Strategic Methods in Community Engagement for UNESCO Biosphere Reserves

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Abstract:

This research aimed to find strategic methods in community engagement related to regional sustainable development, specifically within the context of regions in Europe and North America that are applying for the UNESCO Biosphere Reserve designation. The Framework for Strategic Sustainable Development was presented as a planning framework that can fill gaps in the current Biosphere Reserve planning process. A tool for assessing community engagement based on the five Process Characteristics of transparency, cooperation, openness, inclusiveness, and involvement was created and used to explore community engagement practices in six UNESCO Biosphere Reserve regions in Sweden and Canada. The assessment of methods used in those six regions yielded a list of nine methods which stood out in contributing to community engagement.

Keywords: regional sustainable development, UNESCO Biosphere Reserve, Framework For Strategic Sustainable Development, community engagement methods, transparency, cooperation, openness, inclusiveness, involvement

Statement of Contribution

This thesis was completed cooperatively by Kellee Jackson, Pierre Johnson and Melinda Jolley. All played equal but different roles in the research design, implementation and writing. The team worked together during the creation of the research goals and the conceptualization and development of the research questions. Kellee and Pierre then took the next steps to further develop the research questions and methods. The Literature Review was conducted by all three researchers.

Each team member then took the lead role on one of the three phases of the research. Kellee focused on Phase 1, creating an ideal model incorporating the FSSD into the current Biosphere Reserve planning process. Pierre worked on Phase 2, researching evaluation criteria for community engagement, which included work on finding the Ladder of Community Participation and the five Process Characteristics and the development of the Community Engagement Assessment Tool. Melinda led much of the work in Phase 3. Together the research team developed the interview questions, contributed to the creation of the ideal model in Phase 1, contacted the six regions, conducted interviews, and then transcribed each of the interviews. Two team members then coded each transcript and completed the regional report cards.

In terms of the written thesis, Melinda was responsible for the writing of the introduction and Kellee and Pierre collaborated on the methods section. Kellee wrote Phase 1 of the results, Pierre wrote Phase 2 and Melinda wrote Phase 3. Visuals, charts, and graphs were created by Pierre and Melinda. The online Guidebook that was created to share the research finding with the EuroMAB region was developed and written by Pierre, Melinda and Kellee. The presentations throughout the thesis project were a collaborative effort. Project management activities were shared by the team.

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The support of André Benaim was greatly appreciated as the five Process Characteristics that are central to our research were developed by him, Amber Collins and Luke Raftis. When we met, he encouraged us to use their findings to help structure our research.

Three of our colleagues, Tracy Meisterheim, Phil Long and Alison Cretney offered insights into the professional world of community engagement as we developed our research questions. Gordon O'Connor of the Dogwood Initiative in Victoria, B.C. and Sven Borén, a Blekinge UNESCO Biosphere Reserve Community Advisory Council Member both provided important insights into how our research could address existing gaps in the Biosphere Reserve planning process. Viviana Lopez, a PhD candidate researching UNESCO Biosphere Reserve Success Indicators, also offered advice on how best to work with Biosphere Reserve regions within the context of our research.

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Executive Summary

Introduction

The Framework for Strategic Sustainable Development (FSSD) offers organizations and regions a strategic framework to move them away from unsustainable actions and towards a fully sustainable future. Key elements of the FSSD include four science-based Sustainability Principles and the use of backcasting planning methods for developing strategic guidelines that guide efforts towards sustainability. The big challenge remains how to affect sustainable development, which should consist of steps to move human society from our current unsustainable way of life towards a more sustainable future.

UNESCO Biosphere Reserves are intended to serve as learning laboratories, which aim to be examples to each other and to the world for how to concurrently achieve conservation of biological and cultural diversity and economic and social development. This role is one which has evolved from the original conservation-focused concept 40 years ago. Refinements to Biosphere Reserve requirements, like the most recent Madrid Action Plan (UNESCO 2008), show that the evolution to improve the Biosphere Reserves remains ongoing.

Our thesis aimed to contribute to the evolution of Biosphere Reserves in the areas of sustainable development and community engagement. There has been progress in both these areas for Biosphere Reserves since the 1970s, however the scale of the sustainability challenge and the community engagement challenge are such that more is required. With these challenges in mind, our main research question was:

> What are strategic methods in community engagement that could help the UNESCO Biosphere Reserve planning process when moving regions towards sustainability?

In order to answer that question we needed to address the following secondary research questions first:

> 1. How could the UNESCO Biosphere Reserve planning process be enhanced by the Framework for Strategic Sustainable Development to strategically move a region towards sustainability?

2. What are evaluation criteria for community engagement in regional sustainable development, such as UNESCO Biosphere Reserves?

We chose to limit the scope of our research to relatively recently designated Biosphere Reserves in Europe and North America to assess the effect of the most up-to-date requirements for sustainable development and community engagement. The EuroMAB conference of July 2011 for Biosphere Reserves in Europe and North America provided us with a target audience for our findings. Six regions, two in Canada and four in Sweden, agreed to participate in our research.

Methods

We structured our methods into three phases, one to answer each of the research questions. In Phase 1, we needed to establish an overarching, theoretical understanding of how the Biosphere Reserve concept could address the sustainability challenge. This was done by answering how the Biosphere Reserve concept could be enhanced by the FSSD. We categorized information about the current Biosphere Reserve planning process using a generic Five-Level Framework (5LF) to provide us with a structured understanding of how current Biosphere Reserves function. Next, we built an ideal model of how Biosphere Reserves would operate if aligned with the FSSD. Finally, by comparing the current with the ideal model we identified gaps in the existing concept as well as some areas of contribution.

Before we could address our main research question we needed a means of comparing and evaluating community engagement methods in a systematic way. Phase 2 involved deriving that means. From our literature review and expert interviews, we created an evaluation tool by combining the Ladder of Citizen Participation (Arnstein 1969) and Process Characteristics from The Social Dimension of Sustainable Development: Guidance and Application thesis (Benaim, Collins, and Raftis 2008) to answer our question about evaluation criteria for community engagement within Biosphere Reserves. We used the eight levels of the Ladder as a means of categorizing engagement by examining the range of citizen control in a public process, from no-control to full-control. The five Process Characteristics from The Social Dimension of Sustainable Development thesis are cooperation, transparency, inclusiveness, openness, and involvement. We used the specific definitions for those characteristics from

that thesis without alteration as our measures of quality of engagement. We used this combination of the Ladder and the five Process Characteristics to create a Community Engagement Assessment Tool. This tool was then used as part of the methods in Phase 3.

