European ecosystems and involved a high level of stakeholder participation to inform fire-vegetation models under climate change scenarios. The following benefits were described by a researcher from FIREMAN:

- Researchers developed a deep understanding of practical fire management issues by participating in stakeholder workshops across Europe where they discussed fire management directly with land managers from different countries. This informed the development of complex ecosystem models.
- Discussions with stakeholders diffused conflict between stakeholder groups with differing perspectives on fire management, resulting in constructive dialogue.
- Sharing experiences in fire management across borders: International meetings and a conference were held which brought together stakeholders from different European countries to discuss fire management research. The opportunities for managers to discuss fire management with others in contrasting ecosystems and in different countries were perceived to be extremely insightful and valuable for informing their own practice. One stakeholder reported that insights gained from their participation in international events had been integrated into practical forestry training programmes in Spain.

Table 1.1

Summary of potential benefits from stakeholder engagement in research on biodiversity and ecosystem services based on the four levels of engagement presented in the Handbook (see Part 3 for a full description of the levels of engagement). Note that benefits identified for lower levels of engagement are also appropriate for all higher levels (i.e. the benefits identified for the 'inform' level of engagement also apply to 'consult', 'involve', and 'collaborate').

BENEFITS OF ENGAGEMENT	LEVEL OF ENGAGEMENT			
	Inform →	**Consult** →	**Involve** →	**Collaborate**
BENEFITS TO RESEARCH TEAMS	Higher profile and enhanced reputation Useful contacts for future engagement Improved dissemination of results Enhanced impact of research Increased support for the research	Improved chances of funding success Better knowledge Opportunities for learning Better quality data	More resources provided Potential to improve methods	Improved research questions Better analysis Increased potential to leave a legacy
BENEFITS TO STAKEHOLDERS	Opportunities for learning Better access to knowledge Improved decision-making Improved policies	Access to better technologies Business opportunities Sense of inclusion and involvement	Opportunities to be paid for providing data or facilities	Opportunities to influence or drive research A sense of ownership
BENEFITS TO WIDER SOCIETY	Better knowledge applied in policy and practice Reduced barriers between science and society	Improved trust and respect Access to opportunities	Better evidence	Shared responsibilities and decision-making More relevant and more inclusive research

CHALLENGES AND LIMITS TO ENGAGEMENT

Although there is strong evidence that effective engagement can bring many benefits to the research process, it is important to approach engagement critically, and be aware of some of the challenges and limitations that may be faced. For example, engagement increases the costs to both the research project and the stakeholders in the short term, and might make the undertaking of the project more complicated; whereas the useful outcomes can be longer term or seem intangible and remote. Some scientists may see the involvement of stakeholders as a constraint instead of an opportunity[27], and some stakeholders may lack the time to engage, or experience 'stakeholder fatigue', that is they begin to feel overloaded with engagement activities, which negatively affects willingness to participate and lessens the quality of their input.

In addition, unbalanced engagement can lead to perverse or poor decisions if it inadvertently reinforces existing privileges, or where group dynamics discourage minority perspectives from being expressed[11]. Ethical considerations include intellectual property rights (IPR), which need to be discussed and agreed to ensure stakeholders are clear about the implications of their involvement, especially if they are data suppliers.

Stakeholder engagement – making it CREDIBLE, RELEVANT AND LEGITIMATE

For research to be considered valid and valuable, it has been recognised that it should be undertaken with credibility, relevance and legitimacy (sometimes referred to as 'CRELE')[28,29,2,30]. These three factors can be strengthened by appropriate engagement with stakeholders[31]. However, the same principles can be applied to the stakeholder engagement undertaken within that research – to give it more validity and impact it should incorporate the characteristics of credibility, relevance and legitimacy.

CREDIBILITY is the perceived quality and validity of the stakeholder engagement process and the people involved with the engagement[30]. To improve credibility, a stakeholder engagement process should have clear objectives, use the most appropriate people and methods, but avoid exclusion of those with opposing views, and be transparent; the view that others have of the process is also important. Some continuity of those involved in stakeholder engagement exercises is also considered important to ensure that knowledge and skills are built upon, and to maintain relationships and build trust.

RELEVANCE refers to the usefulness of the engagement process and its outcomes – how closely it relates to stakeholders and researchers needs, and how responsive the process is to changing needs[31]. Adopting understandable language for different stakeholder groups; ensuring the timing of the engagement, and particularly the outcomes of the engagement, is appropriate; and being adaptable to changing circumstances can all enhance relevance. Relevance can also be improved through identification of key stakeholders in the planning stages of the process, and ensuring effective engagement and communication with them throughout. Relevance is key to motivating participation and ultimately having a real impact.

LEGITIMACY is the perceived fairness and balance of the stakeholder engagement process, and is particularly important in cases where conflict may occur. A clearly stated, appropriate and agreed stakeholder engagement process, along with appropriate methods, can help manage conflict and dissent, and therefore enhance legitimacy[30]. In addition, stakeholders need to feel satisfied that their interests have been taken into account appropriately. The inclusion of a balanced group of multiple stakeholders can improve legitimacy, although care must be taken to ensure this legitimacy is not threatened if some of the stakeholders are viewed to be inappropriate by others in the group[28]. Employing unbiased facilitators to help run engagement activities can also help.

Getting the CRELE balance

Building these three factors into the stakeholder engagement process takes time, effort and resources, and it may not always be possible to enhance all aspects of CRELE. For example, making a link with policy makers may improve the relevance of the engagement process and its desired outcomes for some stakeholders, but may be perceived by others as affecting the legitimacy of the process[28].

The most appropriate approach will be dependent on the individual project, and the desired outcomes of the engagement. However, early engagement is likely to make the engagement process more credible and relevant; and finding the right mix of participants and ensuring no groups have been excluded will enhance legitimacy and credibility.

There are examples of research projects in which stakeholder engagement failed to deliver intended outcomes, or led to unanticipated negative consequences, but benefits were still accrued.

In certain circumstances stakeholder engagement can occur in a situation of conflict, which must be handled carefully and sensitively. Many scientists are unused to working in situations where conflicts between individuals and goals are present, and may prefer to avoid it. However, in some areas of biodiversity study, conflict is to be expected and should be planned for in a positive, constructive way. Guidance on dealing with conflict is included in Part 7 of the *Handbook*.

CASE STUDY

BARRIERS TO SUCCESSFUL ENGAGEMENT: SCIENCE TO POLICY

A researcher in the BiodivERsA INVALUABLE project (Integrating valuations, markets and policies for Biodiversity and Ecosystem services; see Appendix 1) highlighted a common issue facing collaborations between researchers and policy makers. Policy makers tend to work on far shorter time-scales than researchers and require quick answers from researchers as policy develops. They look for quick solutions with a high level of certainty to aid decision-making. However, results emerging from research can be complex, uncertain and highly dependent on context, and often require refinement through further research projects on a longer time-scale. It is therefore important that expectations of policy makers are taken into account and are carefully managed from the beginning of a project, through explicit discussions of what policy makers require and expect from the engagement and research process. Researchers can then steer the research towards outcomes more relevant to policy where possible, or negotiate compromises with the stakeholders to ensure benefits for all parties. For example, it may be possible for the research team to provide literature-based assessments of present-day evidence to inform policy early in the research cycle, before empirical data has been collected. Members of the policy community often do not have access to this literature or the skills to critically evaluate it. Therefore making initial literature reviews available in this way can be a way to provide useful outputs early, although it may be a significant investment for researchers.

The majority of barriers to engagement can be overcome with effective design and good facilitation[17]. Table 1.2 provides an overview of key challenges and limitations associated with stakeholder engagement, with a brief list of ways these could be avoided or overcome.

Table 1.2

Ways of overcoming some of the challenges and limitations to stakeholder engagement

CHALLENGES AND LIMITATIONS	WAYS TO AVOID OR OVERCOME *(covered in more details in different parts of the Handbook)*
STAKEHOLDER FATIGUE[32-34]: may occur where many stakeholder engagement initiatives have taken place in the past, especially in circumstances where they did not lead to tangible outcomes for stakeholders. This may result in limited engagement with research.	Where possible, avoid working with communities suffering from stakeholder fatigue. Where this is not possible, ensure there will be tangible benefits for stakeholders from engaging with your research, and work with opinion leaders (who you may identify using stakeholder analysis) to persuade others that it is important to engage with the project.
BIASED REPRESENTATION OF STAKEHOLDERS OR KEY STAKEHOLDERS MISSING[35-37]: this may lead to questions being raised over the legitimacy of outcomes by some stakeholders.	Conduct a systematic stakeholder analysis to identify and prioritise those who should be engaged. Consider who might have most influence, but do not neglect those stakeholders with significant interest in your research, who may be powerless or marginalised.
POWER IMBALANCES WITHIN STAKEHOLDER ENGAGEMENT ACTIVITIES[16,17]: may lead to dominance by particular individuals and agendas, at the expense of others, whose ideas are not heard, making them feel marginalised, and potentially leading to or exacerbating conflict.	Carefully design stakeholder engagement activities with a professional facilitator, considering: parallel activities for groups in conflict or with significant differences in power; and facilitation methods that enable all participants to provide and comment on ideas (possibly anonymously). If there is no facilitation budget, undertake basic facilitation training for a member of the research team.
SHORT-TERM ENGAGEMENT[7]: stakeholder engagement often lasts only for the duration of funded projects, making it difficult to achieve impacts and deliver benefits expected by stakeholders.	Identify local organisations that might have a long-term presence in your study area and plan the legacy of your research with them from the outset, giving them sufficient ownership of the research to continue investing in outcomes long after the research has ended. Find ways to fund ongoing engagement, even if very limited, to maintain relationships, and lay foundations for future research that could be funded.
UNREALISTICALLY HIGH EXPECTATIONS[7,16]: engagement can sometimes create unrealistically high expectations among stakeholders who engage early in the research process, and discover their suggestions are not compatible with the scope of the research or are not funded.	Manage expectations carefully from the outset. If engaging with stakeholders during project development, make it clear if funding is uncertain; make sure you are engaging with those who have a strong interest in your research; identify which ideas the project team may be able to work with immediately, and update stakeholders as soon as possible with research plans to show which of their ideas have been integrated and why it was not possible to integrate all ideas.

KEY POINTS TO CONSIDER FOR EFFECTIVE STAKEHOLDER ENGAGEMENT

WHY?

- Have clear aims for stakeholder engagement in your project, and set these aims from the outset.
- Identify the benefits for stakeholders who engage with you.
- Determine and understand the motivations of stakeholders to be involved in the research process.

HOW?

- Every engagement process is different and needs to be properly funded and managed by those with understanding (and ideally training) in stakeholder engagement.
- Adapt the process to suit the needs of both the researchers and stakeholders alike.
- Plan your engagement and make sure you engage early in the research process (as early as possible); include scoping studies where appropriate.
- Think about the timing of your research and its outputs, and consider whether it can inform any relevant external or policy processes.

WHO?

- Systematically identify those who are likely to hold an interest in the research, including those who have power to influence the uptake of the research findings.
- Be inclusive – do not exclude groups that are difficult to reach and ensure balanced participation of all relevant demographic groups.

WAYS TO SUCCESSFUL ENGAGEMENT

- Engage in dialogue with stakeholders as equals and value their knowledge.
- Give stakeholders the opportunity to help plan their own engagement.
- Remember that not all stakeholders will have the same role or desire to be involved; not every stakeholder needs to be involved all of the time.
- Where it is considered appropriate give stakeholders power to influence the course of the research project; embed them where suitable in the project team (e.g. via stakeholder advisory panels).
- Use 'knowledge brokers' (who are connected to, and trusted by, different stakeholder groups) and experts in stakeholder engagement (including professional facilitators or science advocates) if project teams do not have the expertise or experience.
- Address ethical issues, including intellectual property rights (IPR).
- Manage expectations by being clear on what can or cannot change.
- Be prepared to be flexible and adaptable, tailoring research activities and communication of findings (e.g. policy processes or topical issues) as required
- Ensure communications can be easily understood by all stakeholders – do not use complex or technical language

unless this is asked for by the stakeholder.

- Tailor engagement to the practical and cultural needs of stakeholders, bringing the project to where they are, at times of the day and year that are suitable for them; where deemed appropriate, consider selecting or splitting groups according to gender or age.
- Do not forget to provide feedback to stakeholders as soon as possible/in a timely manner.

BEYOND THE PROJECT'S LIFE

- Think about the long-term impacts of the project, and the potential legacy.
- Assess the success of engagement throughout the research process, share good practice with peers, reflect on whether certain approaches need to be adapted, and assess the implications of any future practice.

CASE STUDY
ALLOW TIME FOR SCOPING AND PILOT STUDIES

Good planning is fundamental to the success of stakeholder engagement activities and maintaining the positive perceptions of the engagement experience for stakeholders. Researchers of the BiodivERsA FORCE project (see Appendix 1) committed considerable resources to scoping activities within focal Caribbean communities that depend on the health of coral reefs for their livelihoods, before beginning stakeholder engagement. The subsequent stakeholder activities were perceived to be successful and this is partly attributable to the investment in the scoping work. The following measures were taken:

- Avoiding potential stakeholder fatigue: stakeholders were informed of project aims and asked if similar research had been conducted to avoid replication.
- Refining methodologies: a pilot project was run in one area to ensure approaches and questions were well received and understood by stakeholders.
- Raising awareness: community meetings were widely publicised using flyers and spreading the word verbally to ensure that the communities were well informed of the aims of the research project.
- Developing local contacts: researchers recruited local assistants who had a good knowledge of the local communities and local issues to assist with stakeholder engagement. Researchers who are viewed as 'outsiders' from another country may be viewed with distrust; developing relationships with local contacts who are known and trusted can be a good way of overcoming this.

Some of the details of local case studies (e.g. study sites) were jointly decided with stakeholders to ensure the research was of interest and relevant to them.

CASE STUDY

WHAT WILL THE OUTPUTS OF THE STAKEHOLDER ENGAGEMENT PROCESS BE?

Deciding on the required outputs of the stakeholder process is an important part of the planning stage and allows researchers to manage the expectations of stakeholders. It may be that outputs are decided before stakeholders are involved or there may be flexibility to decide on this in partnership with stakeholders based on their needs. In the BiodivERsA Ecocycles project, stakeholder members of the national consultative forum were asked in the first meeting at the beginning of the project what they wanted to gain from their participation. They expressed a wish to work towards a specific output that would be useful in informing the management of rodent outbreaks in the future and it was agreed that an adaptive management protocol would be co-developed during the project. This clear goal maintained the interest of stakeholders throughout the process.

HOW BIODIVERSA CAN HELP IN STAKEHOLDER ENGAGEMENT

GENERAL INFORMATION AND ADVICE

Establishing best-practice approaches to engagement may require consultation with others who have been involved in similar processes. The BiodivERsA Secretariat may be able to help research teams by providing information on how existing research projects have approached stakeholder engagement, contact details of stakeholder engagement experts from these projects, and information from other EU projects that may be relevant (e.g. the SPIRAL project handbook and briefings on engaging policy makers[2,38]). Key information for applicants is posted on the BiodivERsA website [www.biodiversa.org]. In addition, information on professional media specialists might also be available.

INFORMATION FROM OTHER RESEARCHERS AND PROJECTS

The BiodivERsA Database [http://www.biodiversa.org/database] provides a comprehensive 'map' of the current state of biodiversity research in Europe in order to improve the identification of existing gaps and future needs for new research programmes, new facilities, as well as to detect potential barriers for successful cooperation. It includes information on research projects on biodiversity that are funded through national programmes and details of research institutes and other organisations (including stakeholders) involved, and researchers leading the projects. The database can help research teams to identify potential resources and network opportunities to further develop their research. In particular, it can help applicants finding relevant stakeholders to approach for a particular research project.

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Why engage with stakeholders

› Scope and context

›› Case studies

Identifying reasons to engage stakeholders

Reasons to engage stakeholders: European Beech Forest for the Future (BeFoFu)

Part 2

WHY ENGAGE WITH STAKEHOLDERS

“ Define why you wish to undertake stakeholder engagement and what outcomes you wish to achieve. Begin outlining the scope of the engagement and its context at the outset of the project and continuously develop it. ”

The first, and perhaps the most critical, step in the stakeholder engagement process is to identify why the engagement activity is necessary, what outcomes are aimed for, and the scope and context of the engagement[1]. No stakeholder engagement strategy can be devised without considering the reasons for engagement, and what is being sought from the process[1-8]. This initial step is defined as the ‘preliminary’ or ‘scoping’ phase because the scope and extent of engagement is defined at this point[4,9].

Depending on the level of engagement sought, there may be more, or less, engagement with stakeholders to identify the scope and context of engagement. In projects that are mainly operating in ‘inform’ and ‘consult’ modes (Table 1.1), this information may be made available to potential stakeholders, in an appropriate format. The information provided needs to be clear about the aims of engagement and how it will help the project meet the needs of stakeholders, so they can make an informed choice about whether or not they want to become involved with the research. For projects engaging predominantly in the ‘involve’ and ‘collaborate’ modes, it is important to engage stakeholders in this initial scoping phase of the work. Engaging stakeholders as early as possible in the research programme can increase the likelihood that research meets the needs and priorities of stakeholders, who are in consequence more likely to feel ownership of research outcomes[10,11]. Potentially, researchers may need to negotiate the goals of the research with stakeholders, perhaps identifying new stakeholders if goals change. The negotiating may be done as part of a stakeholder analysis; for example Dougill *et al*.[12] and Prell *et al*.[13] used an initial stakeholder analysis to identify key informants for scoping interviews in which they discussed and expanded the scope of the research, before revisiting their stakeholder analysis to include those with a stake in the revised scope of the research.

It is essential to have a definite purpose for stakeholder engagement that should be used to drive the desired activities, outcomes and outputs. Outputs are the tangible products needed to achieve desired outcomes, such as reports, websites, newsletters, or data. For example, if the reasons for engaging stakeholders are primarily about pragmatic issues (concerned with facts or actual occurrences rather than testing scientific theories), there is likely to be a stronger focus on outcomes of the process (e.g. increased abundance of a particular species). On the other hand, if the purpose is primarily normative (seeking to establish a norm, setting a standard/defining methods of good practice), then there may be a stronger focus on the benefits of the process itself (e.g. increased learning and trust, and reduced levels of conflict).

A well-crafted purpose for engagement will be focused, clearly defined, easily understood, with clear aims and objectives[4,9]. Some reasons for undertaking stakeholder engagement, and desired outcomes, are provided in Table 2.1[4,7,9,14,15]:

Table 2.1

Reasons for stakeholder engagement

- Raise awareness of the research project.
- Gain trust and improve working relationships, form new partnerships, create new networks, galvanize external support, and provide a clearer understanding of the benefits of the research.
- Encourage a sense of 'ownership' of the project by those likely to benefit, be affected by, or interested in, research outcomes.
- Provide people with an opportunity for personal development through engagement activities.
- Explore issues, share ideas and best practice, generate ideas and identify and raise better awareness of emerging issues.
- Co-design projects with stakeholders that may assist with producing a clearer definition of desired outcomes. Taking a broad spectrum of ideas and thoughts on board enables the adoption of a more holistic approach to addressing potential problems, limitations or conflicts.
- Aid the development of a transparent decision-making process and ensure policy decisions can be based upon stakeholder views and enable decision-makers to consider societal 'wants' and 'needs'. This can help reduce conflict and overcome barriers between science, policy makers and society.
- Involve stakeholders to make it easier to obtain endorsement of, or agreement on, resulting decisions from parties likely to either use or be affected by the results of the research.
- Gain access to resources or to obtain information data.
- Create new (or improved) communication channels, identify effective dissemination avenues and improve clarification of 'common' language.
- Provide equal rights and open access to scientific knowledge ('democratizing science').
- Enable researchers to identify cross-cutting issues and ascertain where research may be applied to other areas. It also improves the relevance, value and depth of the research and broadens the knowledge base, identifies knowledge gaps, addresses information needs and creates opportunities to link research more directly to policy and practice.
- Leads to improved risk management.

Identifying and clarifying desired outcomes is an important part of the planning process and helps to ensure that the focus on achieving aims as the project progresses is maintained[4]. In the early stages of a project, it is beneficial to consider the reasons for conducting engagement activities and the desired outcomes, aims and outputs. This information can also be of use in the final 'review' phase of the project when it will be necessary to assess whether the desired outcomes have been achieved. The success criteria of the project can be defined from the original objectives defined during initial scoping activities.

SCOPE AND CONTEXT

In addition to establishing the purpose of the engagement, and its desired outcomes, it is also important to determine the scope and extent of the engagement and its context. The 'scope' of stakeholder engagement determines where the boundaries of engagement lie and assist in defining achievable outcomes from engagement activities. The scope considers what the objectives can realistically achieve, what impact it may have, and whether it will contribute anything to the project aims. If the proposed engagement presents no benefit to the project then stakeholder engagement is likely not appropriate or necessary[16]. Scoping exercises help identify stakeholders who might wish to become involved and ascertain whether adequate resources are available to carry out engagement[4]. The costs, both in terms of time and resources, of stakeholder engagement to both the project and the stakeholder should not be underestimated at the scoping stage[2,5]. Furthermore, risks associated with undertaking engagement need to be assessed and taken into consideration to ensure that they are managed effectively.

Important points to consider when defining the scope of stakeholder engagement activities:
What can the engagement realistically achieve in the time available? What are the limitations and how can these be clearly set?
How are stakeholders to be involved - are they to be kept informed throughout the project lifecycle (see Figure 4.1), asked for their opinions, or involved fully in the decision making process? What impact will this have on the scope of planned activities?
What types of information will need to be gathered (quantitative versus qualitative) and how will this be collected and over what timescale?
What additional resources might be required to facilitate effective engagement (staff training, external contractors, and trans-disciplinary collaboration)? What will be the cost of engaging (both financial and other resources [e.g. staff time, cost of external contractors, and cost of training for staff])?
What are the potential risks associated with stakeholder engagement activities at a particular scale? How are these best addressed?
How are the outcomes of the engagement going to be implemented? How and when will the outcomes be communicated back to the stakeholders?
How will the success of the engagement be measured?

The extent of the engagement may, to some degree, be driven by resource and time availability. Considering the potential cost and time requirement of engaging early on in project lifecycle will ensure sufficient funds can be made available to enable engagement activities to be comprehensive, fit-for-purpose, and beneficial to all parties involved.

The scoping phase needs to consider the context of the engagement - the background to the subject being addressed by the engagement process. Every research project is unique and is shaped by the issues under consideration, the people involved, the prehistory of the work, and relevant wider decision-making processes, amongst other factors. These issues may affect what can, and cannot, be done within the engagement process and are likely to dictate which activities it will be appropriate to adopt. Understanding the context also helps to ensure that the engagement process builds upon previous experience and incorporates lessons learnt, rather than simply duplicating previous efforts. Defining context also makes certain that the engagement is of relevance to the potential stakeholders[5].

Important points when considering the background and context for engagement activities:
What similar projects have been undertaken previously?
How successful were the projects and what were the key elements in achieving or failing the objectives?
What stakeholders, or stakeholder groups, have been engaged in the past?
What is the historical context to the project?
What wider decision-making processes that may affect the project need to be considered?
Do existing networks exist, and, if so, how can these be utilised?
What is the relationship status with stakeholders or potential stakeholders?
Are there any relevant activities, events or communication channels that could be used to engage with stakeholders?

CASE STUDIES

IDENTIFYING REASONS TO ENGAGE STAKE-HOLDERS

The objectives of stakeholder engagement for a number of the case study projects (see Appendix 1 for details) is briefly summarised below in relation to the level of engagement sought by the researchers:

- Inform and consult: One of the objectives of the BiodivERsA INVALUABLE project was to inform policy makers about the use of market based instruments (MBIs) for the management of biodiversity and ecosystem services. Researchers engaged with stakeholders to produce policy-relevant documents to advise how MBIs could be better used to meet biodiversity conservation objectives.
- Involve: The FP7 MOTIVE project researchers involved stakeholders in a variety of ways to integrate experience and knowledge from forestry management into adaptive models to analyse the impacts of climate- and land-use-change on European forests. The FP7 FORCE project worked with communities in four Caribbean countries to gather data on the factors influencing the health of coral reefs and their relationship with community livelihoods to inform management of reefs and more-sustainable resource use. Findings were widely disseminated to communities and national stakeholders. In the FP5 BIOSCENE project, stakeholders with differing perspectives were involved with the development of a sustainability appraisal of scenarios for agriculture in mountain regions of Europe. Stakeholders were also involved in the development of scenarios to inform the design of fire management models in the BiodivERsA FIREMAN project. Participation was encouraged though international meetings and practical demonstration events. In the FP7 BESAFE project, researchers are working with stakeholders in biodiversity conservation to gather information on the effectiveness of arguments used for advocating the protection of biodiversity at different scales of governance and in different contexts through case study projects. Early findings have been widely disseminated via policy briefs and a stakeholder panel has agreed to co-development of a web tool that will make findings accessible and relevant to policy makers and stakeholders lobbying for biodiversity protection. The framework for the BESAFE

project shown in Figure 1 shows how central stakeholders are in achieving the project goals.

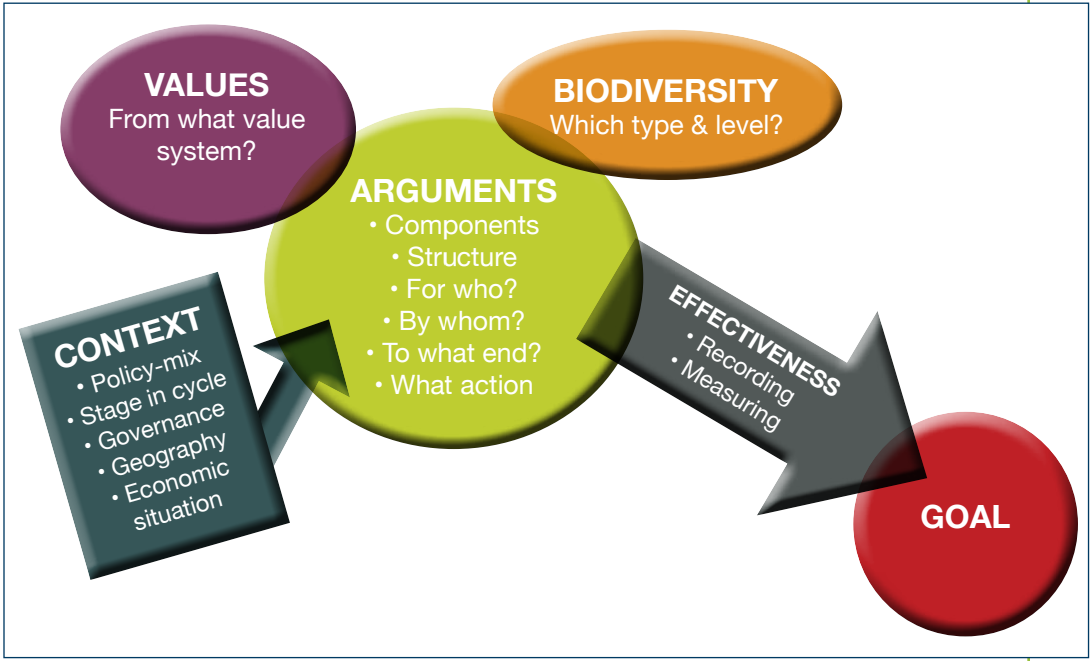

***Figure 1**. The BESAFE project framework*
(source: Bugter, R. BESAFE project: http://www.besafe-project.net)

✶ Collaborate: The FP7 HighARCS project worked with local communities and key stakeholders to produce integrated action plans to address conservation, livelihood and policy concerns in Asian communities by focusing on the conservation and sustainable development of highland aquatic resources. In the BiodivERsA CONNECT project, researchers collaborated with a government agency in the Netherlands to develop research questions and a protocol to produce findings that directly informed policy processes about land use and natural-resource protection in and around a freshwater lake. The BiodivERsA ECOCYCLES project collaborated with stakeholders to develop rational approaches to addressing a conflict over the management of rodent outbreaks on agricultural land. This also highlighted research needs to develop evidence-based options, which led to further collaborative work after the project was completed. The FP7 HUNT project investigated the ecological, social, economic and cultural aspects of hunting to understand the role of this activity in the sustainable management of biodiversity, and put in place National Consultative fora in each partner country whose remit was to inform the direction of the research programme and to ensure the relevance of the findings for policy and practice.

CASE STUDY

REASONS TO ENGAGE STAKEHOLDERS: EUROPEAN BEECH FORESTS FOR THE FUTURE (BEFOFU)

The BiodivERsA BeFoFu project evaluates the ecological and institutional background for Beech forest conservation and management in Europe, taking into account the additional challenges arising from global change. Besides various national and sub-national activities at the European level, Beech forest conservation is predominantly addressed by the EU Natura 2000 network of protected areas. Across the EU, the implementation process of Natura 2000 has been impaired by conflicts and diverging stakeholder interests regarding forest management. The financing of Natura 2000 protected areas, particularly on privately owned land, remains a crucial issue.

WHY WAS STAKEHOLDER ENGAGEMENT IMPORTANT?

BeFoFu deals with a politically relevant and controversial topic – the implementation of Natura 2000 in Beech forests. The results of the research undertaken are of high interest for policy stakeholders. In the political science context, BeFoFu depends on the willingness of stakeholders to share their knowledge with researchers. There is a mutual interest from stakeholders and policy makers to engage in a dialogue process to ensure divergent interests are taken into account when implementing policy and forest management to ensure Beech forests are effectively conserved at the local level

PERCEIVED BENEFITS OF STAKEHOLDER ENGAGEMENT TO THE RESEARCH

The major benefits of the stakeholder engagement are:

- It provides a very good overview about the current 'political environment' the project is embedded in and how it can contribute to better knowledge that can be used to inform scientific research, policy decisions, account for local stakeholder interests and realise wider social benefits from European Beech forests.
- It offers an update about on-going policy processes related to Natura 2000 and forests.
- It identifies possible avenues for communicating project results.

WHAT HAS BEEN OR WILL BE THE IMPACT OF THE RESEARCH?

The long-term impact and legacy will be:

- A better understanding the likely effect of different (local) policies and management strategies on Beech forest biodiversity.
- Revealing the likely impacts of climate change.
- Greater knowledge on the effects of EU biodiversity policy at different levels.
- Contributing results to the discussion on the development of EU biodiversity policy beyond 2010.

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How to identify stakeholders

›› Case studies

Identifying stakeholders

Assess and prioritise stakeholders

Identifying stakeholders - Problems that may be encountered

Ecosystem service provision from coupled plant and microbial functional diversity in managed grasslands

Part 3

HOW TO IDENTIFY STAKEHOLDERS

“ Identify, categorise and understand relevant stakeholders ”

Having established clear reasons for engagement, the next step in the stakeholder engagement process is to identify which stakeholders need to be engaged. Selection will depend upon the focus of research, its potential outcomes and impacts, available resources, the objectives of the engagement, as well as the willingness or ability of the stakeholders to engage[1].

Evidence suggests that participant selection strongly determines the outcomes of an engagement process[2-5]. Therefore, it is important to ensure effective representation of relevant stakeholders, including those with high levels of interest in the research who may have low levels of influence, in addition to strategic stakeholders with power, motivation and means to implement research outcomes[3]. There is evidence that demonstrates that effective representation can increase levels of learning and trust between participants and that unrepresentative or restrictive participant selection may lead to fewer positive social outcomes, and may even lead to increased conflict[5].

Stakeholder identification can be considered to have three stages[3]:

Stage 1: Identify all potential stakeholders and stakeholder groups.

Stage 2: Assess and prioritise the stakeholders.

Stage 3: Develop an understanding of your stakeholders.

The outcomes from this three stage process can then be considered by the project team in order to ascertain what level of engagement is required, the timing and role of the engagement, and ultimately which methods of engagement are to be adopted.

STAGE 1: WHO ARE YOUR STAKEHOLDERS?

In order to identify stakeholders it is necessary to consider all people, or groups, that are affected by, who can influence, or may have an interest in the research[6]. In this first stage it is important to be inclusive, identify all stakeholders, and consider not only what they may be able to contribute to the project but also what will motivate them to become involved (i.e. what they can gain from engaging). In some cases, very few or even no stakeholders may be identified[6]. Stakeholder identification may be done by the research team alone, or in collaboration with other colleagues, organisations and cross-sectoral stakeholders, to ensure key groups are not missed. Participation of stakeholders in the identification process itself can help define and refine the scope of the issues being considered, and provide more-comprehensive information about who might have a stake in those issues[3].

The stakeholder identification process should be reassessed regularly throughout the project to ensure that no groups or individuals have been missed. This may

involve identifying new stakeholders that need to be engaged as the research progresses or as stakeholder needs and priorities change over the course of the research[7]. In the early stages of the project it could be beneficial to enter into dialogue with scientists working in other disciplines and/or groups or individuals who are likely to oppose the research, as this may help identify potential conflicts that could arise. It is important to ensure that groups or individuals that are considered to be potential sources of conflict are not left out of the engagement process simply because they have opposing views.

It is useful to identify stakeholders in a systematic fashion, as far as possible, by considering all aspects of the project's area of influence throughout the entire cycle. Broadly speaking there are two approaches to systematically identifying stakeholders: 'ex-ante' and 'ad-hoc'. Using both approaches, the initial identification of stakeholders is often done using secondary data sources (e.g. census data, providing information that could help categorise stakeholders by age, gender, religion or place of residence). Secondary data may be used to select participants to start mapping stakeholders more systematically[8-10]. Following the ad-hoc approach, the identification of stakeholders is typically an iterative process, eliciting feedback from new stakeholders as they are identified, who in turn identify other new stakeholders. Researchers may follow a 'snowball sampling' approach until no new stakeholders are identified[3,10,11].

Alternatively, following the ex-ante approach, stakeholders are identified in advance, in relation to likely stakeholder categories[7,8,12]. For example, it may be helpful to consider particular sectors or groups of relevance (e.g. public sector, private sector, voluntary groups, academics, researchers) or consider specific roles or functions of different actors (e.g. data users, funders, policy makers, local communities)[13,14]. It may be useful to categorise stakeholders like this from the outset if there is a need for stratifying a sample of stakeholders for conducting questionnaires or interviews later in the project. The categorisation can also be used as a checklist to help ensure that representatives are present from each main group at events associated with the research. This can be particularly useful if there are very limited resources for engaging with stakeholders, as only a small number of representatives of each stakeholder group may need to be invited to events. The process of identifying stakeholders may end here, or teams may wish to verify their categories with stakeholders (e.g. with one key stakeholder per category) to check for missing stakeholders and further refine their categorisation[9].

Example categories include[7,12]:

- Government departments, politicians, policy makers and advisers (local, national, international); other national or international policy makers or policy groups (e.g. European institutions, environment agencies)
- Non-governmental organisations (NGOs)
- Business and industry
- Local communities
- Landowners and managers
- Professional groups (e.g. vets, surveyors etc.)
- Scientists and researchers working in relevant disciplines; Scientists and researchers working across different disciplines
- Educators
- Students
- The media
- The general public

Other useful methods for identifying key stakeholder could include[15]:

- Brainstorming with other organisations that have been involved in similar activities or those working in similar locations
- Consulting with colleagues to share knowledge about who may have an interest in the research
- Developing a 'mind map' that can be used to identify suitable stakeholders; assessing secondary data (e.g. historical records, media articles)

- Utilising government statistics and data (e.g. census information)
- Initiating self-selection by promoting the engagement process and encouraging individuals with an interest to come forward
- Using 'snowball sampling' techniques, whereby one stakeholder identifies further stakeholders until no additional new stakeholders are identified
- Utilising existing lists of organisations in order to identify specific groups, networks and agencies who represent relevant elements of society
- Consulting with forums used by government and other organisation (e.g. local authorities, town councils, emergency services etc.).