Phase 3 involved structured interviews with the six Biosphere Reserve regions. We evaluated responses to our interview questions using the Community Engagement Assessment Tool from Phase 2 to come up with a Report Card summary for each region. From the Report Card summaries we extracted a list of engagement methods which contributed to meeting the five Process Characteristics. We then filtered that list to extract the methods that had the strongest and most synergistic relationships to the characteristics.

The results from Phase 3, combined with the results from Phase 1, made up the answer to our main research question about strategic methods in community engagement that could help the UNESCO Biosphere Reserve planning process when moving regions towards sustainability. Our results were then incorporated into an online guidebook for use by Biosphere Reserve regions.

Results

We summarized the outcome of Phase 1 showing the current Biosphere Reserve concept, the ideal model using the FSSD, and gaps between the current reality and ideal model. The most significant gaps found included a lack of a shared scientifically-robust definition of sustainability and the need to use backcasting from high level principles in the planning process.

The creation of the Community Engagement Assessment Tool was the main result from Phase 2. This tool, based on Arnstrein's Ladder of Participation and the five Process Characteristics, was then used in our regional interviews Phase 3.

From our Report Cards resulting from the regional interviews in Phase 3, we found regions at levels ranging between 4 and 7 on the Ladder of Citizen Participation as they initiated their process to becoming Biosphere Reserves and we found the range further limited to either levels 5 or 6 in the one year directly leading up to when they applied for designation. The scoring on the five Process Characteristics varied between and within

regions and covered the entire range from 1(poor) to 3(good). There was also an apparent correlation between higher levels on the Ladder and higher scores in the Process Characteristics.

We initially found 60 methods that contributed to higher scoring on Process Characteristics. Filtering that list of 60 to ones with the most significant relationship yielded a list of the nine strongest and most synergistic methods in community engagement that included:

- Representative Organization - Including the use of a flat organizational model, user-centered planning and co-management of resources.
- Communications Strategy - Including having communications experts on the team, creating a strategic communications plan including media relations, community relations and stakeholder relations.
- Facilitated/Hosted Dialogue - The creation of safe and inviting spaces to encourage learning and dialogue.
- Invitation to Co-create - Inviting participants to co-create the vision or action plan in a meaningful way.
- Neutral Spaces - Creation or use of space where all stakeholders feel comfortable and open to contributing.
- Bridge Building and Networking - This includes doing an inventory of all related organizations and then creating a web of synergistic partnerships.
- Co-learning Reciprocity Approach - Working together to build your partner organizations, while they help you build yours.
- Trust Building - Working on a personal level to have people open up to a larger common cause.
- Working with the Positive - Spend resources working with positive elements of a region to create further positive energy that will enable more stakeholders to be involved in the future.

Discussion

In order to fully answer our main question of we used our findings from Phase 1, in regards to an ideal model of Biosphere Reserves using the FSSD, with findings from Phase 3 in order to fully discuss strategic methods in community engagement within this context.

We believe, a strategic planning framework for sustainability is necessary to ensure a region's community engagement efforts are directed towards full sustainability. Under the umbrella of this planning framework the nine

methods highlighted in our research, which actively contribute to the five Process Characteristics would help regions move towards sustainability.

Based on our results, we recommend Biosphere Reserves: 1) adopt the four Sustainability Principles within the FSSD as their definition of sustainability, 2) backcast from high level vision within constraints of four Sustainability Principles, 3) use three prioritization questions and process characteristics to choose appropriate actions to move strategically, step by step towards that future goal, and 4) consider the nine strong and synergistic methods in community engagement as part of their approach. These recommendations are our key findings and the answer to our main research question.

We found our Community Engagement Assessment Tool, which uses the Ladder of Citizen Participation and the five Process Characteristics, useful though it was untested in the bottom half of the ladder of participation because none of the regions we studied operated at those levels. We believe that, in addition to its use within Biosphere Reserve regions, this tool has the potential to be used in assessing a wide variety of community engagement process.

Conclusion

We recommend potential follow-up work to study Biosphere Reserves elsewhere in the world, using a similar approach as we did. We would also suggest a more in depth look within a few select regions to better understand the diverse perspectives of stakeholders in a region. We also suggest that our Community Engagement Assessment Tool could be applied in any community engagement process.

UNESCO Biosphere Reserves are very well positioned to provide a leadership role in demonstrating conservation of biological and cultural diversity and economic and social development. We believe our recommendations to use elements of the Framework for Strategic Sustainable Development, as well as the nine strong and synergistic methods in community engagement, would provide the Biosphere Reserve regions steps towards achieving this leadership role in moving their regions towards full sustainability. We see our recommendations as consistent and complementary with the ongoing evolution of UNESCO Biosphere Reserves towards a more complete understanding of sustainable development and of better community engagement.

Glossary

ABCD Process: A strategic tool used within the Framework for Strategic Sustainable Development to apply backcasting from sustainability principles and guide workshop processes in the development of strategic plans for sustainability (Robèrt 2000).

Backcasting: A planning method useful in complex situations, in which future desired outcomes are envisioned and actions are then determined to reach those outcomes. This approach is alternative to traditional forecasting where actions are often determined using present day methods projected into the future (Holmberg and Robèrt 2000).

Biosphere Reserves: Sites recognized by UNESCO's Man and the Biosphere (MAB) Programme to promote sustainable development based on local community efforts and sound science. Biosphere Reserves have three equally weighted aims: conservation of biological and cultural diversity; economic and social development; and logistic support for research and education (UNESCO 2011).

Candidate region: A region in the planning and application phase prior to being certified by UNESCO as a designated Biosphere Reserve region. See "designate region" for contrast below.

Community engagement: "Engagement processes and practices in which a wide range of people work together to achieve a shared goal guided by a commitment to a common set of values, principles and criteria" (Aslin, and Brown 2004, 3). In contrast to "stakeholder engagement" below, community engagement strives to involve as many people in the community as possible.

Cooperation: To cooperate within a process is to have each party contribute what they can in order to best serve their needs in a mutually beneficial way (Benaim, Collins, and Raftis 2008, 9).

Designate Region: A region which has received official certification from UNESCO as a Biosphere Reserve. See "candidate region" above for contrast.

Five-Level Framework for Planning in Complex Systems (5LF): A conceptual tool used for analysis and decision-making when planning in complex systems. It consists of five distinct levels: System, Success, Strategic, Actions, and Tools (Robèrt 2000).

Framework for Strategic Sustainable Development (FSSD): A five-level framework that addresses society's systematically increasing impacts on the limited resources of the biosphere and social systems to offer organizations a strategic framework for planning and decision-making by using backcasting from sustainability principles to prioritize actions that move towards a sustainable future (Robèrt 2000, 245). It utilizes five distinct levels: System, Success, Strategic, Actions, and Tools.

Human needs: The nine basic human needs as defined by Manfred Max-Neef of: identity, freedom, protection, idleness, understanding, subsistence, affection, creativity and participation (Max-Neef 1991).

Inclusiveness: Ensuring the needs of stakeholders are acknowledged and respected even if they do not actively contribute to the process (Benaim, Collins, and Raftis 2008, 10).

Involvement: The taking or being part of some action or attempt; a sharing, of tangible or intangible things. Individuals are involved actively in the form of bringing their unique ideas, talents and energy to a project (Benaim, Collins, and Raftis 2008, 9).

Man and the Biosphere (MAB) Programme: A UNESCO Intergovernmental Scientific Programme aiming to set a scientific basis for the improvement of the relationships between people and their environment globally (UNESCO 2011).

Madrid Action Plan: Created in 2008, it set out targets, success indicators, timelines and responsibilities, along with a series of actions, related to community participation in Biosphere Reserves (Stoll-Kleeman et al. 2010).

MSLS: Master's in Strategic Leadership towards Sustainability Programme offered at Blekinge Tekniska Högskola (BTH).

Non-governmental organization (NGO): Any non-profit, task-oriented, voluntary citizens' group which is organized on a local, national or international level. They are driven by people with a common interest and perform a variety of service and humanitarian functions.

Openness: That a community or organization has the willingness to rethink and review its own values and processes (Benaim, Collins, and Raftis 2008, 10).

Regional sustainable development: Sustainable development on a regional level. This is more likely to take into consideration entire ecosystems and economic and social issues that flow between smaller regions, like municipalities. Refer to sustainable development below.

Stakeholders: Members of a community with a specific interest or concern.

Stakeholder engagement: A subset of "community engagement", see above. Engagement of community members with a specific interest or concern.

Sustainability challenge: Challenges associated with unsustainable development that have continued to increase, systematically degrading the natural biosphere and the social systems, within which human society depends (Robèrt 2000, 245). It also includes the obstacles to overcoming

those challenges and the opportunities for society if those obstacles are overcome (Robert et al. 2010, 267).

Sustainability Principles: System conditions for socio-ecological sustainability which provide a principle-based definition of sustainable society within the biosphere (Holmberg and Robèrt 2000; Ny et al. 2006). The four Sustainability Principles state that:

> In a sustainable society, nature is not subject to systematically increasing:
> …concentrations of substances extracted from the Earth's crust;
> …concentrations of substances produced by society;
> …degradation by physical means; and
> In that society,
> …people are not subject to conditions that systematically undermine their capacity to meet their needs.

Sustainable development: Paths of progress which meet the needs and aspirations of the present generation without compromising the ability of future generations to meet their needs, as described in the Bruntland Report to the United Nations World Commission on Environment and Development (Bruntland 1987).

Transparency: An ideal of communication and accountability in organizations and communities where motivations, driving factors, and impacts of all decisions and actions are made publicly available (Benaim, Collins, and Raftis 2008, 10).

UNESCO: United Nations Educational, Scientific and Cultural Organization, UNESCO "is focused on the building of peace, the eradication of poverty, sustainable development and intercultural dialogue through education, science, culture, communication and information" (UNESCO 2010).

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1 Introduction

1.1 Towards Regional Sustainable Development

The first widely recognized definition of Sustainable Development was "paths of progress which meet the needs and aspirations of the present generation without compromising the ability of future generations to meet their needs" as described in the Bruntland Report to the United Nations World Commission on Environment and Development (Bruntland 1987). Even since this definition received global attention, challenges associated with unsustainable development have continued to increase, systematically degrading the natural biosphere and the social systems, within which human society depends (Robèrt 2000, 245).

The Framework for Strategic Sustainable Development (FSSD) uses a funnel metaphor (see Figure 1.1) to represent society's systematically increasing impacts on the limited resources of the biosphere and social systems. One significant challenge within the funnel is the ever increasing task of balancing the conservation of natural areas and resources with the need for economic and social development. "Species have been disappearing at 50-100 times the natural rate, and this is predicted to rise dramatically" (Secretariat of the Convention on Biological Diversity 2000, 5). In a more recent statement released in June 2010, Ahmed Djoghla, the Executive Secretary of the Convention on Biological Diversity said "Human beings are an integral part of nature. However to address the unprecedented challenges of the continued loss of biodiversity compounded by climate change a new relation based on respect and value between man and nature is urgently required".

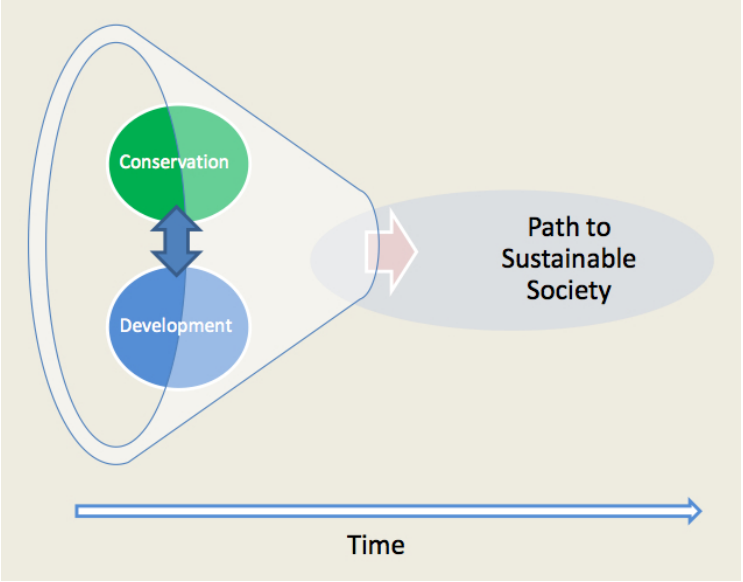

Figure 1.1. Funnel metaphor for the sustainability challenge

The FSSD offers organizations and regions a strategic framework to move them away from unsustainable actions and towards a fully sustainable future (Robèrt 2000, 245). Key elements of the FSSD include four science-based sustainability principles and the use of backcasting planning methods for developing strategic guidelines that guide efforts towards sustainability. The establishment of systems conditions for socio-ecological sustainability provides a principle-based definition of success for a sustainable society within the biosphere (Holmberg and Robèrt 2000; Ny et al. 2006). The four Sustainability Principles state that:

In a sustainable society, nature is not subject to systematically increasing:

…concentrations of substances extracted from the Earth's crust;
…concentrations of substances produced by society;
…degradation by physical means; and
In that society,
...people are not subject to conditions that systematically undermine their capacity to meet their needs.