CASE STUDIES
IDENTIFYING STAKEHOLDERS

Pre-existing networks are hugely valuable for beginning the process of stakeholder identification for a project and these were an important starting point for all the case study projects (see Appendix 1 for details). If researchers are known and trusted within their field, stakeholders will view more favourably the opportunity to engage in a research project. The FP7 BESAFE project began by asking stakeholders who participated in a previous research project whether they would be interested in participating in BESAFE. Later on in the project, stakeholders were asked to suggest other suitable participants. The BiodivERsA INVALUABLE project also used former stakeholder partners as a platform to identify new stakeholders using a 'snowball' approach where individuals are identified by current contacts, who then identify further contacts until a sufficient group is selected or no further people are identified. For example, INVALUABLE researchers sought stakeholders from the French agency for Development (AFD) and the French ministry for Foreign affairs, and did so by consulting colleagues and stakeholder contacts from previous projects or meetings who were able to trace the most suitable individuals, and make introductions where necessary.

The FP7 FORCE project included an in-depth study of livelihood and community dependence on coral reefs in multiple communities across four Caribbean countries. Prior to commencing fieldwork, a scoping phase was undertaken to identify community boundaries and key stakeholders. Information was collected from stakeholders to determine the boundaries of the communities, and thus the area included for data collection. This process included asking people where they thought the boundaries were, either on maps or by identifying physical demarcations, and discussing these until general consensus was reached amongst participants. The stakeholder identification stage was carefully planned and completed during the scoping phase prior to data collection, but this activity also continued throughout the fieldwork. One method to identify people for interview included using matrices to determine the range of people and livelihoods within each community (e.g. coral reef resource users, such as fishers and tour operators), as well as other groups of people in the community (e.g. business owners, farmers, civil servants, etc.). Where possible, individuals were identified before commencing fieldwork, based on prior knowledge and existing informants (e.g. people from local organisations known to the researchers). A snowball method was then used to build up a list of other individuals in the matrix that could be contacted for interview.

It can be useful to tabulate information on stakeholders[14]. Doing this enables researchers to order and group stakeholders (e.g. by sector or expertise) and ensures that researchers explicitly consider and categorise how the identified stakeholders would contribute to the project and why they might wish to become involved. Table 3.1 shows an example containing details of the types of potential stakeholders, reasons to involve them, and reasons why they might wish to engage with the project. Applicants should also explain why not engaging with some stakeholders when relevant.

Table 3.1

Example of stakeholder identification, categorisation, reasons for engagement, and potential stakeholder benefits for engaging. A template of this matrix can be downloaded from http://www.biodiversa.org/577**.**

STAKEHOLDER	CATEGORY (E.G. GOVERNMENT DEPT., GENERAL PUBLIC, NGO, POTENTIAL PARTNER)	REASONS TO INVOLVE THE STAKEHOLDER(S)	WHY THE STAKEHOLDER MAY WANT TO BE INVOLVED (BENEFITS)
Local authority	*Government policy maker*	Strengthen science-policy interface and ensure relevance of research outputs.	Opportunity to develop better policies based upon rigorous scientific knowledge. Better transparency of decisions made.
Local business	*Private sector businesses*	Sharing technical expertise and potential contribution of resources to project.	Possibility of networking with potential new customers through the engagement process. Publicity and Corporate Social Responsibility opportunities. Improving efficiency and profitability of operations.
Environmental charity	*NGO*	Better access to available data, potential contribution of resources and expertise to project.	Interest in using the new data produced. Increased local publicity through engagement. Opportunities for partnering in future projects.

Important points to consider when identifying stakeholders:
Who is responsible for making decisions that might affect the research?
Are there policies emerging or in existence that will benefit from or be affected by the research? If so who needs to be informed?
Which individuals are likely to be affected by the outputs of the research? Who, although not directly affected, may be interested in the results of the research?
Are there stakeholders that have been involved in similar projects on previous occasions (some of these may have been identified in Stage 1)?
Which groups or individuals may be able to provide relevant information, equipment or resources?
Who is likely to have a negative view of the research?
Which stakeholders is it essential to involve? Who is it preferable to involve? Who needs to be consulted? Who needs to be informed?
Which parties are likely to be the most influential?
Who will be critical to the final delivery?

STAGE 2: ASSESS, ANALYSE AND PRIORITISE STAKEHOLDERS

The first stage of the stakeholder identification process detailed above should generate a comprehensive list of all relevant stakeholders and stakeholder organisations, along with an indication of the reasons for engagement. The second stage is to assess and analyse stakeholders in order to prioritise them in relation to the necessity of engagement. Not every stakeholder or stakeholder group needs to be involved to the same degree, or at the same time and the same stakeholder may be of differing relevance at different stages of the research or when working with another group. By considering the relevance of the stakeholders to the project it is possible to establish which might be best to contribute and which will be affected, and therefore critical to involve[13].

CASE STUDY

ASSESS AND PRIORITISE STAKEHOLDERS

Identifying stakeholders often results in a complex list of people and organisations that research teams may never have capacity to engage fully with. Therefore, it is often necessary to prioritise specific individuals for engagement. In the FP7 MOTIVE project, which involved case studies across Europe, a guidance document was prepared to aid the identification of stakeholders who were categorised in three stages. The table below shows the template used in the project. The initial actions were:

- Creating a list of stakeholders
- Identifying their interests and roles in relation to the project
- Prioritising them according to their importance to, and influence over, the project.

A set of guiding questions was used to establish the importance and influence of stakeholders, for example 'how will stakeholders be affected by the project results?' and 'does the stakeholder have important connections to policy?'. Stakeholders were further classified according to the typology of who should be 'involved', 'consulted' and 'informed'.

One of the objectives of MOTIVE was the production of an Adaptive Forest Management Toolbox, and the stakeholder analysis was also used to identify potential end users, who were then categorised according to the ways in which they might want to be involved in developing the Toolbox. This guidance allowed researchers in the different case studies to follow a project protocol without necessarily having had previous experience of stakeholder engagement.

Stakeholder (by sector)	Contact/ position	Roles and interests	Level of engagement	Importance Influence
e.g. Private sector				
Stakeholder A	Person A	Owner/ manager	Involved/consulted	High
Stakeholder B	Person B	Consultant	Informed	Low

There are many ways of analysing or mapping stakeholders; most involve further categorising stakeholders in some way. The most commonly used approach is to categorise stakeholders in relation to their relative levels of interest and influence/relevance[16-18]. Figure 3.1 plots stakeholder influence (i.e. whether they can make useful contributions and positively influence the research or block the research, and whether they will be affected by the outcomes), against the interest of the stakeholder in the project.

Stakeholders are plotted according to whether they have a high or low interest in, and high or low influence on, the project. The four boxes each represent a 'level' of engagement, from the lowest level ('**inform**'), through the middle levels ('**consult**', and '**involve**') to the highest level ('**collaborate**'):

✳ Stakeholders in the '**collaborate**' box (high interest – high influence) are those with which it is likely to be most beneficial to engage. They may be able to supply relevant information, permissions and resources, or may be markedly impacted by the eventual outcomes.

✳ Those in the '**involve**' box are highly influential, but have little interest in the research or low capacity/ resources to engage. Because of this, they may have significant influence over the success of the project, but may be difficult to engage in the research process. As such, particular effort may be necessary to engage this group in the research and therefore effort should be made as early as possible in the research process.

✳ Those in the '**consult**' box have high interest but low influence and although by definition they are supportive of the research, they lack the capacity to significantly help the project and deliver impact; however, they may become influential by forming alliances with other more influential stakeholders. These are often the marginal stakeholders that may also be considered 'hard to reach', and that might warrant special attention to secure their engagement and to empower them to engage as equals in the research process with more influential participants. The low level of influence held by this group is often used as a justification for excluding them from the research process.

✳ Those in the '**inform**' box are stakeholders who have little interest in or influence over research outcomes and it can be argued that when there are limited project resources there is less need to consider them in much detail or to engage with them.

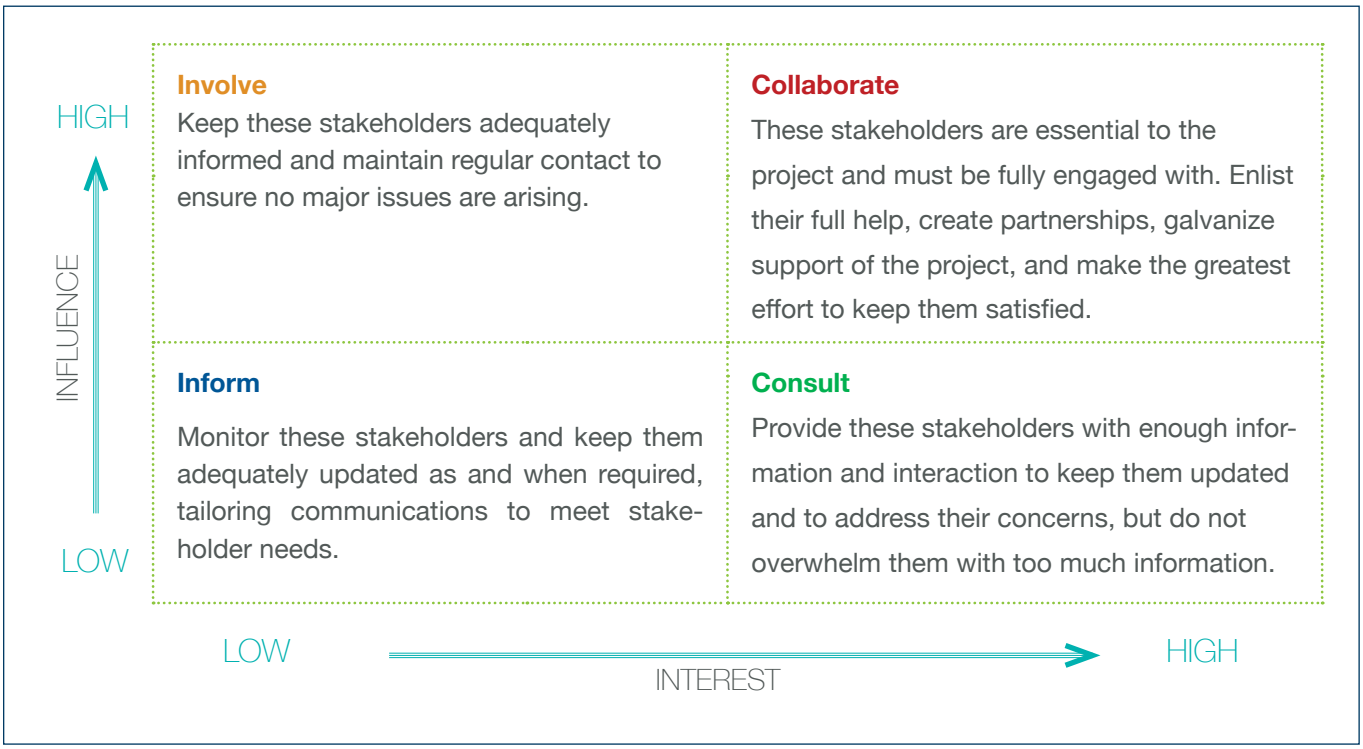

Figure 3.1 *Plotting stakeholder influence against interest. Stakeholders are assigned to a category according to their likely contribution and interest in the project. The boxes provide details of the levels of engagement. Figure has been adapted from work conducted by the National Health Service (UK)[19] and the University of Edinburgh[7].*

Using this approach, it is then possible to better tailor levels of stakeholder engagement to different groups, for example:

- ***Inform*** – adequately update interested third parties with balanced and objective information to assist them in understanding the problem, identifying alternatives, recognising opportunities and discovering potential solutions. Information must however, be tailored to stakeholder needs.

- ***Consult*** – obtain feedback from and provide adequate information to interested third parties on relevant aspects of the design, methodologies, analysis, alternatives, decision making, and desired outcomes of a project. Care should be taken not to overwhelm stakeholders with information outside of their area of interest.

- ***Involve*** – work directly with interested third parties throughout the project lifecycle (see Figure 4.1) to ensure that their concerns and aspirations are understood, considered and, where appropriate, incorporated into decision making.

- ***Collaborate*** – work in partnership with individuals, or groups, in relevant aspects of the decision making process, including the development of alternative methods and the identification of preferred solutions or outcomes to ensure these stakeholders remain fully satisfied.

Individual stakeholders or stakeholder groups may be plotted in relation to their relative influence and interest in the research. Alternatively these or other variables may be represented using colours or circle/font size given to each stakeholder[1]. Figure 3.2 provides a hypothetical example in which five stakeholders are placed on an interest-influence matrix, with the size of circle around each stakeholder denoting their relative expertise. The choice of components to map depends on the research project, the stakeholders selected, and the desired aims of the engagement. Adopting this style of approach allows all three factors to be simultaneously considered and enables the relative benefit of engagement to be clearly displayed in relation to the size and placement of the circles.

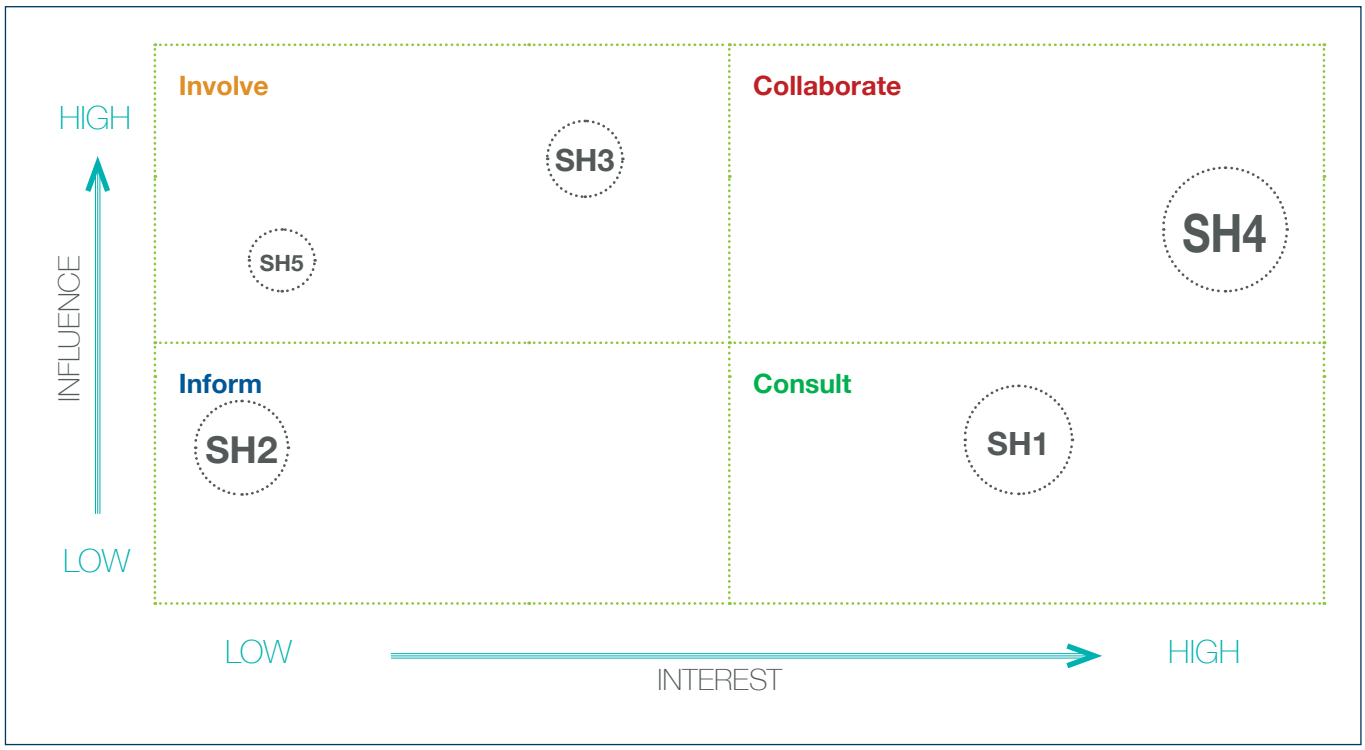

Figure 3.2 *Interest-influence matrix, with relative expertise reflected by the size of the circle surrounding the stakeholder (e.g. SH1 = Stakeholder 1).*

Table 3.2

An extendable interest-influence matrix with examples of additional columns that may be added to capture more detail about each stakeholder than is typically possible using graphical techniques. A template of this matrix can be downloaded from http://www.biodiversa.org/577

Name of Organisation	Interest (High (H)/ Medium (M)/ Low (L))	What aspects of the research are they likely to be interested in?	If interest is L/M, how might we motivate engagement with the research?	Key messages from your research for this group	Influence H/M/L	Comments on influence (e.g. times or contexts in which they have more/less influence over the outcomes of your research)	Key contact(s) and best way of contacting them

Although it is the most commonly used stakeholder mapping tool, interest-influence matrices have been criticised for being simplistic. For example, there are many other factors that might usefully inform the categorisation and prioritisation of stakeholders, such as the nature of their interest in the project or alliances or conflicts between stakeholders. For this reason, Reed *et al.*[3] propose the use of 'extendable matrices' that not only consider levels of interest and influence, but also attempt to characterize the nature of those interests and document reasons for the level of influence that is ascribed (e.g. considering whether a stakeholder holds more, or less, influence in different contexts or at different times). An example is given in

Table 3.2.