Backcasting is a planning methodology useful in complex situations, particularly when there is a need for change. "Backcasting can increase the likelihood of handling ecologically complex issues in a systematic and coordinated way," which is beneficial in addressing today's societal challenges associated with current unsustainable actions (Holmberg and

Robèrt 2000). As an alternative to traditional forecasting where actions are often based on a continuation of present day problem-solving methods projected into the future, backcasting envisions future desired outcomes, and actions are then designed to reach those goals (Holmberg and Robèrt 2000). As a means to apply backcasting from Sustainability Principles, the ABCD planning process is used as a strategic tool to guide workshop processes in the development of strategic plans for sustainability (Robèrt 2000).

Using strategic planning methods like mentioned above, actions on global, regional, municipal and individual levels, are all required on the path to sustainable development. Actions at the regional and municipal levels have been identified as key leverage points by the United Nations Local Agenda 21 Programme, as this is the level "closest to the people," and engagement practices here "play a vital role in educating, mobilizing and responding to the public to promote sustainable development" (United Nations 2011).

1.2 UNESCO Biospheres Reserves

The UNESCO Biosphere Reserve designation concept encourages regions to take strides towards sustainability and specifically addresses the need to balance conservation of biological and cultural diversity with economic and social development. It was created under the United Nations Man and the Biosphere (MAB) Programme that is now celebrating its 40th anniversary. The World Network of Biosphere Reserves "fosters the harmonious integration of people and nature for sustainable development through participatory dialogue, knowledge sharing, poverty reduction and human well-being improvements, respect for cultural values and society's ability to cope with change - thus contributing to the Millenium Development Goals" (UNESCO 2011).

When the UNESCO Biosphere Reserve concept began in the early 1970s the objectives were primarily about conservation alone. However, there has been an evolution of the concept to include sustainable development and a commitment to sharing experiences with other regions. In this report we concerned ourselves with the current generation of Biosphere Reserves for which conservation, economic and social development, and logistic support for research and education are part of their objectives. Therefore when we referred to Biosphere Reserves, we were referring to relatively recent ones unless stated otherwise.

The process to complete the application for UNESCO Biosphere Reserve designation can take three to nine years to complete. Most regions that have recently applied for their designations have done so under the rules of the Seville Strategy, developed in 1996, that formalized the focus on balancing conservation of biological and cultural diversity with economic and social development (UNESCO 1996). In 2008, the Madrid Action Plan was introduced and builds on the Seville Strategy. The regions included in our study, because of the longer application period have not directly fallen under the Madrid Action Plan but going forward these new requirements will apply, so we have considered them in our research. The Madrid Action Plan builds on the Seville Strategy by emphasising, amongst other things, the need for improved communications internally and externally to the Biosphere Reserves as well as more "open and participatory procedures" in community engagement (UNESCO 2008, 15).

UNESCO Biosphere Reserves are currently defined as "living laboratories for sustainable development" and are "the only sites under the United Nations system that call for conservation and sustainable development to proceed along mutually supportive paths" (Meijaard 2010). Biosphere Reserves have three interconnected functions:

1: conservation of biological and cultural diversity;
2: development (economic and human development that is environmentally and socially sustainable and culturally appropriate); and
3: logistic support.

There are currently 563 UNESCO Biosphere Reserve regions in 110 countries, with approximately 20 new Biosphere Reserves added each year (UNESCO 2011).

UNESCO Biosphere Reserves actively set out to balance conservation with economic and social development thus requiring "cultural sensitivity, scientific expertise and consensus-driven policies and decision-making" (Meijaard 2010). To address this challenge, strategic methods in community engagement are needed to involve, educate and empower the diverse stakeholder groups that make up communities and regions in all corners of the world.

For a region to receive designation as a Biosphere Reserve, it must fill out an application that demonstrates they have a plan in place to meet and

maintain the objectives of Biosphere Reserves including the Seville Strategy and Madrid Action Plan. We refer to regions in the pre-designation timeframe as candidate regions and to regions that are official UNESCO Biosphere Reserves as designate regions. Candidate regions must demonstrate that they have sufficient plans in place to meet the conservation, development, and logistic support functions of Biosphere Reserves. It is worth noting that these objectives do not require that conservation efforts or development projects be fully in place to become a designated region. Indeed, candidate regions with significant challenges in these areas may become designate regions based on the strength of their plans to change and address their challenges over time. The expectation is that designate regions will change towards achieving these objectives. They must demonstrate adherence to their plans and change in order to retain their designation.

We believe community engagement is the means by which change is fostered, accepted, supported and sustained by people. Community engagement has been defined as "engagement processes and practices in which a wide range of people work together to achieve a shared goal guided by a commitment to a common set of values, principles and criteria" (Aslin and Brown 2004, 3). Change towards sustainable development may fail to take shape or endure, without effective community engagement. "Active community engagement... is thought to, among other things, foster local ownership and common purpose, enhance protected areas acceptance, and facilitate the emergence of cooperative, adaptive, accountable and consensual conservation management" (Stoll-Kleemann et al. 2010).

As candidate regions ready themselves to apply for the Biosphere Reserve designation they are mandated to include elements of stakeholder engagement, but it is up to each community to determine how this engagement is done and to what extent it is carried out. In 2008, the introduction of the Madrid Action Plan strengthened earlier guidelines by including new targets, success indicators, timelines and responsibilities along with a series of actions related to community participation in Biosphere Reserves (Stoll-Kleeman et al. 2010). However, there is still a gap in the practical guidance that regions receive around strategic methods in community engagement that can most effectively move regions towards sustainability.

A recent UN global survey about Biosphere Reserves' community participation levels highlighted the need for further attention stating "the role of active community participation in delivering conservation objectives, as well as sustainability outcomes, deserves far more attention in further research" (Stoll-Kleemann et al. 2010). One regional report states that, "It is recommended that UNESCO and their partners develop guidelines on how to set up and implement partnerships and what... is needed for doing this work best (Meijaard 2010).