A number of visual tools may be used to help map stakeholders, for example constructing a mind-map (an example is given in Figure 3.3). The first step in developing a mind map is identifying the major groups of users that make up the centre of the map, and then progressing towards greater detail as you move towards the outer edges[15]. Alternatively, Chevalier and Buckles[8] recommend placing stakeholders in a "rainbow diagram' that classifies them according to the degree they can affect or be affected by the research (Figure 3.4).

Figure 3.3 *Example of stakeholder mind map, adapted from Forestry Commission[15].*

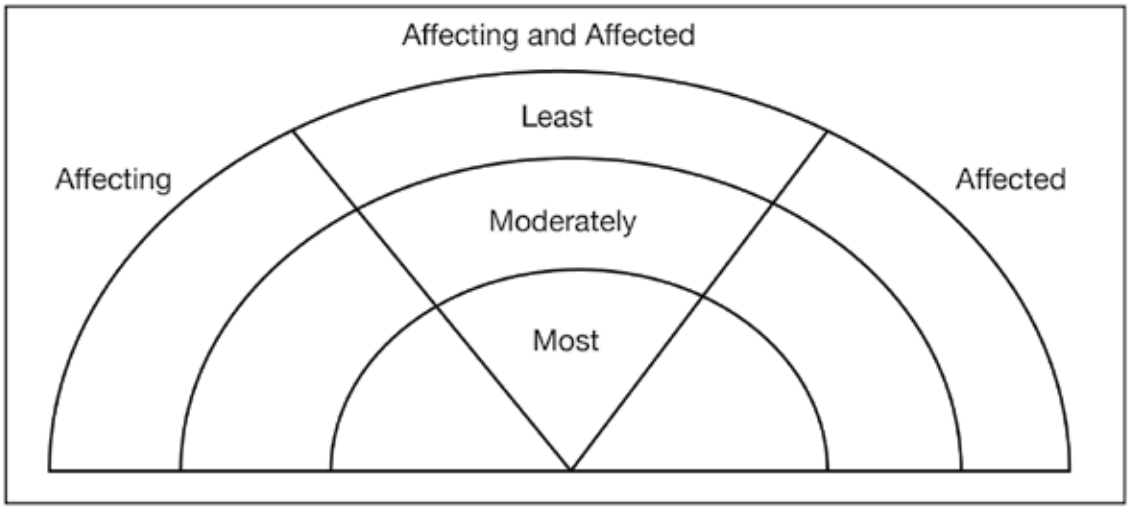

Figure 3.4 *Rainbow diagram for classifying stakeholders according to the degree they can affect or be affected by a research project[8].*

When identifying stakeholders for inclusion it is important to keep in mind whether this process will be open to stakeholder scrutiny. For example, if stakeholders were to view mapping diagrams and tables it is important to consider how they may react to the assumptions being made about them and how this could impact working relationships. In cases where full transparency is needed it may be considered more appropriate to involve stakeholders in the mapping process and provide opportunity for them to assign themselves into the different groups. It may also be necessary to agree mutually acceptable terminologies and definitions for the four levels of engagement.

In order to consider a stakeholder's interest in, or relevance to, a project, the project team should always consider:

- What interest does the stakeholder have in the project?
- What influence can the stakeholder have on the project?
- How may the stakeholder be impacted or affected by the project?
- How beneficial would engagement of the stakeholder be to the project and why?

Using the previous tools to map and prioritise stakeholders provides a clear first assessment of the types of stakeholders the project will need to engage with, and to what extent. However, it is also important to remember that different levels of engagement may be necessary with particular stakeholders at different times of the project. This is discussed further in Parts 4 and 5 of this *Handbook* on timing and methods of engagement.

STAGE 3: UNDERSTAND YOUR STAKEHOLDERS

Having begun to prioritise the relevant stakeholders, it is helpful to obtain a greater understanding of their motivations, interests, expertise and capacity to engage when considering how and when to engage with them. The following has been adapted from work undertaken by University of Edinburgh[7] and AccountAbility[20] and provides some key points the project team should consider when understanding relevant stakeholders:

- Is there an existing relationship between the project and the stakeholders? Do relationships already exist between stakeholders?
- What knowledge do the different stakeholders possess that may be relevant to the project?
- What views are the stakeholders likely to hold about the project and its outcomes, will these views be positive or negative? Is there the potential for any conflict arising amongst stakeholders or between stakeholders and the project?
- What are the appropriate means of communication and will this need to be adapted in order to reach certain groups or individuals?
- Is there a willingness to engage; if not, why not, and how could this be overcome? Are there any barriers to participation and/or engagement (e.g. technical, physical, linguistic, geographical, political, time, information or knowledge)?

The type of information described above can be tabulated; an example of how this could be approached is shown in Table 3.3. This builds on the extended interest–influence matrix (Table 3.2) approach. Researchers may wish to combine these into a single matrix to save time. Such matrices can be extended to consider a range of factors that may help to categorise and engage effectively with stakeholders. For example: identifying any important relationships between stakeholders (e.g. coalitions or conflicts); information about how best to approach and engage with different stakeholders; contact information; and an assessment of the potential impacts or effects the research may

have on the stakeholder[1,7,19,21,22].

Understanding relationships between stakeholders can be extremely useful in the process of engagement. Whilst there is rarely time available to do so in depth, there are a range of methods available to do this should researchers wish to do so. These methods include those to analyse social networks, map stakeholder perceptions and values, and methods to assess and analyse conflicts between stakeholders (discussed further in Part 7 of this *Handbook*). These methods are generally employed once stakeholders have been categorised in order to understand how different stakeholder groups interact with one another, and to identify specific individuals or organisations that may play an important role in diffusing knowledge or practices within and between different groups of stakeholders. These methods help to clarify opportunities and risks of engaging with certain stakeholders, identify the values and priorities of different groups and how this may influence engagement.

The completed table should provide a representative list of relevant stakeholders, and the levels of engagement required. The stakeholders themselves could be consulted for their views (when appropriate) to ensure they agree with the details entered; this may also prove to be an effective method for establishing an open and transparent working relationship. The table used to understand stakeholders should be reviewed periodically throughout the project cycle for a number of reasons, including: stakeholders may request greater involvement at different stages of the project to those originally identified by the project team; new stakeholder groups may request involvement; a need may arise to engage over previously unforeseen subject matter or issues; there may be a shift in the direction of the research or the outcomes which needs to be communicated[13].

This analysis process goes some way towards indicating the varying levels of engagement required in the projects. The outcomes of the 'identifying stakeholders' process can be used to consider the types of engagement required and/or the timing and role of the engagement process. By developing a sound understanding of the stakeholders, the appropriate stage(s) to engage, types of suitable engagement activities, and any potential barriers that exist which could inhibit engagement, become clearer.

Table 3.3

Understanding your stakeholders. Examples of typical stakeholders and possible overall levels of engagement have been provided. The overall level of engagement will depend on the results of the mapping exercise. Stakeholders can be grouped according to the overall level identified and/or the level can be depicted through the use of certain colours or type face, as shown in this example matrix. A template of this matrix can be downloaded from http://www.biodiversa.org/577

	Stakeholder	Existing relationship	Relationship with other stakeholders	Knowledge of the project	Views on the project	Best means of communication	Willingness to engage	Capacity to engage
Collaborate	Government policy makers							
	Scientists from same discipline							
Involve	Landowners							
	NGOs							
Consult	Businesses							
	Students							
	Scientists from different discipline							
	Local community							
Inform	General public							
	Media							

SUMMARY OF THE THREE STAGES OF STAKEHOLDER IDENTIFICATION

STAGE 1: WHO ARE YOUR STAKEHOLDERS?

- Identify stakeholders with research team only or identify stakeholders in collaboration with a small number of cross-sectorial stakeholders.
- Use ex-ante (identifying stakeholders in predefined categories) or ad-hoc (identifying new stakeholders iteratively based on recommendations from existing stakeholders) approach to systematically indentify all relevant stakeholders.
- Re-assess who has a stake in your research regularly throughout the research cycle.

STAGE 2: ASSESS, ANALYSE AND PRIORITISE STAKEHOLDERS

- Categorise stakeholders according to their interest and influence and decide if you should collaborate with, involve, consult or inform them.

STAGE 3: UNDERSTAND YOUR STAKEHOLDERS

- Seek information about stakeholders' relationships with orther stakeholders, knowledge and attitudes towards the research, willingness and capacity to engage and best ways of communicating with them.

CASE STUDY

IDENTIFYING STAKEHOLDERS – PROBLEMS THAT MAY BE ENCOUNTERED

In practice, actually getting effective engagement with stakeholders can be challenging. There are numerous examples of 'stakeholder fatigue', and challenging power dynamics from biodiversity research. Doing a careful stakeholder analysis, following the three stages outlined in this *Handbook*, can help identify and motivate engagement from those stakeholders who are most relevant to the research. But this is not always a simple process. A researcher from the FP7 HUNT project highlighted the challenge of maintaining the involvement of stakeholders over the course of a research project, and explained how strategic stakeholder identification, where careful thought is given to which individuals from stakeholder organisations are invited, can help mitigate this.

A National Consultative Forum (NCF) was set up in each of the research partner countries whose remit was to meet annually to contribute to research development and dissemination. There were frequently changes of representatives participating in the NCF, which presented a barrier to strengthening relationships and achieving a sense of common purpose among the groups. It was suggested that this was partly due to 'stakeholder fatigue'. To deal with this issue, researchers may need to balance the influence and expertise of stakeholders with their interest and commitment to the project, during the stakeholder identification process.

CASE STUDY

ECOSYSTEM SERVICE PROVISION FROM COUPLED PLANT AND MICROBIAL FUNCTIONAL DIVERSITY IN MANAGED GRASSLAND

Given increasing political and public concern for the environment, and resulting changes in legislation and policy, European agriculture is challenged to provide ecosystem services, such as carbon storage and protection of water quality, along with biodiversity conservation and maintenance of economically viable production. The BiodivERsA VITAL project studies mountain grasslands where abandonment of manuring, mowing and grazing, or conversely management intensification, has altered plant species and functional diversity, soil microbial activities and diversity, soil nitrogen transformation processes and soil fertility maintenance. These changes have the potential to fundamentally shift the ecosystem services that these agro-ecosystems can provide, and thereby the livelihood and development potential for local economies. Research conducted at three sites in the French Alps, Austria, and the UK, provides a representative range of management and natural conditions.

HOW WERE STAKEHOLDERS IDENTIFIED?

- Regional experts and local stakeholders for the ecosystem service assessment were selected by reputation or recommendations.
- For scenario workshops held in Austria, farmers were selected based upon differing farm structure characteristics (full-time/ part-time, traditional/ modern, conventional/ alternative production etc.).
- In France the scenario development involved a first stage with regional experts who represented different sectors and a second stage with eight local farmers from the Villar d'Arène municipality.

WHAT DIFFERENT TYPES OF STAKEHOLDERS WERE IDENTIFIED?

- Regional experts working for governmental institutions.
- Regional institutions.
- NGOs that represent consumers of their sectors of activity (e.g. agriculture, nature conservation, tourism or rural development) and act as decision makers.
- Local beneficiaries who are consumers (e.g. farmers and inhabitants).
- Producers (e.g. farmers).

HOW MANY GROUP AND INDIVIDUAL STAKEHOLDERS WERE INVOLVED?

- Regional experts: 22 (agricultural sector), 23 (non-agricultural sector).
- Local beneficiaries: 35.

Role playing game with farmers from Villare d'Arêne (Hautes Alpes, France), VITAL project.

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When to engage with stakeholders

› Mapping stakeholder roles to different stages of the project lifecycle

›› Case study

When to engage

Part 4

WHEN TO ENGAGE WITH STAKEHOLDERS

"Assessing the most beneficial times to engage with different stakeholders and stakeholder groups, including ways to adapt as the project develops"

Ways of identifying, mapping and deciding on levels of engagement with different stakeholders are covered in Part 3 of this *Handbook*. Methods for engagement are covered in Part 5. However, actual levels of engagement are likely to vary at different times throughout the lifecycle of the project, depending on the possible and actual contributions of stakeholders at different times. Most stakeholders are likely to be involved at discrete times throughout the project, rather than all the time. Involvement of all stakeholders throughout the whole project, from inception to dissemination of final outcomes, would be costly in terms of time and resources, for both the project and the stakeholders.

Although much can be done to adapt research outputs to feed into the events and issues of relevance to different stakeholders, timing (whether good or bad) will always influence the extent to which research findings are likely to be perceived as relevant by stakeholders. Timing may also affect the way that knowledge from research is used in the decision-making process. For example, at certain times during research that is ultimately to be used to formulate policy, new opportunities for policy-makers may emerge (e.g. feeding into election manifestos). At other times, research may help address specific challenges faced by decision-makers (e.g. a pest or disease outbreak), and at other times, research may simply be used to justify or jeopardize existing opinions or policy positions if research findings that are consistent with the decision arrive after the decision has been made[1].

In order to maximise the benefits of stakeholder engagement, it is useful to consider the timing of the most-appropriate contributions that each stakeholder might make towards the project; the roles they might adopt; and when these are critical to the success and impact of the research. It is also useful to assess the possibility of temporary or complete disengagement, for whatever reasons, and how this can be managed and how it will impact on the outcomes of the project.

The desired contributions or roles that stakeholders are expected to play can be assigned to various stages of the project, keeping in mind that roles may vary as the project progresses. For example, stakeholders assisting in early development of the project will be involved at inception, whereas those involved with disseminating or using results will mainly be involved at a later stage.

The research project lifecycle is represented in Figure 4.1. This is a simplified view; in reality stages might have a different order, or overlap, and feedback loops might exist in which learning and modifications are a part of the research process. In addition, projects might continue beyond the initial funding period, either because of an additional phase of funding or if stakeholder-led monitoring is undertaken. Longer term relationships with stakeholders might be an important requirement, especially if new projects in the same study area are possible, and this might also influence the level and timing of involvement of particular stakeholders.

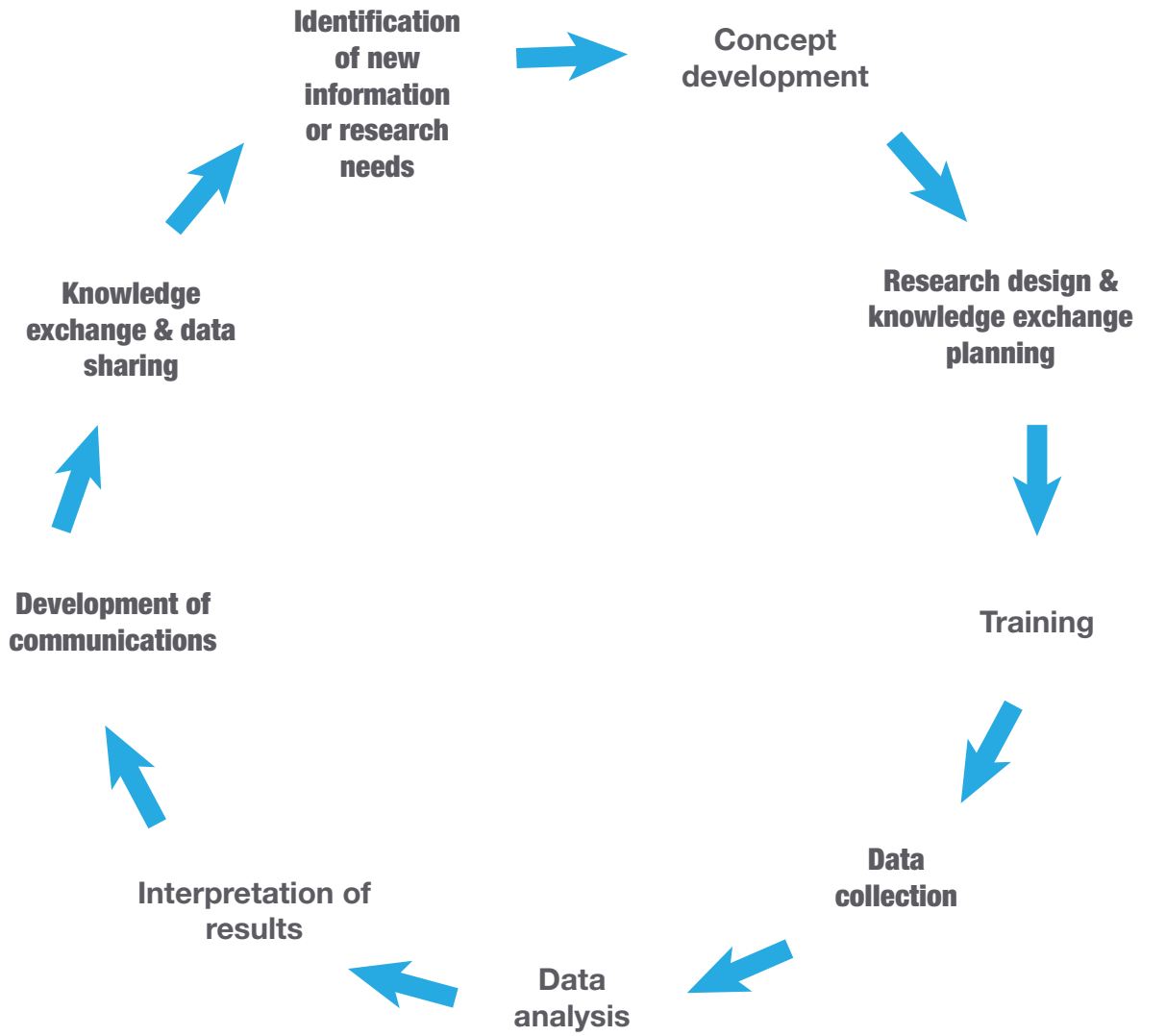

Figure 4.1 *Simplified diagram of a project lifecycle. Stakeholders could be engaged at any or all of these stages depending on the type of project and desired roles, but the most important stages for stakeholder engagement are shown in bold.*

MAPPING STAKEHOLDER ROLES TO DIFFERENT STAGES OF THE PROJECT LIFECYCLE

Once stakeholders are identified and their possible roles defined, the stage in the research cycle where these roles might be most beneficial can be identified. The impact of not gaining engagement with specific stakeholders can also be assessed, and the risks associated with loss of engagement and ways of managing this set out.

Table 4.1 summarizes the kinds of contributions or roles that stakeholders might make or take in each stage of a project.

Table 4.1

Definitions of possible stakeholder roles/contributions during the life cycle of a project (adapted from Jolibert, 2011[2]).

Project stage	Stakeholder role or contribution
Before	✳ Help to define the project concept and project design/research strategy, including identifying useful potential outcomes and common interests ✳ Identify other potential stakeholders and possible roles ✳ Help define the best governance approach for stakeholder engagement ✳ Identify possible scope of their own contributions, including motivation, and associated limitations ✳ Highlight possible risks and potential for conflicts to arise ✳ Advise on knowledge exchange requirements
Before and during	✳ Establish agreements on access to study sites ✳ Provision of resources – for example, equipment, funding, staff time ✳ Defining project plans, including stakeholder engagement planning ✳ Co-design and development of conflict resolution approaches, if relevant ✳ Networking and awareness raising with non-contributory stakeholders
During	✳ Assist with training of other stakeholder to enhance delivery or participation ✳ Data provision, including capturing new data (monitoring) ✳ Prediction and modelling – informing development of scenarios and models, or participation in data analysis ✳ Review project success, including stakeholder engagement approach ✳ Assist in defining and developing tools ✳ Conflict resolution, if relevant
During/ after	✳ Define, develop and help deliver knowledge exchange activities and publications ✳ Implementation of results – testing outputs of the research (e.g. tools, new methodologies, strategies) ✳ Advise on data exchange requirements
After	✳ Publicity, promotion, via channels such as websites, academic materials, research reports, newsletters, books, guidelines, social media and the general media (newspapers, radio and television) ✳ Review project success, including stakeholder engagement approach ✳ Identify future information, tools and research needs ✳ Develop stakeholder-led monitoring and networking beyond life of funded project

Not all of the roles identified in Table 4.1 will necessarily be appropriate for every project, and other roles might be identified. In some instances more than one stakeholder may be identified to undertake some roles and in other situations an individual stakeholder or stakeholder group may well carry out multiple roles throughout the project cycle.

It is important to work with stakeholders to assess and plan their contributions and sharing initial ideas using a draft plan, which allows a more systematic assessment, can be helpful.

However, stakeholder interaction is an important consideration that can complicate the timing of engagement and the roles that some stakeholders actually take. In some projects, especially those purposefully tackling controversial research, for example related to wildlife management, it will be critical to build trust, and a broader range of engagement methods will be needed. For some tasks, separate meetings with single stakeholders or groups might be required to help develop relationships and avoid conflict, as well as bringing different stakeholders together to allow exchange of views. Timing of engagement might differ when dealing with stakeholders in conflict and more time and resources will be required.

CASE STUDIES
WHEN TO ENGAGE

PLAN EARLY ENGAGEMENT

Most researchers from the case studies recognised the value of engaging stakeholders as early in the project as possible. Researchers on the BiodivERsA FIREMAN project involved stakeholders at the proposal writing stage. This was viewed very positively by a stakeholder from the Peak District case study in England who felt that this early engagement gave the stakeholders a sense of ownership of the project, as they were able to influence the design of the research programme.

Other projects indicated that they would have liked to have been able to have stakeholder input at an early stage, but this was not possible due to limited time and funding during the proposal writing phase. It is advisable to carry out a pre-proposal scoping exercise to allow stakeholder input into project development where possible. Once the proposal is written, there can be limited flexibility to adapt the research programme to meet the requirements of stakeholders.

This issue was encountered after the FP7 HUNT project received funding. Here, stakeholders viewed the project as an opportunity to pursue certain avenues of interest to them, which could not always be accommodated within the constraints of the project. The expectations of stakeholders must be carefully and early managed to ensure they are aware of their role in the project and the extent to which they may influence the research.

ASSESS STAKEHOLDER ROLES

Researchers on the FP7 MOTIVE project decided what level of engagement would be appropriate for each stakeholder group based on their stakeholder analysis, which included understanding the interest and influence of stakeholders in the project and the type of role they may play in the research (see Part 3 of this *Handbook*). Engagement was categorised according to three broad levels:

- *Involve* in design and implementation

- *Consult* about key elements such as scenarios and indicators, or for data collection

- *Inform* about the project and its outputs.

Stakeholders were given a choice about their role in the engagement. Some stakeholders had knowledge that was directly relevant to the proposed models for adaptive forest management and agreed to be involved in their development, while others preferred to be consulted during specific stages of development or informed later about the results of model runs. In this way stakeholders were engaged at different stages of the project making the process more efficient and targeted, reducing unnecessary burden on participants, thereby avoiding 'stakeholder fatigue'.

PLAN THE TIMING OF ENGAGEMENT THROUGHOUT THE RESEARCH PROJECT

If the timing of research fits well with the interests and agendas of stakeholders, this makes successful engagement more likely. The timing of stakeholder engagement was critical for the BiodivERsA Ecocycles project. In the agro-steppe areas of Northern Spain, changes in agricultural land use have resulted in outbreaks of rodent populations that cause considerable crop damage and pose a threat to human health.

The means of managing outbreaks was (and still is) a source of strong conflict among stakeholders and there was an urgent need for improved management strategies in the face of anticipated outbreaks. As the researchers were conducting investigations on the relationship of outbreaks with land use and climate at a time when this was an important issue for stakeholders, there was a high level of interest and participation. It was originally proposed that stakeholder meetings would take place annually, but in the first meeting, this was discussed with stakeholders and they expressed a preference to hold them more frequently. The fact that there was flexibility within the project to accommodate this was beneficial for stakeholder–researcher relations.

However, during the project lifecycle stakeholders had to take decisions on pest control strategies before researchers were able to provide results, this led to discouragement about the potential for using research in decision-making among certain stakeholders. This highlights the need to ensure stakeholder engagement is timed to coincide with the issue being addressed, as well as managing stakeholder expectations with regards to time-scale of delivery of results.

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Methods for engagement

› **Types of engagement method**

› **Practical methods notes**

› **Engagement skills**

› **Matching methods to levels of engagement**

›› **Case studies**

Understanding historical events

Part 5

METHODS FOR ENGAGEMENT

“ Identify and develop the methods that will be used to engage with different stakeholders and stakeholder groups at different stages in the lifecycle of the project. ”

The methods used for engagement depend upon objectives, the required level of engagement, the timing of when engagement activities are intended to take place, and the expected role of the stakeholder(s). Initial assessment with stakeholders of the desired outcomes from a project (see Part 2) can help identify which methods are most likely to deliver these outcomes and achieve the purpose identified for the engagement process[1]. All engagement methods have particular strengths and weaknesses; the key is to choose the right one(s) for the particular purpose and context. Methods should also be selected to meet the needs, capacity and expectations of the relevant stakeholders. More than one method is often desirable and several methods can be combined to achieve an aim.

TYPES OF ENGAGEMENT METHOD

Stakeholder engagement methods can be participatory (two-way) or informative (one-way). Informative methods are considered for engagement as long as they meet the needs of stakeholders and are designed with those needs in mind; which usually means that they are co-defined and possibly co-designed with the stakeholders. There are many engagement methods being used by different projects and new methods are being continually developed. The methods described in this section include the ones most commonly used by environmental organisations and projects[2].

The key to success is to understand the broad range and types of methods being used, what they are being used for, and why one might be more suitable than another in a particular context and for a particular purpose[2]. A wide range of techniques are available to facilitate effective two-way engagement between researchers and stakeholders, finer details of these techniques are listed below but broadly speaking these can be categorised as:

- **OPENING OUT** techniques for opening up dialogue and gathering information with stakeholders about issues linked to research. This collection of techniques is particularly useful during the initial phases of a research project, either during the development of initial research questions prior to writing a funding proposal, or in the early phases of a funded project, where the research goals and programme of work are being adapted to fit the needs and interests of stakeholders better.

- **EXPLORING** techniques that can help evaluate and analyse preliminary findings with stakeholders. Given the length of most research projects, getting early feedback on preliminary findings can help keep stakeholders interested in the process and give them greater ownership over the eventual research outcomes. Feedback can also provide researchers with ideas about how to further refine their work, such as where assumptions are not clear or are questioned by stakeholders.

- **DECIDING** after issues have been opened up, explored, and analysed, it is often necessary to start closing down options and deciding upon actions based on research findings. There are a number of techniques that can engage researchers and stakeholders in decisions based on research findings, for example prioritising particularly interesting or relevant findings for further research or

action.

- **INTEGRATING** techniques can be used for exploring, analysing and deciding. These techniques can be used throughout the entire research process.

OPENING OUT TECHNIQUES INCLUDE:

- **BRAINSTORMING** techniques can help rapidly identify initial ideas from a group. By getting participants to think rapidly and express their ideas in short phrases, the technique encourages participants to suspend the normal criteria they would use to filter out ideas that may not appear immediately relevant or acceptable. As such, many of the ideas may not be useable, but there may be a number of new and creative ideas that would not have been expressed otherwise, that can be further developed later. A useful guide to a range of brainstorming techniques can be found on the Mind Tools website: http://www.mindtools.com/brainstm.html

- When using a **METAPLAN,** participants are given a fixed number of note papers (usually between two and five, depending on the size of the group; with fewer pieces of note paper being used in large groups), and asked to write one idea per piece of paper. Participants then take their note paper and place them on the wall, grouping identical, similar or linked ideas together. The facilitator then summarises each group, checks the participants are happy with the grouping (making changes where necessary) and finally circles and names each of the groups. Within ten minutes, it is usually possible for everyone to express their views and this provides a summary of the key issues that can be used to structure subsequent group activities.

- **VENN DIAGRAMS** can be used for a similar purpose as metaplans, helping participants identify key issues and overlaps or connections between the issues.

- There are a variety of ways to get participants to **LIST** ideas or information, for example via responses to requests for information on social media platforms or online discussion boards, or in group work by creating 'stations' around the room where participants can list information or ideas on a particular topic or issue. Stations may for example be based around themes that emerged from a brainstorm or metaplan (discussed above). These groups may be facilitated or allow participants to contribute to all stations as they see fit in their own time.

- In the **CAROUSEL** technique, participants are assigned to groups (with the same number of groups as there are stations) and given a fixed time to contribute to one station before being rotated to the next. If each group is given its own coloured pen, it is possible for participants to see which ideas were contributed by previous groups. When a group reaches a new station, they are given time to read the contributions of the previous group(s). They can then query or build upon previous contributions, listing their own ideas beneath the ideas expressed by previous groups. As the activity continues, it becomes increasingly difficult for groups to add new points, so the time per station can be decreased. Once participants return to the station they started at, they can be requested to report on what other groups have added to their points. Although not fully comprehensive, this gives everyone a good idea of what has been contributed. For those who want a more complete picture, the notes can be left displayed walls to be viewed during subsequent breaks.

EXPLORING TECHNIQUES THAT ENABLE STAKEHOLDERS TO EXPLORE AND CRITICALLY EVALUATE RESEARCH FINDINGS INCLUDE, FOR EXAMPLE:

- **CATEGORISATION** techniques ask participants to sort or group ideas into themes, for example based on pre-set criteria or based on similarity. For example, the grouping stage of a metaplan, or putting ideas on cards and asking participants to sort the cards into different piles based on their categorisation.

- **MIND-MAPPING** techniques (also known as concept mapping, spray diagrams, and spider diagrams) can quickly capture and link ideas with stakeholders. A useful guide to mind-mapping can be found on the Mind Tools websites: http://www.mindtools.com/pages/article/newISS_01.htm

- **PROBLEM TREE ANALYSIS** (also known as cause-effect mapping) is similar to mind-mapping. It is a simpler tool and therefore limited in the way it can be used. It may be useful in settings where the complexity of a mind-map may be considered intimidating for some participants, or where analysis needs to be kept simple and brief. Rather than assessing how all issues are linked, problem tree analysis visualises links between the root causes and solutions to a problem. A simple picture of a tree is drawn, with the problem written on the tree trunk. Participants draw roots, writing the root causes of the problem along each root. Some root causes may lead to other root causes, so an element of linking may be done between roots, but this should not get too complex. At the top of the trunk, branches are drawn, along which potential solutions are written with links drawn from branches to other branches to show how one solution may be dependent upon another solution being first implemented. Additionally, circles of coloured paper ('fruits') can be used to represent anticipated impacts or outcomes of implementing solutions.

- **SWOT ANALYSIS** encourages people to think systematically about the strengths, weaknesses, opportunities and threats as they relate to the issues being researched. More information is available on the Mind Tools website: http://www.mindtools.com/pages/article/newTMC_05.htm

- **TIMELINES** can be used to help structure discussion in relation to historical, planned or hoped for future events, this is particularly relevant to issues that have a strong temporal dimension or for project planning with stakeholders. There are various ways to construct timelines. For example, a timeline may be drawn horizontally on paper starting from the present and marking specific years and/or historic or known future events, to help participants orientate themselves along the timeline. Participants may then write comments at various points in the past or future.

CLOSING DOWN AND DECIDING TECHNIQUES INCLUDE:

- **VOTING** in most group settings can make it difficult to ensure anonymity during the voting process. This can lead to biased results and there is little room to explore reasons behind stakeholders voting preferences.

- **RANKING** can be used to place ideas in rank order. Getting consensus amongst participants for a particular ranking can be challenging, although the discussions that this exercise stimulates may prove to be revealing. It is also not possible to differentiate between options that are particularly popular or unpopular and this may be important in situations where only a limited number of ideas are considered viable. Additionally, ranking may imply that mid-ranked options are viable or somewhat preferred, where in reality they are not.

- **PRIORITISATION** differs from ranking by enabling participants to express the strength of their feeling towards a particular option. Prioritisation exercises identifies options that are considered to be particularly popular (or not) by participants, which may require further exploration. In prioritisation exercises, participants are given some form of counter that they can assign to different options (e.g. stickers, stones or crosses marked in pen). Participants are normally provided with a fixed number of counters (at minimum this should be the same number as the number of options) as this prevents certain participants assigning more counters than other participants to the options they prefer, thus biasing results. It is then possible to identify which ideas are preferred, and it is relatively quick to total the number of counters assigned to all options, and if desired, create a ranked list.

- **MULTI-CRITERIA EVALUATION** (also known as Multi-Criteria Analysis or Multi-Criteria Decision Modelling) is a decision-support tool for exploring issues and making decisions that involve multiple dimensions or criteria. It allows economic, social and environmental criteria, including competing priorities, to be systematically evaluated. Both quantitative and qualitative data can be incorporated to understand the relative value placed on different dimensions of decision options. Broadly, the process involves context or problem definition, representation of evaluation criteria and management options, and evaluation.

There are many other stakeholder engagement techniques that can be explored, including:

PROMOTING DIRECT/PRO-ACTIVE INTERACTIONS:

- One-to-one meetings and interviews.
- Questionnaires and surveys.
- Knowledge exchange groups (including steering groups, advisory panels, multi-stakeholder forums).
- Informal contact.
- Workshops, focus groups and other types of meeting, including social events. Stakeholder-led workshops or conferences focussed on relevant issues linked to the research.
- Talks or lectures.
- Practical demonstrations, including participatory events (e.g. training, games). Field or laboratory visits to facilitate shared dialogue and understanding of study sites or research processes.

APPROACHES INVOLVING STAKEHOLDERS IN THE RESEARCH PROCESS:

- Citizen science approaches to monitoring (e.g. smart phone applications).
- Participatory mapping to enable researchers and participants to input data, map focal areas and integrate scientific and local knowledge.
- Participatory photography (photo surveying) to enable participants to monitor, communicate or discuss locations and issues of importance.

TOOLS TO INCREASE AWARENESS ON THE PROJECT AND ITS RESULTS:

- Websites (including blogs, online consultations, online games).
- Social media (including online discussion groups and forums).
- Posters (including brochures, leaflets or fact-sheets). Videos. Newsletters and bulletins.
- Press releases (including Frequently Asked Questions).

GENERATING PRODUCTS USEFUL FOR STAKEHOLDERS:

- Guidelines for stakeholders.
- Databases.
- Popular publications.
- Stakeholder-specific publications (e.g. policy briefs).
- Use of professional storytellers and musicians to make research findings more accessible to all audiences and enable all stakeholders to understand issues engage in discussions.

CASE STUDIES

UNDERSTANDING HISTORICAL EVENTS

Stakeholders will often have had a long involvement with the area and issues of interest to researchers. One way of gathering information about the current state of the environment and the drivers that have influenced local biodiversity is to discuss historical events with stakeholders. As well as revealing information that may not be published elsewhere or overlooked in a contemporary study of an ecosystem, such a process may also help researchers understand the values and perspectives held by stakeholders and how these are connected to past events.

This was one of a set of approaches taken by researchers on the FP7 FORCE project to gather information about the factors influencing the health of coral reefs in the Caribbean. Historical timelines were developed with stakeholders at both community and national level to capture key events and changes of importance. Timelines were created by asking people to write down the changes they had experienced or heard about, and then arranging the paper on a timeline wall, which encouraged people to move around and interact. These were then published in reports disseminated in the focal communities. A similar approach was used for both information gathering and for diffusing inter-stakeholder conflict in the BiodivERsA FIREMAN project (see Part 7 of this *Handbook*).

EUROPEAN BEECH FORESTS FOR THE FUTURE

In 2010, the BiodivERsA project Beech Forest for the Future (BeFoFu) started as an international collaboration between 5 universities and research institutes over Europe. The aim was to better understand the policy, socio-economic and ecological background and processes of beech forest conservation and management under the Natura 2000 network across Europe. The research team worked to ensure the project was highly relevant for forest and conservation policy makers, scientists and practitioners, using different methods of engagement and contributions from stakeholders:

- There was an initial round of 'Delphi' interviews (see practical methods notes below) that involved about 50 stakeholders. This was used to provide an insight into the politics of Natura 2000 in Beech forests in several EU countries, contributed to the formulation of research questions, and identified stakeholder expectations of the BeFoFu project.