It is this need to create enhanced guidelines and strategic methods in community engagement to move both society and the biosphere towards full sustainability within a regional context that has brought us to our research questions that follow. The overarching goal is to offer regions a framework for strategic sustainable development and also practical methods to enable them to maximize the potential benefits of the Biosphere Reserve designation.

1.3 Research Questions

Our main research question was:

> What are strategic methods in community engagement that could help the UNESCO Biosphere Reserve planning process when moving regions towards sustainability?

In order to answer that main question we needed to address the following secondary research questions first:

> 1. How could the UNESCO Biosphere Reserve planning process be enhanced by the Framework for Strategic Sustainable Development to strategically move a region towards sustainability?
>
> 2. What are evaluation criteria for community engagement in regional sustainable development, such as UNESCO Biosphere Reserves?

1.4 Scope of Research

The target audience for this research includes members of the EuroMAB, the Man and the Biosphere Regional Network for Europe and North

America. EuroMAB is composed of 52 countries including Canada and the USA and includes 260 biospheres (EuroMAB United Nations 2011). The MAB National Committees and biosphere reserve coordinators of EuroMAB meet bi-annually and met in Sweden in July 2011. They are the primary audience for this research. The World Network of Biosphere Reserves (WNBR) and Biosphere Reserve managers in diverse regions of the world looking for a strategic framework for regional sustainability planning with guidelines and methods for strategic community engagement are secondary audiences. This research may also be of interest to other regions, even if they are not engaged in Biosphere Reserves, that are interested in moving towards sustainability and are looking for strategic methods in community engagement.

This research did not intend to include large urban areas or areas in Asia, Africa, and South America. In some cases, the findings from the research may be applicable to these areas.

2 Methods

2.1 Phase 1: UNESCO Biosphere Reserve Planning Process and the Framework for Strategic Sustainable Development

In Phase 1, we explored how the UNESCO Biosphere Reserve planning process could be enhanced by the Framework for Strategic Sustainable Development (FSSD) to strategically move regions towards sustainability. The FSSD uses a systems perspective to help organizations and regions move towards full sustainability, meaning a future where human society does not systematically contribute to imbalances in the natural and social systems within the biosphere. Within a planning process it is important to have a definition of success that takes into consideration this whole systems perspective. It is also necessary to have strategic guidelines that help select the best actions to move towards this definition of success. The goal was to create an ideal model of the Biosphere Reserve planning process if it were to move regions towards sustainability.

To do this, we first collected information about the current Biosphere Reserve planning process and then categorized that information using a generic Five-Level Framework (5LF). We used the 5LF in this case to better understanding the elements of the existing planning process by structuring it into the five levels - System, Success, Strategic, Actions, and Tools levels (Robèrt 2000).

We asked questions at each of the five levels in order to determine what Biosphere Reserves are designed to do, who they are designed for, and whether the MAB Programme provides recommendations on how regions can achieve these goals. Information was gathered from the UNESCO website on the Man and the Biosphere (MAB) Programme, the Madrid Action Plan, the Seville Strategy, and the Biosphere Reserve Nomination Form to build this understanding. Questions at each of the five levels included the following (Blekinge Institute of Technology 2011):

System Level: What type of tool/concept are Biosphere Reserves? Who developed the concept? What were the circumstances that led to its

development? What explicit or implicit assumptions does the concept state about the system?

Success Level: What is the stated purpose of Biosphere Reserves? What are they intended for? What are the most basic considerations that define success for Biosphere Reserves? What are the boundaries for the Biosphere Reserve concept?

Strategic Level: Does the Biosphere Reserve planning process help regions prioritize actions towards the overall goal by providing high-level, strategic suggestions? How does the Man and the Biosphere Programme recommend that decisions be made in the Biosphere Reserve planning process? Who is, or should be, involved in the decision-making process?

Actions Level: Are there any specific actions that the Man and the Biosphere Programme recommends taking in the Biosphere Reserve planning process? What is the rationale for them? Are they aligned with the stated goals or guidelines?

Tools Level: Are there any other tools that are suggested by the Man and the Biosphere Programme to be used in the Biosphere Reserve planning process?

We then examined the current Biosphere Reserve planning process through the lens of the Framework for Strategic Sustainable Development (FSSD) to contextualize and describe the role that Biosphere Reserves could play in the global transition towards sustainability. As mentioned in the Introduction, the FSSD offers organizations and regions a strategic five-level planning framework to move them strategically away from unsustainable actions and towards a fully sustainable future (Robèrt 2000, 245). The FSSD is comprised of the same five levels as the generic 5LF with its System, Success, Strategic, Actions, and Tools levels. However, the FSSD differs from the generic 5LF in that the FSSD is applied to guide planning and decision-making in the socio-ecological system, not just any complex system, specifically with the intent to move towards sustainability. Together with the information gathered and structured in the generic five-level framework, we then built an ideal model or 'gold standard' of how the Biosphere Reserve planning process could operate if complemented with the FSSD. At this stage, we asked questions at each level of the FSSD to determine how the Biosphere Reserve planning process could help regions

move towards sustainability. Questions at each of the five levels of the FSSD included the following:

System Level: What would an ideal understanding of the system be? How broad should the boundaries be?

Success Level: How would Biosphere Reserves define their success ideally?

Strategic Level: Ideally, what process characteristics would be included when decision making? Ideally, how would Biosphere Reserves be screening their options of which steps to take?

Actions Level: Ideally, how would Biosphere Reserves be selecting their actions?

Tools Level: Ideally, how would Biosphere Reserves be selecting tools?

We then compared the two models to identify gaps in the current Biosphere Reserve planning process as well as areas of contribution with respect to a movement towards full sustainability. Additionally, we supplemented this information with interviews conducted with Biosphere Reserve managers in Phase 3 of our research.

2.2 Phase 2: Evaluation Criteria for Community Engagement

In order to address our primary question around strategic methods in community engagement, we needed a means of comparing and evaluating community engagement methods in a systematic way. We used a literature review and exploratory interviews, to seek existing evaluation criteria that could be applied to community engagement methods in exercises such as community planning. We also wanted something that would be able to capture the range of bottom-up and top-down organizational approaches because we were aware that some Biosphere Reserve processes were initiated at the grassroots level from the community and others were mandated by government bodies.

The literature review was in the domain of assessment criteria for community engagement. Interviews early in the process were more focused on seeking potential leads on more literature in the area while interviews

latter on were focused on confirming the potential appropriateness of the existing criteria that we had found. Specifically, once we discovered the possibility of using a combination of the Ladder of Citizen Participation (Arnstein 1969) and process characteristics from The Social Dimension of Sustainable Development: Guidance and Application thesis (Benaim, Collins, and Raftis 2008) we sought expert feedback on this approach.