- Social science empirical research was conducted and stakeholders were viewed as the most important data source. More than 200 stakeholders were involved in the several case studies that were reviewed by the project team.

- A Stakeholder Advisory Board was established that enabled stakeholders to comment on project progress and results. The outputs of the Advisory Board were used to inform the design of the stakeholder engagement activities. The Advisory Board was made up of stakeholders from the European Commission, European Forest Owners association and a European Environmental NGO.

- A second round of 'Delphi' interviews was conducted with about 50 stakeholders. Stakeholders received information on project results and were provided with the opportunity to comment on possible policy relevant conclusions.

- A stakeholder workshop was held and stakeholders from about 10 EU countries evaluated project results and helped jointly develop possible conclusions for policy making.

PRACTICAL METHODS NOTES

A collection of practice notes on a selection of most frequently used methods are available to download from the BiodivERsA website. The practice notes contain guidance on how to conduct the following stakeholder engagement activities:

- Interviewing stakeholders
- Organising stakeholder workshops
- Participatory mapping
- Writing a policy brief
- Scenario analysis
- Co-developing research outputs with stakeholders
- Making and commissioning videos
- Delphi method
- Enabling stakeholders to monitor research outcomes and generate data
- Social media
- Multi-criteria decision analysis
- Facilitating workshops.

ENGAGEMENT SKILLS

Research consortia frequently do not include professionals with experience in engagement practice or non-scientific communications. This can act as a limitation to the effectiveness of engagement activities so it is worth considering training for consortium members or using professionals who can support effective engagement; such as workshop facilitators, councillors, brokers, communicators, artists, positive actors, etc. Effective facilitation is key to a project that involves in-depth engagement. However, professional facilitation can be expensive, ranging from around 800 to 4000 Euros for a small event, up to 10,000 Euros for a full day event with over 100 participants. Prices vary with the expertise and reputation of the facilitator, as well as the amount of time necessary to prepare for an event. Such costs need to be factored into projects at an early stage. In many cases the budget for professional facilitation is not available, so it may be necessary to include someone with facilitation expertise into the research team, or ensure that facilitation training is carried out early in the project. Early consideration of engagement is necessary for estimating the need for specific training or professional support, allowing for any likely costs to be included in project applications.

Working with other practitioners in order to share expertise and costs of stakeholder engagement activities is worth considering. This might mean working with other research teams interested in a common theme or securing contributions from stakeholders with the relevant expertise. The BiodivERsA Secretariat, the BiodivERsA partners and other resources, like the BiodivERsA Database, may provide useful information on opportunities to work with other research teams or on suitable professionals with experience.

MATCHING METHODS TO LEVELS OF ENGAGEMENT

Different levels of engagement are defined in Part 3 of this Handbook. Level of engagement will vary from one stakeholder to another and throughout the project lifecycle as stakeholder roles change.

In order to illustrate different levels of involvement, methods have been colour-coded as follows:

Inform: most basic level of engagement

Consult: specific questions are asked, but not full-discussion or interaction

Involve: more opportunity for discussion, but not involved in decision making

Collaborate: full involvement, often including decision making.

Methods of engagement can be considered in terms of the level of engagement they are most appropriate for. For example, stakeholder specific publications on a website or newsletter are most likely to be used to Inform, and a workshop could be used to engage at **Involve** or **Collaborate** levels. Examples of some methods and their most appropriate levels of engagement are provided in Table 5.1.

Table 5.1

Examples of methods and their associated levels of engagement

	Inform	Consult	Involve	Collaborate
Website	**	**	*	*
Social media	**	**	*	*
Lectures	**	*	*	*
Multi-stakeholder forums		*	**	*
One-to-one meetings and interviews		*	**	*
Town Hall meeting		*	**	*
Workshops		*	**	**
Questionnaires/surveys		**	*	*
Practical demonstrations			**	**
Steering group				**

*** most appropriate level of engagement for a particular method.*
** other levels for which the method is also relevant.*

Once stakeholders have been identified, overall levels of engagement have been established, and the roles that the stakeholders are to play have been determined, the appropriate methods and their timing can be selected.

Table 5.2 provides an example of how methods can be selected for a project based on the level of engagement required. Most projects will involve various levels of engagement and more than one method for each level of engagement required. Each stakeholder does not have to be engaged in every activity at the level of engagement they are associated with.

Table 5.2

Examples of stakeholders and methods, based on appropriate levels of engagement[3]

Level of engagement →	**Inform**		**Consult**	**Involve**		**Collaborate**
Method of engagement →	Website	Newsletters	Questionnaire	Work-shop	One-to-one meeting	Steering Group
Stakeholders ↓						
Govt advisors		x		x	x	x
Landowners		x	x	x	x	
Local Business		x	x	x		
Media	x	x	x			

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Planning the detail of the engagement

- **› The engagement planning table**
- **› Practicalities, feasibility and implementation**
- **› The engagement table: share, adapt and update**

›› Case studies

Plan how the stakeholder engagement fits within external agendas and policy processes

Think about the expertise within the research team and plan accordingly

Be aware of local culture and custom

Be prepared to adapt

Part 6

PLANNING THE DETAIL OF THE ENGAGEMENT

“ To elaborate the engagement plan and define the activities ”

Following Parts 1 to 5, you will have identified the stakeholders, assessed the level of engagement, suggested appropriate methods for engagement, and proposed the role each stakeholder will play. Note that the role, or roles, that the stakeholder will play will partly determine when the engagement is likely to occur.

It is now time to start effectively planning the engagement process, and to consider the full list of activities you intend to carry out[1]. At this stage, it is important to take the following into consideration:

- Target your activities – it may be better to do less, but to do it more effectively.
- Estimate likely costs (time and money) accurately, and be realistic (don’t underestimate).
- Think about what expertise you have and plan accordingly. Do you need to involve/employ external experts, and if so, do you have the funds?
- Where choices have to be made, use high impact/low cost methods and activities, and if necessary concentrate on the most important and influential stakeholders.
- Try to make use of other pre-existing approaches or activities where available and appropriate.
- Time your research, or some of its outputs, where appropriate, to enable it to inform any relevant external or policy processes.
- Take into account possible unexpected outcomes (positive or negative).

CASE STUDY

PLAN HOW THE STAKEHOLDER ENGAGEMENT FITS WITHIN EXTERNAL AGENDAS AND POLICY PROCESSES

To increase the relevance of engagement activities for stakeholders and the likelihood of the results having an impact, it is necessary to understand the wider context in which the project fits. Understanding for example, the current policy context and how the results will contribute to an evidence base that informs decision making will increase the interest of stakeholders in the project. Results from a Dutch case study part of the BiodivERsA CONNECT project provided an analysis of the social values held by the general public for changes in and around a freshwater lake. A government-agency partner in the project communicated the findings for inclusion in a public consultation about local planning and also used them to inform larger government programmes about water resources and ecosystem services.

CASE STUDIES

THINK ABOUT THE EXPERTISE WITHIN THE RESEARCH TEAM AND PLAN ACCORDINGLY

Projects that have interdisciplinary research teams including social scientists are often better equipped to design effective stakeholder engagement processes. Depending on the extent and nature of the stakeholder engagement to be done, it may be worthwhile including people with good facilitation experience on the research team to oversee the engagement process. For example, if there is a high level of conflict to be negotiated during engagement, a professional facilitator may help achieve the best results and avoid negative outcomes.

Researchers on the FP7 MOTIVE project (see Appendix 1) successfully engaged stakeholders in the production of models for adaptive forest management by working from stakeholder engagement guidelines produced by an experienced social scientist as part of a dedicated work package on 'stakeholder interactions and decision making'. Each of the ten partner countries carried out stakeholder analyses and wrote engagement plans based on the guidelines, without necessarily having a great deal of prior experience in stakeholder engagement. The engagement aspects of the project were monitored by the social scientist, who ensured that a broadly consistent approach was maintained across countries.

Researchers from the FP7 HighARCS project, where there were several case study communities in different Asian countries, recommended that a researcher that is working with stakeholders in multiple sites should plan regular shorter visits rather than spending a single longer spell on site. This ensured that potential problems could be identified early and that the researcher could be present for all key phases of the research.

THE ENGAGEMENT PLANNING TABLE

For the purposes of this *Handbook*, we have developed a 'matrix' (Table 6.1), which enables the researcher to bring together information on the role(s) the stakeholder will play, the timing of when engagement activities take place, the method of engagement, and the level of engagement to be adopted. Note that stakeholders may, and often will, have multiple roles to play throughout a project.

It is important to recognise that the level of engagement depends partly on the method of engagement being adopted as well as the stakeholder involved and not every engagement activity needs to be at the level of engagement identified for a particular stakeholder. In some instances engagement may be more frequent and conducted at a different level, particularly as the role a stakeholder may play can vary throughout the lifetime of the project. For example, a stakeholder may fall into the 'involve' category, but this level of engagement may only be necessary in the early stages of the projects, whereas later on the same stakeholder may only need to be involved with activities that 'inform'.

It is important to ensure that the methods being adopted are realistic and appropriate for delivering the desired outcomes, and that the proposed timing has been accepted by those who are planned to be involved[2,3]. It should also be remembered that the location, timing, number of meetings, and methods employed can all have a great impact on the overall results and outcomes.

Table 6.1.

Example of a matrix that can be used when planning activities for different levels of engagement. A template of this matrix can be downloaded from http://www.biodiversa.org/577**.**

Project Timescale →	Stakeholders →	Government policy makers or advisers	National/international policy makers/groups (e.g. European institutions, environment agencies)	Non-governmental organisations	Business / Private Sector	General public	Local community	Users (e.g. practitioners, data users)	Students	Interpreters (science communicators, mediators, facilitators)	Media	Landowners	Other
Before	Research strategy/ Research questions/ Project Design												
Before/ During	Networking												
	Advice/ Recommendations/ Project Revision												
During	Prediction/ Modelling												
	Monitoring												
	Resource Provision by Stakeholder (equipment, data, money, contacts) –												
During/After	Training												
	Implementation of Project Finding												
	Data user/Recipient / Beneficiary												
After	Feedback												
	Communication and Dissemination of Results to Stakeholders												
	Identifying Future Research Questions												

*Notes: Project timescale (top row) indicates the most likely stage at which each method would be applied. However, this is only a guide, as the timing may vary depending on the project. The methods can be colour-coded according to the 'level' of engagement outlined in Parts 1 and 3 (**Inform** – most basic level of engagement; **Consult** – specific questions are asked but not full discussion or interaction; **Involve** – more opportunity for discussion; **Collaborate** – involved to some extent in full decision making).*

PRACTICALITIES, FEASIBILITY AND IMPLEMENTATION

Before developing the matrix further, or sharing with stakeholders, it is important to consider the practicalities of the engagement being proposed to establish if the plan is feasible. This should also involve a consideration of the costs of the engagement, in terms of both time and money, and will allow the researcher to identify any constraints.

The following questions can help with considering practicalities:

- Are the timeframes for each activity realistic, including preparation and reviewing and analysis?
- Who will be responsible for the engagement – are different people to be responsible for different parts of it?
- How much staff time will be required? Is this time available? What will it cost?
- What are the costs of using external expertise (if desired/required)? What are the administrative costs, including hiring venues, making phone calls, provision of documents, etc.?
- Are stakeholders to be reimbursed for their time? Are their expenses to be covered? Are there other costs associated with communication and publishing information, including recording and providing feedback to stakeholders?
- How might the local culture or customs affect or restrict the engagement process? What contingencies need to be included in case engagement needs to change during the process, and what might different options mean to overall time-scales and costs?

The responses to these questions may result in the need to update the engagement table.

CASE STUDY
BE AWARE OF LOCAL CULTURE AND CUSTOM

This is an important consideration for any stakeholder engagement conducted in countries where the researchers might be unfamiliar with some aspects of the culture. In many countries for example, separate discussions must be held for men and women of a community where it is not customary for women to speak in the presence of men. Focus groups in the FP7 HighARCS project (see Appendix 1) were differentiated based on gender and age, to bring as many interests as possible into the research, as in the communities studied it tended to be men or older people that would dominate discussions.

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Boys (aged 9-15) in Vietnam take part in a focus group in the HighARCS project to discuss their involvement in family livelihoods.

CASE STUDY
BE AWARE OF LOCAL CULTURE AND CUSTOM

An awareness of different cultures was of direct relevance in the FP7 BESAFE project. One of the aims of this project was to evaluate the effectiveness of different arguments for biodiversity protection across a range of European geographical areas, conservation contexts and different social groups. In the first stakeholder meeting for BESAFE, the stakeholders themselves emphasised that different approaches and vocabulary would be required for different stakeholder groups to understand their argumentation processes. For example, in one case study about the management of Bialowieza forest in Poland, there was conflict between environmentalists, foresters and local residents over the proposed expansion of Bialowieza National Park, where different groups used different arguments and multiple governance levels were involved. Approaches for engaging with each group were thus designed with an understanding of how culture influences arguments around biodiversity.

Bialowieza forest - BESAFE case study area.

THE ENGAGEMENT TABLE: SHARE, ADAPT AND UPDATE

Once the practicalities have been considered, and the matrix has been revised where appropriate, it should be shared with stakeholders and funders, to provide them with some clarity over what will be undertaken, and when. Stakeholders may also have different views on their availability or have particular demands and constraints. For example, stakeholders may:

- Request that the engagement they undertake is on a one-to-one basis rather than in a group situation. Prefer not to interact with other particular stakeholder groups.
- Have difficulty travelling to, or reaching the location where the engagement is expected to take place, and therefore prefer to engage by a different method, perhaps remotely.
- Be unable to engage at the time proposed.
- May suggest that a different level, or method, of engagement is more appropriate.

The matrix should remain a flexible and adaptable document, which can be amended and updated as and when required.

CASE STUDY
BE PREPARED TO ADAPT

When planning stakeholder engagement activities, it is advisable to remain flexible in what engagement methods are used to ensure they remain fit for purpose as the project evolves. The FP7 HighARCS project used a range of approaches such as the 'Delphi method' (see practical methods notes in Part 5), focus groups and participatory ranking, to work towards the formulation of integrated action plans for the management of aquatic resources in three Asian countries. Researchers adapted their engagement approach as they learnt more about the situation in each case study area in terms of the local planning processes underway and the alliances and competition between groups of stakeholders. A range of methods was needed to gain a good understanding of the stakeholder dynamics in each area.

Another example of being adaptive from the HighARCS project was the ongoing evaluation of the representation of stakeholder interests. For example, in one case it was felt that the conservation of biodiversity interest was not adequately represented, and efforts were made to bring new stakeholders into the processes. It is important to build flexibility into the research project so stakeholder engagement plans can be reviewed and improved.

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Managing stakeholder conflict

- **Conflicts with and between stakeholders: types and causes**
- **Stakeholder perspectives on conflict**
- **Analysing conflict**
- **Conflict management tools**
- **Constructing a conflict timeline**

›› Case studies

Managing conflict

Part 7

MANAGING STAKEHOLDER CONFLICT

“ Identify the types of conflict that can arise, the different levels of conflict and their root causes. Understand how conflicts can be analysed in order to guide actions needed to find long-term resolution. ”

It is likely that at some time biodiversity research teams will experience some level of conflict. Conflict does not have to be negative; it is simply a part of everyday interactions[1]. It can occur between individuals, between groups of individuals and between organisations. A conflict can be defined as a process that begins when an individual or group(s) (representing a particular party) feels negatively affected by another party. Conflict arises anytime when the actions of one party obstruct or, in some way, make the performance or another party less efficient[1].

The level or type of conflict may vary depending on factors such as legal systems, political and institutional frameworks, economies, societal structures, cultural values, historic events, environmental conditions, and knowledge. Conflicts may involve two parties or multiple parties and may arise as a result of multiple factors. Because organisations act through individuals, conflict can stem from key actors within the organisation, and is often due to differing perceptions on an issue which they are unable to agree upon[1].

The initial perception of conflict is often that it will result in negative consequences for a project, but this is not necessarily the case. Conflict should be viewed as both *functional* and *dysfunctional*. A functional conflict, when managed well, can lead to new ways of thinking, innovative solutions and enhanced impact of research[2]. Dysfunctional conflict arises when conflicting opinions or needs result in negative discourse between stakeholders, often causing relationships or dialogue to break down.

A project team may find that it has to analyse and manage conflict by using techniques to reduce or resolve it[3,4]. When conflict is likely to be an issue for a research project, then having the right skills or training in the team or planning the involvement of professional councillors/brokers will be important.

The first step to reducing or solving conflicts is to explain them as a problem that needs to be resolved. The fundamental difference being that, unlike a conflict, there should be less hostility between parties that are working together to solve a problem. For effective problem solving it is imperative that each party feels they are contributing to the solution, rather than being a part of a problem[1].

CONFLICTS WITH AND BETWEEN STAKEHOLDERS: TYPES AND CAUSES

One of the simplest conflict classification systems has been put forward by Gordon[5] and distinguishes intrapersonal conflicts (within the individual), inter-personal (between individuals), intra-group (conflict within a restricted group), intra-organisational (within an organisation), inter-group (between different groups)

and inter-organisational (between organisations).

Conflicts can also be categorised in respect of their typology[1]:

- ***Open conflicts***, where it is everyone's knowledge.
- ***Hidden conflicts***, where it is only known by certain people.
- ***Latent conflicts***, when the conflict arises when something occurs that changes the status quo.

In addition, conflicts can also be defined as[6]:

- ***Well defined***, if they have clearly defined boundaries and constraints with clear solutions to the problem.
- ***Fuzzy or ill defined***, if they have unclear objectives, variables are unquantifiable, values held by the parties involved are not clearly defined, and it is difficult to envisage a feasible solution.