Our Phase 2 interviews included:

- André Benaim, MSc in Strategic Leadership towards Sustainability alumnus and co-author of The Social Dimension of Sustainable Development thesis,
- Edith Callaghan, MSc in Strategic Leadership towards Sustainability visiting professor at BTH (visiting from Acadia University),
- Alison Cretney, MSc in Strategic Leadership towards Sustainability 2011 graduate and engagement practitioner,
- Phil Long, MSc in Strategic Leadership towards Sustainability 2011 graduate and engagement practitioner,
- Viviana Lopez, MSc in Strategic Leadership towards Sustainability alumnus and PhD candidate in domain of UNESCO Biosphere Reserve Success Indicators,
- Tracy Meisterheim, MSc in Strategic Leadership towards Sustainability 2011 graduate and engagement practitioner.

2.3 Phase 3: Strategic Methods in Community Engagement in UNESCO Biosphere Reserves

Phase 3 was designed to move beyond the theoretical and overarching planning framework from Phase 1 and used the Ladder of Community Participation and the five Process Characteristics that were selected as evaluation criteria for community engagement in Phase 2 to further explore strategic methods in community engagement. The objective was to document a list of methods in community engagement that had been used by candidate regions and that were associated with each of the five Process Characteristics. Specific data around the Ladder of Citizen Participation was also collected in order look at the general type of engagement that was being used within each region.

This research was designed to learn about community engagement methods in the three to nine year planning process leading up to the actual Biosphere Reserve application. We believed that methods in community engagement during this formative time period would set the tone for future partnerships and relationships when a region actually achieved designation and therefore chose to focus in on this time period within our research.

First we identified European and North American regions that had applied for Biosphere Reserve status within the past four years in order to increase the relevance to the EuroMAB region. We were also aware that regions within this time frame would also likely have a stronger emphasis on balancing sustainable development and conservation, instead of the earlier Biosphere Reserve concept that emphasized strictly ecological conservation.

In our preliminary research we were advised to choose regions that were similar in size and that had similar ecosystems, in order to be better able to focus on our area of interest, without being distracted by variables that might have large impacts on the planning process or regional priorities (Lopez 2011). Following this advice we chose regions with populations under 500,000 people, with coastal or forest regions with similar resources and landscapes. The ability to complete English interviews was also a factor in this selection.

The final sample included the following six regions: Blekinge Archipelago (Sweden), Lake Vänern Archipelago (Sweden), Nedre Dalälven (Sweden), Bay of Fundy (Canada), Manicougan-Uapishka World Biosphere Reserve (Canada) and Lake Vättern (Sweden). The Biosphere Reserve Coodinator in each region acted as our primary interview contact. Please refer to Appendix C “Biosphere Region Profiles” for additional information about these six regions.

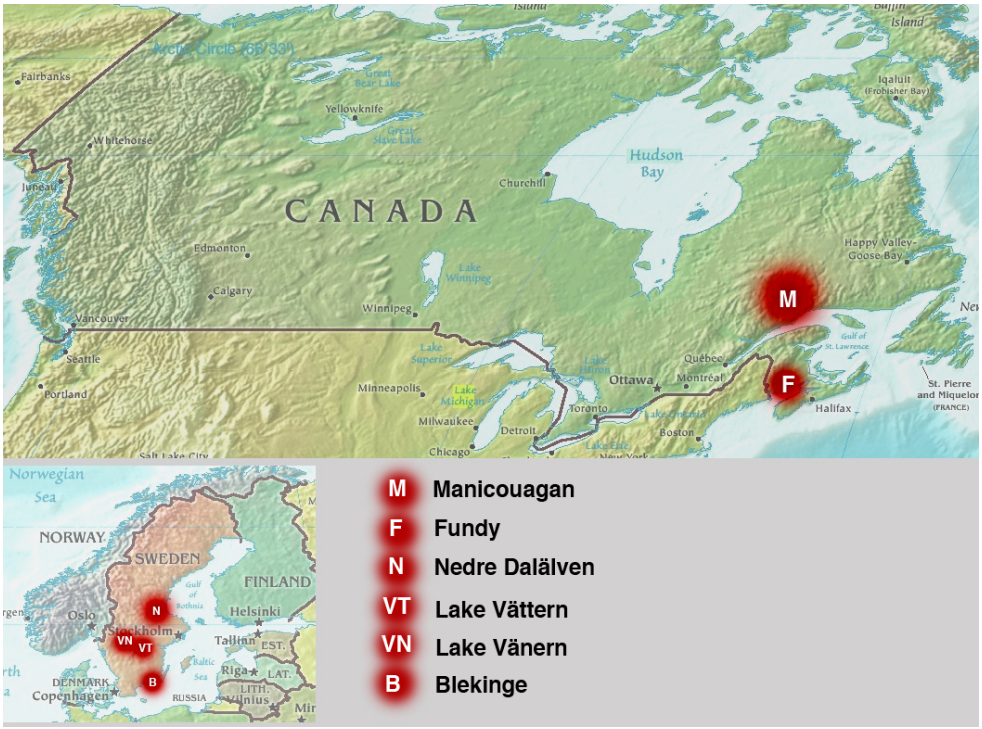

Figure 2.1. Location of Biosphere Reserves Interviewed in Canada (above) and Sweden (lower left)

The next step was to examine the websites and related documents from all six of our regions. This content analysis included UNESCO Biosphere Reserve Nomination Form applications, literature about the region and other information that had been sent to us from our regional contacts. These details were used to help prepare for the interviews and were used to develop some specific questions for each region.

The next step was to develop a one and a half hour semi-structured interview that we used consistently with each region. Within this standard interview template we introduced our research topic, introduced the definitions of each process characteristic (transparency, cooperation, openness, involvement and inclusiveness) and then asked four questions related to each Process Characteristic in order to learn about methods that related to these Process Characteristics, including for example:

- To what extent did you see transparency in the planning process? How did you see this and can you give examples of what was done to achieve this?

- If transparency was not seen in some cases, what were some barriers to this?
- Were there any specific methods (tools, actions or strategies) that you followed to achieve transparency?

Four questions were also developed to determine the level of community control in each region so that we would have data that could then be used to place regions on the Ladder of Citizen Participation. A sample script of the interview questions that were used in all regions can be found in "Appendix A: Interview Questions".