The causes of conflicts are numerous; Moura and Teixeira[1] broadly define the main causes of conflict:

- ***Cognitive conflicts*** result from differing assessments of data or facts that result in involved parties reaching different conclusions. Insufficient data and facts may have been made available, and such conflicts can often be resolved through additional clarification of facts, or further studies to obtain more reliable data.
- ***Conflicts of objectives or interests*** often apply to benefits sharing, resource allocation or re-distribution, and financing costs. These conflicts are often solved through conflict management techniques.
- **Normative conflicts** result from a divergence of views about values, types of behaviour and norms. Root causes of these conflicts are usually ethical or moral principles that are not negotiable.
- **Conflicts of relationships** stem from the personality or behaviour of stakeholder representatives and can often be resolved through negotiation or mediation via a third party.
- ***Conflicts over objectives, needs or interest*** arise when one party believes that their interests, needs or objectives are at odds with those held by other parties.
- ***Conflicts over processes*** occur when parties adopt different approaches to address the same problem.
- ***Structural conflicts*** often arise due to the way in which society is structured in terms of cultural, social, legal and economic arrangements, and the relative position and power of stakeholders within the social structure.

Conflicts are dynamic in nature and may arise in one stage of the project and evolve to the next. In general, there are five stages to every conflict: initiation, escalation, controlled maintenance, abatement, and finally resolution or termination[1,7].

STAKEHOLDER PERSPECTIVES ON CONFLICT

In order to understand reasons why certain stakeholders may become embroiled in conflict it is important to understand their views. This type of information may be gathered through interviews or workshops, perhaps coupled with questionnaires. Poolman *et al.*[2] suggest that careful design of questions, including assessment of strength of feelings, can reveal:

- Levels of interest in the project and individual goals or aspirations from the project;
- Current perceptions of how policies affect individual stakeholders and what they would prefer to happen in the future;

✳ How stakeholders may view potential issues or areas of conflict;

✳ Why particular views are held (reasons for perceptions);

✳ Different roles stakeholders envisage for themselves within a project or activity;

✳ Interactions and power relations among stakeholders, and an understanding of how they operate;

✳ The type of data, information, and knowledge that stakeholders possess, or can gather, which is of interest to the project team; and

✳ The degree to which stakeholder views and ideals are compatible or divergent.

The identified stakeholder interests can be categorised depending upon their perceptions of the project and perceived goals (see Table 7.1). A stakeholder that can be categorised as 'dedicated' is likely to defend their interests, goals and perceptions. Stakeholders that are deemed 'critical' are those who are likely to have the power or means to facilitate or hinder the projects objectives. Developing this type of matrix makes it possible to ascertain potential stakeholder reactions to a project. In some cases it may be necessary to adjust the objectives of the project in order to accommodate stakeholder goals and perceptions[2].

Table 7.1

Matrix for categorising stakeholders into 'High Dedication' and 'Lower Dedication' (adapted from Poolman et al.[2]). A template of this matrix can be downloaded from http://www.biodiversa.org/577

	HIGH DEDICATION TO PROJECT GOALS		LOWER DEDICATION	
	Critical to project success	Non-critical	Critical	Non-critical
Similar perceptions on use of project results	Stakeholders most likely to participate and become partners.	Stakeholders most likely to participate and may possibly become partners.	Valuable potential partners who are difficult to engage.	Stakeholders that do not need to become involved.
Opposite perceptions	Potential blockers of certain changes.	Potential critics of certain changes.	Potential 'blockers' who will not become immediately active.	Stakeholders who do not require initial attention.

ANALYSING CONFLICT

Whether conflicts are resolvable will depend on the type of conflict that exists and the factors that are feeding the conflict. It is important to assess stakeholder activity and interactivity to identify where differences between stakeholders exists and detect where conflict could potentially arise[2].

The FAO[8] state that conflict analysis is an essential element of a project as it helps to:

- Clarify and prioritise the issues to be addressed.
- Ascertain the impacts of the conflict.
- Identify root causes and contributing factors of conflict, which can help determine effective actions for resolution.
- Determine stakeholder motivations and incentives. Gauge the nature of relationships amongst stakeholders and their willingness and ability to interact.
- Collect existing information about the conflict and decide what further information is required.
- Assess the ability of existing institutions to manage conflict.
- Establish rapport with stakeholders; and help develop problem solving and analytical skills of stakeholders to address existing and future conflict.

SUMMARISED PROCESS FOR ASSESSING CONFLICT

There are numerous questions that can be posed to discover the types of conflict that exist, which stakeholders are involved, and what are the best opportunities to resolve the conflict. The following questions could help in analysis of conflict (adapted from Poolman *et al.* [2]).

Identifying the conflict:

- What conflict(s) currently exist?
- What conflicts may arise in the future?
- What are the possible reasons for the conflict?

Once the conflict has been identified:

- How did the conflict arise?
    - What issues or interests are of significant concern?
    - For how long has the conflict been going on?
- Is there sufficient information available about the issues (why/why not)?
- Who is involved with the conflict?
    - What are their interests in the conflict?
    - What kind of power do the different actors have?

- What are the historical relationships between conflicting parties?
- Are the groups able to work together?
  - Why/why not?
  - How might it be possible to get groups to collaborate?

Possibilities for resolving or reducing conflict:

- What kind of agreements could be tolerated by conflicting parties?
- Can conflict be resolved within the group without external assistance?
- Will parties from outside the conflicting groups be tolerated?
  - How could an outside party become involved in conflict resolution?
  - Who would be a suitable outside party?
- How will resolutions be made sustainable?
  - Would a written agreement be sufficient?
  - What has been considered binding in previous conflict resolutions?
  - What happens if agreements are not honoured?
  - Are there other optional solutions available?

There is no single set of rules of procedures for analysing conflict, but generally speaking conflict analysis should[8]:

- Collect and understand a broad range of views regarding the sources of conflict.
- Separate opinion from fact, as balancing emotions and reason is a vital element of resolving conflicts. It is not because facts are more important than perceptions or emotions, but because stakeholders deal with each in a different way.
- Examine the wider context (e.g. social, economic, and political).
- Be reviewed and refined throughout the entire process.
- Be undertaken in a participatory manner, as exchanges of information will enable stakeholders to focus upon the problems that are causing the conflict.

Keep in mind that the amount of information required in conflict analysis is highly case-specific. It is often assumed that the more information gathered the better. However, not all information will be useful so it is important to identify what is worth knowing and what will constitute a sufficient amount of accurate and reliable information to support resolution.

Conflicts are often complex, and attempting to manage them as isolated events may not be effective if the conflict is influenced by wider issues. Building consensus among stakeholders is dependent upon engaging all involved parties; therefore it is critical to correctly identify relevant stakeholders. Getting individuals or groups to resolve differences may be difficult if the parties do not recognise the need to manage or settle a conflict. It is also vital to find out whether there are parties that would benefit from conflict and would therefore resist efforts aimed at resolving differences. When addressing conflict it is important to consider strategies that have already been applied, what were the results, should the same strategy be applied again[8]. Should an assessment of previously applied

strategies reveal that these activities yielded unfavourable outcomes, or outcomes that are deemed not to fit with the desired objectives, then a new approach will need to be adopted.

CONFLICT MANAGEMENT TOOLS

Three tools, which can be adapted for specific uses, are presented in Appendix 1 based on the FAO negotiation and mediation techniques for natural resource management[8]. They can be used in two different ways: as a way of structuring thoughts and defining questions; or as aids for facilitating discussions or group sessions with stakeholders.

It is important to keep in mind that using particular tools in certain situations could create, or worsen, conflict and it may be more appropriate to apply tools with different groups of stakeholders separately.

CONSTRUCTING A CONFLICT TIMELINE

In some instances it may be helpful for the project team to construct a conflict timeline in order to better understand the historical events that took place leading up to the conflict. This may also help clarify the situation and how it arose.

PRACTICAL WAYS TO DEVELOP A CONFLICT TIMELINE

- Invite the stakeholder group to begin narrating the story of how the conflict has developed, going back to the earliest point that the group is able to remember.
- As the group narrates the story a member of the team should begin structuring the flow of information and setting out the sequence of events and noting down the various conflicts.
- The project team should then request the information be verified to ensure all details of the narrative have been fully understood and recorded correctly.
- Based upon the information obtained via the narrative write down the different conflicts under separate headings.
- Under each heading insert a column for dates and a column for events.
- Ask participants to identify the events that lead to the conflict and the dates they occurred.
- Repeat this process and gather relevant details for all of the events that took place either post or prior to those events that have been disclosed via the initial narrative (it does not matter if they are listed in chronological order at this stage).
- Once participants feel they have disclosed all events, verify the information and dates.

- When participants are happy with the time line, initiate a group discussion. You may consider using the following types of questions:
    - What has been learned through the exercise?
    - Which events have had the most impact on the conflict and why?
    - How have events impacted upon relationships between stakeholders?
    - Why have some parties behaved in a certain way?
    - What were the interests, issues or needs of the parties affected by these events?

In order to effectively deal with conflict it is imperative that projects conduct clear and relevant science and ensure that when the team is communicating with stakeholders, the cost, time, risks and uncertainty are considered and dealt with appropriately, and that stakeholder expectations are taken into account and managed accordingly[9]. It is important to remember that conflicts are between people, and the issues may need to be viewed from a social science perspective. The project team must fully appreciate the dynamics of the conflict and decide whether it is appropriate to become involved in conflict resolution activities or not, if engaging is deemed appropriate the team must decide the role they wish to play (e.g. information provider, mediator)[9].

When managing conflict, the project team must keep in mind that scientists may be viewed as stakeholders and, in some instances, possessing certain biases. Therefore, the project team must be able to appreciate and consider a wide variety of views and interests, maintain objectivity, and remain patient when seeking to achieve conflict resolution[9].

Two-way engagement, or maintaining a dialogue, is key for the management of conflict, in order to discuss and negotiate a resolution[10]. In particular, an engagement process that involves conflict must have transparency at its core[11] making it clear the positions of the stakeholders (including the researchers), their goals[12], available evidence and uncertainties[10]. Engagement processes must be designed to include all relevant stakeholders in a way that they can discuss issues on equal footing and make decisions based on good information. Such processes will have to pay particular attention to the hierarchy of power of stakeholders and the way group interactions or dynamics are managed.

CASE STUDY
MANAGING CONFLICT

MEASURES TO REDUCE CONFLICT

Experiences from case studies indicate that relatively simple measures can be taken to reduce conflict. Creating an atmosphere of trust is fundamental and ensuring that all participants feel they have the opportunity to contribute their views reduces tension, allowing discussion and negotiation to begin from a positive starting point.

The BiodivERsA Ecocycles project (see Appendix 1) conducted research on the factors influencing rodent outbreaks in different European sites including an agricultural land in Northern Spain. Outbreaks result in crop damage and pose a risk to human health, and there was an established conflict between stakeholders about how outbreaks should be managed, due to use of poisons by farmers having a detrimental effect on biodiversity. The project was successful in turning confrontations into a more rational approach to management through sustained dialogue and information provision that culminated in the agreement of a management protocol (although it should be noted that there has been a re-emergence of conflict over this issue at the time of publication). The following elements contributed to the success of the project:

- At the first meeting each stakeholder was given an allocated time to state their position on the subject. The notes were then circulated to the stakeholders for comment after the meeting, therefore the formulation of the problem was shared.

- The researchers were very open and transparent about the evidence they had and where there were uncertainties and knowledge gaps. Stakeholder relations were improved when the problem was presented and discussed as a shared one to be solved by contributions from all parties.

- The researcher facilitating the discussions within the national consultative forum was not known to the stakeholders prior to the project and was viewed as an 'outsider' to the conflict, which was helpful for diffusing inter-stakeholder tensions.

Vole outbreaks can cause considerable damage to agricultural land, as shown in the image on the right.

CASE STUDIES
MANAGING CONFLICT

CREATING TRUST

A case study within the FP7 HUNT project researched the driving forces of bush meat consumption in Africa, where there is conflict between conservation objectives and local livelihood priorities. Researchers who engaged local communities in research about this sensitive issue emphasised the importance of building trust and transparency. In this case, it was necessary to work alongside local people who acted as facilitators. These individuals were trusted, well known by communities and viewed as relatively neutral which helped create trust towards the research amongst communities. Without local connections, there is a danger that researchers can be viewed as being part of a government or conservation agenda and treated with mistrust, especially if there is a language barrier.

ALLOW VOICES TO BE HEARD

In the FP5 BIOSCENE project, stakeholders with very divergent and often strong views on issues about sustainable development, farming and countryside management in mountain areas were sought to participate in a series of workshops focusing on the development and sustainability appraisal of future scenarios. Semi-structured interviews were held to allow stakeholders to fully express their views prior to the scenario workshops.

COMPLEX METHODS CAN EXACERBATE PROBLEMS

A stakeholder on the HUNT project Scotland case study expressed the value of simply bringing stakeholders together in a non-threatening atmosphere to talk about the issues underlying conflicts surrounding game management during the national consultative forums that guided the research and during international conferences. Discussion of common challenges between countries was viewed as a constructive experience. However, there was also a warning about the use of certain research methods to address complex issues, such as deer management and competing land uses in upland Scotland. The researchers used scenario analysis and multi-criteria analysis (see method guide in Part 5 of this *Handbook*) to explore these issues and it was felt by some stakeholders that these methods were overly complex and academic and failed to lead to improved understanding of the issues, or find a route towards conflict resolution, for the stakeholders.

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Grouse shooting, one of the upland hunting activities investigated in the HUNT project.

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Monitoring and evaluating the engagement

- **Benefits of evaluation**
- **What to evaluate?**
- **When to evaluate?**
- **Stages of evaluation**

›› Case studies

Evaluation of the engagement process

Post project monitoring

Part 8

MONITORING AND EVALUATING THE ENGAGEMENT

“Monitor and review the engagement throughout the process, and evaluate both the outcomes and the process of the engagement to consider whether or not it has been successful.”

Assessing the effectiveness of the engagement undertaken and learning from the experience for the future is very important[1]. For example, evaluation might be used to provide evidence of value for money to the research funders[2], evidence of value for the research process and research outputs, or it could be used to demonstrate to stakeholders how their participation has been used. Therefore, some form of monitoring and evaluation is a necessary important part of the engagement process and should be considered from the outset, in the planning stages[3]. Time should also be taken throughout the engagement process to reflect on what has (or perhaps has not) proven effective.

Rather like the whole engagement process, there is no single, or simple, way, of evaluating stakeholder engagement. The purpose of the evaluation can help determine the evaluation design – in the same way as the purpose of the engagement determines the project design and methods of engagement[1]. Ideally, indicators for evaluation should be agreed with stakeholders (especially in projects with high levels of engagement or in projects with conflict) reflecting recognizable, achievable, describable, tangible, and relevant results[4,5]. The approach taken to evaluation of engagement largely depends on whether it is the effectiveness of the engagement process that is to be evaluated or the outcomes and impact of engagement process. It is therefore important to consider how the results of the evaluation are to be used and applied[6]. Broadly speaking, there are two types of evaluation[1]:

- **Summative evaluation** tends to be used where there is a need for accountability, for example for audit purposes, or to demonstrate to stakeholders how their contributions to the engagement process have been adopted. Therefore, data will need to be collected to demonstrate that specific targets have been met and a range of statistical methods may need to be employed to undertake this. This data collection may have to be undertaken at a later stage, as some outcomes may take some time to achieve[7]. Summative approaches, however, can have limited capacity to understand the often fluid and dynamic nature of engagement, because they focus more on the outcomes rather than the processes that led to them[5]).

- **Formative** evaluation may be designed to enable researchers and stakeholders to learn from the engagement process, so they can do better engagement in future research. Formative evaluation may be embedded in activities throughout the research cycle (e.g. Bowen and Martens[8,9]), enabling projects to adapt to feedback to enhance engagement during the course of the research[10-12]. Formative evaluation may be participatory, using more qualitative methods, such as interviews, focus groups and observation, to describe and illustrate why and how the engagement process did, or did not, work.

BENEFITS OF EVALUATION

There are a number of benefits to evaluating engagement[2], which include:

- If evaluation is done from the very start of the project it can help with planning engagement. It helps researchers focus on what needs to be achieved, how to go about achieving objectives, and how to measure success. Therefore, evaluation can help in defining aims and outcomes more clearly.
- Evaluation throughout the process provides an opportunity to reflect on the adopted approach and to make changes and improvements where necessary.
- Evaluation provides evidence, which can be used to prove the value and benefits of the activity, and to provide a record of achievements. It can also demonstrate value for money.
- Evaluation can be used to demonstrate to stakeholders where their participation has contributed to the project.
- Evaluation allows you to consider what has worked well and can therefore be used to help inform future engagement activities.

If evaluation is undertaken well it can improve the engagement process and will enable the project team to understand more about the impact of the project[13,14].

WHAT TO EVALUATE?

The evaluation process often considers three areas[2,13,15]:

1. The success of the engagement. For example, have the aims and objectives of the engagement process been met?
2. The process of engagement. Were the methods selected appropriate? Were the costs reasonable? What worked well and less well, and why? What lessons could be learned for future engagement processes?
3. What impact has the process had (on the stakeholders and also on the research)? Have there been any unexpected outcomes?

As well as considering the impacts, the outcomes and the process, it is also important to consider if the engagement fulfilled the aims of the stakeholders[16,17], and to take into account their views on the engagement process and its outcomes.

WHEN TO EVALUATE?

Evaluation needs to be considered in the planning stages and the final process needs to consider all aspects of the engagement process, from planning, through to undertaking the engagement and considering the outcomes. An evaluation table can be drawn up to consider the evaluation process at different stages (see Table 8.1).