One interview was conducted in person and the other five were conducted over the phone. All interviews were recorded and then transcribed. Two researchers then blindly coded each transcript in relation to the five Process Characteristics and the Ladder of Participation.

The Community Engagement Assessment Tool that was developed in Phase 2 was then used after the transcription, to compile a Report Card that included a numeric rating (from one to three points, with half points possible) for each Process Characteristic, and the level on the Ladder of Citizen Participation (Level 1 through Level 8).

Due to the fact that the planning timeline leading up to regions submitting their UNESCO Biosphere Reserve application ranged from three to nine years, we saw a need to give each region an "Initial" Ladder level rating for the two to seven years leading up to the final year prior to application and an "Application" level rating for the year directly prior to application as seen below in Figure 2.2

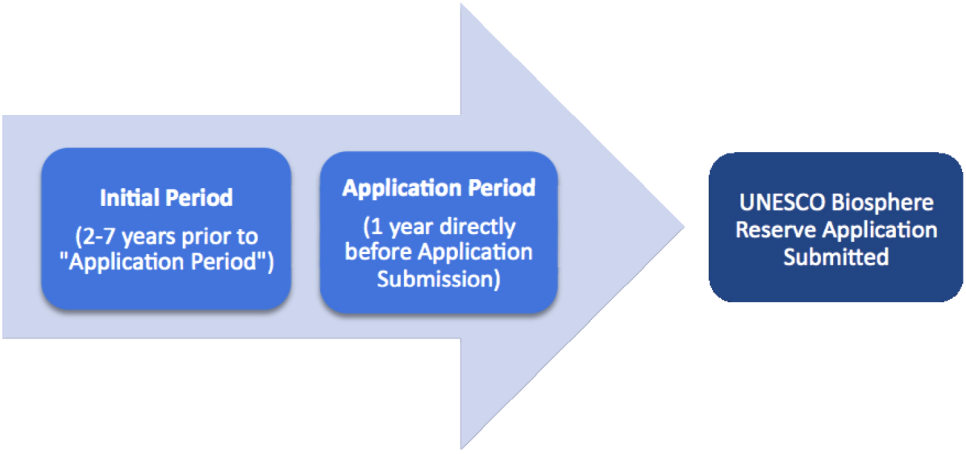

Figure 2.2. Two time periods of research - Initial Period and Application Period

This timeline differentiation was not done for the Process Characteristics as time did not seem to have such a direct effect here. The Report Card data also included a list of all methods of engagement and their relationship to one or more process characteristic. The Community Engagement Assessment Tool can be found in Tables 3.2 and 3.3, and an example of the Report Card can be found in Appendix B.

The two researchers prepared independent Report Cards for each region and then met together to share and compare their findings. From this process, one Report Card was then produced for each region. In summary, this Report Card indicated what methods for community engagement had been used for each region, the relationship of each method to one or more process characteristic, the rating of each process characteristic within the region (1 to 3 points) and the level on the Ladder (levels 1 through 8).

These six regional report cards were then used to write the Results section relating to Phase 3. When writing the Results section, we reported on the methods of community engagement that corresponded to the highest (i.e. best) scores in the Process Characteristics. The first step was to highlight Process Characteristics that had scored a 2, 2.5 or 3 in each of the regions. Methods related to these Process Characteristics were then examined. For example, if a region scored a 2.5 in transparency and openness, but a 1 in inclusiveness, then only methods relating to transparency and openness were included in the Results section.

It is important to note, that the objective of our research was to look at methods of community engagement and to explore methods that had a strong relationship with these Process Characteristics. Our focus was not on comparing regions to show that one region had been more strategic than another. Because of this, we have not included the names of the regions throughout our Results section and instead have used "Region 1" through "Region 6" to examine this relationship.

This process of selection resulted in 60 different methods of community engagement that contributed to regions achieving better transparency, cooperation, openness, involvement and inclusiveness. As these 60 methods were examined, three themes became apparent: 1) Decision Making and Organizational Structures, 2) Physical and Virtual Spaces, and 3) Relationship Building and Communication. Methods from these three theme areas were then shared. These were themes that were developed by the research team with the target audience of Biosphere Reserve Coordinators in mind.

The Decision Making and Organizational Structures theme includes methods relating to how decisions were made, the decision making structure and the organizational structure. The Physical and Virtual Spaces theme includes methods that have been used relating to the creation of physical or virtual spaces, such as the use of skilled, experienced facilitators to create physical environments that encouraged involvement for example. The Relationship Building and Communication theme looks at methods including communication planning, networking events and an inventory of other like-minded organizations. The 60 methods were categorized into these three themes and are all included in the Results section. Barriers to each of the Process Characteristics, from the interviews, were also included in the Results section.

In order to further refine these 60 methods in community engagement to find the best methods, we then went through another similar process, looking only at methods that related to Process Characteristics in each region that had achieved the highest rating of 3. We also saw within our Report Card process, that many methods contributed to multiple Process Characteristics. As we were interested in methods that would create higher process characteristic ratings in each region, we then also selected synergistic methods that were related to three or more Process

Characteristics. A list of 20 methods was then created, and from this, nine overarching strong and synergistic methods of community engagement were compiled and included in the final section of Phase 3 Results. This selection process is shown below in Figure 2.3.

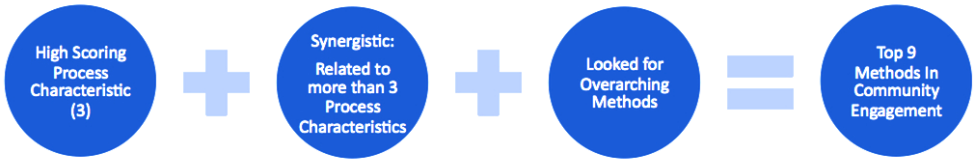

Figure 2.3. Selection Process for Top Methods in Community Engagement

Generally within Phase 3 our expected results were that we would find regions at a variety of positions on the Ladder of Citizen Participation due to the fact that there are very few guidelines around community engagement currently offered to Biosphere Reserves by UNESCO. We also thought we might see some regions organized from the bottom up and some structured top down, which may be due to outside factors such as national political structures/policies. We expected this could impact their Ladder level. Based on our literature review and early data collection highlighting the lack of guidelines from UNESCO, we expected that some regions would satisfy the five Process Characteristics at a higher level and some regions would be at a lower level. We also thought there may be a correlation between positions on the Ladder and the rating of the five Process Characteristics, so that potentially regions with higher Process Characteristic ratings might also score at higher levels on the Ladder.