Table 8.1

A simple stakeholder engagement evaluation table (available to download from the BiodivERsA website)

	WHAT DO YOU WANT TO KNOW?	WHAT EVALUATION METHODS WILL YOU USE?	HOW WILL THE EVALUATION BE CONDUCTED?
PLANNING PROCESS			
ENGAGEMENT			
BENEFITS/ OUTCOMES			

STAGES OF EVALUATION

STAGE 1: FROM THE OUTSET

Evaluation plays an important role right from the start of a project. By considering the process of evaluation early on you can ensure that the evaluation is based upon the aims and desired outcomes of the project and the engagement process[16,18]. It may be that by considering evaluation at the outset your outcomes become more refined, making them more measurable and achievable[1,13,15].

In addition, it may be necessary to collect some baseline data before the engagement begins in order to have data to compare against. This is particularly important if you want to see if there is a change in the state of affairs following the engagement[13,19].

STAGE 2: THROUGHOUT THE PROCESS – ON-GOING EVALUATION

Engagement activities should be monitored and reviewed throughout the process to ensure the engagement is fit for purpose, and to enable changes to be made where appropriate or necessary[20]. This is particularly important if any aspects of the project or engagement process have changed – perhaps because of the outcomes of some engagement activities. If changes need to be made, it is necessary to understand why things are working, or not[13].

Methods such as attendance forms, feedback forms or evaluation discussions can be used to help identify where improvements might need to be made to the process as you undertake the engagement. Establishing whether the engagement is going as planned needs to include all those involved in the process, including the stakeholders[17]. This monitoring process may be particularly useful when first engaging difficult-to-reach or new stakeholders and may be of particular use when things are not going as planned or expected[15].

It is also important to maintain contact and to give feedback to stakeholders when not engaging with them, especially in projects which have long timescales. This enables the stakeholder to continue to feel involved in the process, and helps to keep them informed and updated[19]. Participation of stakeholders in the engagement process may also enhance ownership and responsibility for the process of engagement, facilitating further discussions that can improve the final project impact and build social relationships[5].

STAGE 3: FINAL EVALUATION

The final evaluation should consider not only whether the engagement has fulfilled its aims and objectives, but also whether the process of engagement was appropriate and fit for purpose. In addition, it is important to ensure that stakeholders are able to identify where their input through the engagement process has been employed. It is both good practice and common courtesy to follow up with the stakeholders who were involved, to advise them of the outcomes and any proposed next steps[1,21]. This feedback might include information on what has happened to their input, and what difference it has made.

An important factor to consider in the evaluation of engagement processes is that it may sometimes take a long time before the outcomes are achieved, perhaps some time after the culmination of the project. Therefore the conclusions about the success of a particular engagement exercise may need to be revisited at a later date.

EVALUATING THE PROCESS

In evaluating the process, it is necessary to consider whether[16,17]:

- Levels of participation were considered appropriate for the stakeholders;
- Methods were appropriate, and successful;
- Costs were reasonable.

The following questions can help refine evaluation of the process[15]:

- What methods can be used to determine the effectiveness of the engagement?
- Will/should stakeholders be involved in the assessment?
- Are there other stakeholders that might be appropriate for the assessment process?
- What value are stakeholders likely to place on the assessment?

There are many methods for capturing information on the effectiveness of engagement, from assessment of willingness to engage, to feedback forms, to interviews or meetings designed specifically to test perceptions. In some projects it might be worthwhile including a range of formal methods to ensure that the outcomes can be adequately analysed. For example, projects with potential for conflict might require more opportunities for assessment and evaluation.

CASE STUDY
EVALUATION OF THE ENGAGEMENT PROCESS

In the FP7 MOTIVE project, researchers were asked by the project evaluation committee whether and how the stakeholder engagement had increased the likelihood of stakeholders using the adaptive forestry models produced in the project. Thus, an evaluation of stakeholder engagement was carried out in each case study country with questions under the following themes to allow researchers to reflect on the process. The evaluation was done late in the project and the researcher emphasised that greater benefit would have been gained from asking such questions early and throughout the project.

- Level of engagement and representation (e.g. *has the level of participation and commitment of stakeholders changed throughout the project?*)

- Engagement aims and methods (e.g. *was the role of stakeholders clearly defined and a common purpose for the project agreed and understood?*)
- Uptake and use of project outputs (e.g. *do we know where/when/how the models or tools, or their outputs, will be used by stakeholders?*)
- Learning and collaboration (e.g. *has engagement allowed stakeholders to better understand the perspectives of others, or helped with consensus-building?*)
- Influence and decision making (e.g. *how will use, uptake, value to the sector (i.e. fulfilling a business need), 'fitness for purpose', usability, etc., be monitored?*)

EVALUATING THE OUTCOMES

When evaluating the outcomes and impact of the engagement process it is important to consider the aims and objectives of the engagement and to develop indicators and measures that can be used to evaluate and demonstrate outcomes. An evaluation table can be used to help consider the information required[1,13].

Table 8.2

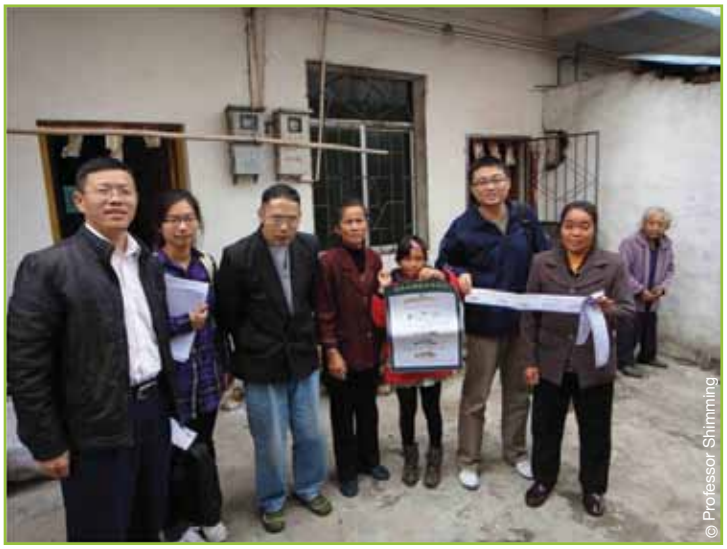
Example of a table for evaluating outcomes (adapted from Warburton *et al.*[1]). A template for of this table can be downloaded from http://www.biodiversa.org/577

GOALS/ PURPOSE	POSSIBLE INDICATORS	HOW TO OBTAIN DATA	IMPORTANT ASSUMPTIONS
To better inform stakeholders and the general public	Increased understanding and awareness	Questionnaires and interviews with participants before and after the process	That both the awareness, and willingness to engage, are as a result of the engagement activity, rather than any other factors
	Willingness to participate in the future	Questionnaires and interviews after the process, and follow-up interviews at a later date	

Different research teams may use slightly different tables (e.g. RCUK[13]) in this stage of evaluation; these are all equally valid in helping develop the thinking required to evaluate the outcomes of the engagement[13].

CASE STUDY
POST PROJECT MONITORING

Where a specific output or tool is produced by a project for future use by stakeholders it is important to put in place mechanisms to monitor its use beyond the end of the research project. The FP7 HighARCS project produced integrated action plans for each case study area and has monitored their implementation since the end of the project. Certain aspects have successfully been taken forward while others have not. In poor communities with few resources, such as those in HighARCS, it is necessary to secure continuing support for implementation from higher level institutions. Finding means of securing the legacy of biodiversity research should be a consideration throughout the life of projects.



Stakeholders from a fishing village in China with resources used to promote participation in the protection of local fisheries in the HighARCS project.

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Appendix 1

Approach used to develop case studies to demonstrate the different stages in stakeholder engagement in biodiversity research

AIMS

The aims of the stakeholder engagement case studies are to provide illustrative examples of stakeholder engagement in practice in biodiversity research and to draw on the methods used in these studies to design a set of guides about best-practice methods.

METHODS

Ten case study projects were used from a list of eighteen selected projects that conducted biodiversity research with varying levels of stakeholder engagement (see Table A1.1 for details). Short-listed projects were identified by looking at project databases of a range of funding organisations. These were BiodivERsA, Darwin, Defra, DIVERSITAS, EU FP7, and LIFE+. The final ten were all funded by EU FP7, BiodivERsA and one from EU FP5 (BIOSCENE) which was identified later in the project as a more-suitable case study than one of those originally selected. We focussed on projects that had either recently been completed or that were ongoing so that researchers and stakeholders would have fresh recollections of their engagement experiences.

The final case studies were selected to capture a range of project contexts which we determined by reading project websites and reports. We attempted to capture a range of the following characteristics to understand how stakeholder engagement works in different biodiversity research contexts:

- *Geographic*: case studies in Europe and in the developing world.
- *Socio-economic*: case studies cover a range of socio-economic conditions.
- *Spatial scale*: case studies carried out stakeholder engagement over different spatial scales from local communities to national and international level.
- *Conflict*: The issues being researched were influenced by different levels of conflict.

We interviewed a researcher from each of the ten case study projects. We also interviewed four stakeholders from three of the projects: FIREMAN, CONNECT and HUNT to give us their perceptions of the ways in which they were engaged with biodiversity research. One of the FIREMAN stakeholders had experience of working on a range of biodiversity research projects and provided additional insights from other projects to elaborate on the effectiveness of certain methods.

We carried out semi-structured telephone interviews using the following questions:

Interviews with researchers

- What were the purposes of stakeholder engagement in this project?
- What methods did you use for 1) selecting stakeholders, 2) engaging stakeholders?

- What methods were successful/unsuccessful and what were the reasons for this? What was done to overcome these difficulties?
- How did you decide when to involve stakeholders?
- Were there areas of conflict in the project and how were stakeholder engagement methods used to overcome these?
- What was the overall impact of stakeholder engagement and how did you assess this? Were the aims and objectives met?
- What would you have done differently to improve outcomes?

Interviews with stakeholders

- Why did you get involved with the project?
- At what stage were you involved in the project?
- What methods of stakeholder engagement did you experience and how successful/unsuccessful were these? What was done to overcome these difficulties?
- Were there areas of conflict in the project and how well did stakeholder engagement overcome this?
- What was the overall impact of stakeholder engagement?
- Did stakeholder engagement have effects that lasted beyond the life of the project (or do you think it will if the project is still ongoing)?
- What do you think should have been done differently to improve outcomes?

Interviews were recorded and then transcribed by a professional transcription service. A content analysis was used to analyse the transcripts. Material was collated in such a way as to reflect the structure of the BiodivERsA draft *Handbook* and thus provide evidence for the different aspects of stakeholder engagement covered. Similarly, information was gathered to evaluate the use of a range of engagement methods commonly applied in the case study projects. A summary of the general topics and methods discussed with researchers and stakeholders from each project is shown in Table A1.2. Research teams were given the opportunity to provide comments on the case study feature boxes in the text, which have been edited accordingly.

The methods guides were designed based on the commonly discussed methods in the case study interviews and project documents. Certain methods that were not discussed by case study researchers and stakeholders are also included as guides to ensure that the *Handbook* presents a diverse range of approaches to stakeholder engagement. The interviews were limited in length and could not cover the entire scope of the case study research projects or methods used so we could not include researcher and stakeholder perspectives on them all.

Table A1.1

Case study projects (*stakeholders were interviewed for these projects)

PROJECT	FUNDER	DURATION	WEB-LINK	DESCRIPTION	REGION
INVALUABLE	BiodivERsA	1/1/2012-31/12/14	http://www.biodiversa.org/492	Integrating valuations, market and policies for biodiversity and ecosystem services	Europe, Central/ South America, Europe, Asia
BeFoFu	BiodivERsA	1/5/2010 - 1/5/2013 -	http://www.befofu.org/	Evaluating the ecological and institutional background for beech forest conservation and management , taking into account challenges arising from climate change	Europe
VITAL	BiodivERsA	1/1/2009 - 1/1/2013	http://www.project-regards.org/VITAL/VITAL_ProjectSummary.html	Study into the role of plant and soil microbial diversity in the provision of ecological services in semi-natural grasslands, and the impacts of agricultural practices on these relation-ships.	Europe
HighARCS	EU FP7	1/12009-21/12/13	http://www.wraptoolkit.org/project_overview.php	Highland Aquatic Resources Conservation and Sustainable Development	Asia
MOTIVE	EU FP7	1/5/2009-20/4/13	http://motive-project.net/	Models for Adaptive Forest Management	Europe
BESAFE	EU FP7	1/9/2011-31/8/2015	http://www.besafe-project.net/index.php	Biodiversity and Ecosystem Services: Arguments for our future environment	Europe
Ecocycles	BiodivERsA	1/3/2009-1/3/2012	http://www.biodiversa.org/126	Interacting impacts of land use and climate change on ecosystem processes: from cyclic herbivores to predators of conservation concern	Europe: case study Northern Spain
CONNECT*	BiodivERsA	1/1/2012-31/12/2014	http://www.biodiversa.org/489	Linking biodiversity and ecosystem processes	Europe: case study North-west delta landscape (Ijselmeer, Netherlands)
FORCE	EU FP7	1/1/2010-31/5/2014	http://www.force-project.eu/	Future of reefs in a changing environment	Caribbean
BIOSCENE	EUFP5	12/01/2002-11/30/2005	http://www.edinburgh.ceh.ac.uk/projectpages/bioscene_page.htm	Scenarios for reconciling biodiversity conservation with declining agricultural use in the mountains of europe	Europe
HUNT*	EU FP7	1/11/2008-30/4/2012	http://fp7hunt.net/	HUNTing for Sustainability: research on the wider meaning of hunting	Europe and Africa
FIREMAN*	BiodivERsA	1/3/2009-1/2/2013	http://www.biodiversa.org/127	Fire management to maintain biodiversity and mitigate economic loss	Europe

Table A1.2

A summary of the topics covered and methods discussed during interviews

PROJECT	TOPICS COVERED AS REGARD STAKEHOLDER ENGAGEMENT	METHODS OF STAKEHOLDER ENGAGEMENT DISCUSSED
INVALUABLE	Barriers to engagement, expectations	Policy briefs, newsletters
BeFoFu	Analyse management and conservation strategies, assess climate change impacts, understand policies and political structures, evaluate impacts of market-based instruments, and develop policy recommendations	Delphi Interviews, stakeholder advisory board, workshop, website, project leaflets, publications
VITAL	Develop conceptual model of relationships functional diversity and ecosystem service delivery, determine how management changes alter the services agro-ecosystems can provide, and demonstrate impacts on development potential for local economies.	Workshops, focus group discussions, role-playing games, expert interviews, publications, project leaflets
HighARCS	Stakeholder representation, monitoring of management plan implementation	Delphi method, participatory mapping,
MOTIVE	Project stakeholder engagement protocol, stakeholder identification, social learning, expectations	Co-development of climate-forestry models with stakeholders
BESAFE	Snowball stakeholder identification, stakeholder input to research direction, local culture	Co-development of web-based tool, policy briefs, workshops
Ecocycles	Planning outputs of research, managing conflict, barriers between science and management	Co-production of adaptive protocol for management, consultative forum
CONNECT	Informing government decision making	Co-design of choice experiment for specific environmental context
FORCE	Scoping activities, systematic stakeholder mapping, bounding communities for stakeholder identification	Community workshops, interviews, construction of historical timelines
BIOSCENE	Stakeholder identification according to views, managing conflict	Semi-structured interviews, scenario analysis workshops
HUNT	Managing conflict, assessing long term change in stakeholder relations, continuity of engagement, language differences between researchers and stakeholders	National Consultative fora, scenario analysis, multi-criteria decision analysis
FIREMAN	Conflict management, benefits of international meetings for stakeholders and field based meetings	International project conference, scenario analysis, workshops with field demonstrations, historical analysis

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PHOTOGRAPHS

Cover page: Path to the Lac des Vaches looking towards the Aiguille de la Vanoise, Vanoise National Park, Savoie, France, August. By Benjamin Barthelemy/ naturepl.com

Part 1 (p.9): Lowland bog landscape seen from the air. South Estonia, Europe, October 2010 by Sven Zacek/ naturepl.com

Part 2 (p.25): Danube Delta fisherman Florin Moisa shaking weed off traditional fyke nets, Danube Delta, Romania, June 2013. By Lundgren / Wild Wonders of Europe/ naturepl.com

Part 3 (p.35): Two farmers in a traditional horse drawn cart near Codrii Reserve, Central Moldova, July 2009 By Wild Wonders of Europe/Geslin/ naturepl.com

Part 4 (p.53): Cornflowers (Centaurea cyanus) and poppies (Papaver rhoeas) growing on fallow fields near Orvieto, Umbria, Italy. June 2010. By Paul Harcourt Davies/ naturepl.com

Part 5 (p.61): Balearic Green Toad (Pseudepidalea balearica / Bufo balearicus) in profile. Mallorca, The Mediterranean. By Bert Willaert/ naturepl.com

Part 6 (p.71): Carpet of Bluebells (Endymion nonscriptus) in Beech (Fagus sylvatica) woodland, Micheldever Woods, Hampshire, England, UK, April. By Guy Edwardes / 2020VISION/ naturepl.com

Part 7 (p.79): Bank vole {Clethrionomys glareolus} portrait in snow. UK. By Jane Burton/ naturepl.com

Part 8 (p.91): Sheep in a field near the Dorset Gap, Dorset, UK June 2012. By David Noton/ naturepl.com

ICONS

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Agence National de la Recherche (ANR), FRANCE

Ministère de l'Ecologie, du Développement Durable et de l'Énergie (MEDDE), FRANCE

Bundesministerium für Bildung und Forschung (BMBF)/ Projektträger im Deutschen Zentrum für Luft-und Raumfahrt e.V. (PT-DLR), GERMANY

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For further information on this report, contact: Helen Baker (helen.baker@jncc.gov.uk)
or Matt Smith (matt.smith@jncc.gov.uk)

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BiodivERsA is funded by the European Commission