In order to fully answer our main question of "What are strategic methods in community engagement that could help the UNESCO Biosphere Reserve planning process when moving regions towards sustainability?" we revisited our findings from Phase 1, in regards to an ideal model of Biosphere Reserves using the FSSD, with findings from Phase 3 in order to fully discuss strategic methods in community engagement within this context. The overarching response to the question can be found at the beginning of the Discussion section.

The creation of an online “Guidebook for Strategic Methods in Community Engagement for UNESCO Biosphere Reserves” that can be found at http://web.me.com/pierrejohnson/strategiccommunityengagement was produced in order to share these findings with European and North American Biosphere Reserves.

3 Results

3.1 UNESCO Biosphere Reserve Planning Process and the Framework for Strategic Sustainable Development

In Phase 1, we explored how the Biosphere Reserve planning process could be enhanced by the FSSD. We collected data on the current Biosphere Reserves and used the generic five-level framework to categorize the information in a structured way. We then built an ideal model using the FSSD in order to understand how Biosphere Reserves could theoretically lead regions towards sustainability by describing the planning process if it were to operate fully aligned with the FSSD. The results first describe the current Biosphere Reserve planning process at each level of the generic five-level framework, and then a subsequent description of the ideal model using the FSSD follows. Lastly, we identified gaps and areas of contribution of the current planning process when compared to the ideal model (see Table 3.1 at the end of this section for a summary).

3.1.1 Current Biosphere Reserves Understood Using a Five-Level Framework

System Level: Biosphere Reserves function as a planning and management tool for ecological conservation, economic and social development, and logistic support for education and research. Biosphere Reserves were established by the United Nations Educational, Scientific and Cultural Organization (UNESCO) as part of the Man and the Biosphere (MAB) Programme in the 1970s (UNESCO 2010). A Biosphere Reserve is a geographic area of significant human settlement and terrestrial and/or marine ecosystems made up of local communities, management agencies, scientists, non-governmental organizations, cultural groups, and regional economy (UNESCO 1996). Biosphere Reserves have an understanding of the inter-linkages within the sub-systems (economy, society, biosphere) and recognize the need to plan for future generations.

Success Level: Biosphere Reserves set out to balance the conservation of biological and cultural diversity with economic and social development by improving the relationships between people and their environment in

diverse regions globally (UNESCO 2011). Biosphere Reserves are part of the Man and the Biosphere Programme, designed as a scientific, interdisciplinary research and capacity building program to address the ecological, social and economic dimensions of biodiversity loss. Biosphere Reserves' three main functions are: 1) conservation of biodiversity and cultural diversity; 2) economic and social development; 3) and logistic support for education and research (UNESCO 2011). Additionally, of special importance is the involvement of local communities and the participation of all the interested stakeholders in the planning and the management of the entire area.

Strategic Level: Recommendations associated with each objective of the Biosphere Reserves show that a backcasting perspective to planning is being utilized. Recommendations do not overly prescribe Biosphere Reserve regions in their choices of actions. The range of options is broad and focused on the overall goals of the Man and the Biosphere Programme. Biosphere Reserve regions involve local communities and stakeholders in planning and decision-making processes.

Actions Level: Outlined in the Seville Strategy[1] and the Madrid Action Plan[2] are recommended actions for implementation of the Man and the Biosphere Programme at the international, national and individual Biosphere Reserve levels. The Madrid Action Plan includes four main action areas, with 31 targets and 65 actions to help implement the overall vision of the Man and the Biosphere Programme. For individual Biosphere Reserves, these actions range from conducting surveys and developing indicators to establishing participatory planning processes, communications strategies and incentive programs. These combined actions are intended to achieve the objectives of the Man and the Biosphere Programme and Biosphere Reserve concept.

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[1] Seville Strategy, developed in 1996, formalized the focus on balancing conservation of biological and cultural diversity with economic and social development (UNESCO 1996)

[2] Madrid Action Plan, created in 2008, sets out targets, indicators, timelines, and responsibilities along a series of actions related to overall goals of the Man and the Biosphere Programme (Stoll-Kleeman et al. 2010)

Tools Level: The Madrid Action Plan recommends certain tools for use in the implementation of specific actions, such as the Local Agenda 21[3] to guide Biosphere Reserves in open and participatory processes, and propose a variety of tools associated with the development of biological inventories (UNESCO 2008).

3.1.2 Ideal Model of Biosphere Reserves Using the FSSD

System Level: Ideally, Biosphere Reserves would be recognized as a geographic area of significant human settlement and terrestrial and/or marine ecosystems within the global socio-ecological system. Knowledge of the socio-ecological system, its natural cycles, as well as the relationship to those cycles through use of ecosystem services, resources and wastes, would enable community members, stakeholders and planners to have a better understanding of the system which they are working and living within. Biosphere Reserves would have an understanding of the basic (scientifically-derived) mechanisms that govern the global socio-ecological system and would appreciate the need to plan for future generations.

Success Level: The Biosphere Reserve regions would use the Sustainability Principles to understand how they currently contribute to the root causes of the global sustainability challenge. Biosphere Reserve regions would rely on these minimum conditions as a way to define their vision of a sustainable society. As outlined in the Introduction, the four Sustainability Principles state that:

> In a sustainable society, nature is not subject to systematically increasing:
> …concentrations of substances extracted from the Earth's crust;
> …concentrations of substances produced by society;
> …degradation by physical means; and
> In that society,
> …people are not subject to conditions that systematically undermine their capacity to meet their needs (Holmberg and Robèrt 2000; Ny et al. 2006).

Biosphere Reserve regions would preserve biological and cultural diversity, foster economic and social development and provide logistic support for

[3] Local Agenda 21 refers to the local implementation of the UN's Agenda 21 Programme which is a comprehensive action plan for sustainable development.

education and research while not contributing to societal violations of these principles.

Strategic Level: At the Strategic level, Biosphere Reserve regions would use backcasting as a planning methodology to move towards a sustainable society. Backcasting from the World Network of Biosphere Reserves vision "to ensure environmental, economic, and social (including cultural and spiritual) sustainability" (UNESCO 2008, 8) within the constraints of the four Sustainability Principles. Biosphere Reserve regions would use the ABCD planning process, that includes creating a vision, analyzing the current reality, brainstorming creative solutions to move towards the vision and then prioritizing these actions to create a strategic action plan for implementation (Robèrt 2000). Within the ABCD process, Biosphere Reserves would use these three prioritization questions: 1) Does this action proceed in the right direction?; 2) Does this action provide a "stepping stone" for future improvements?; and 3) Is this action likely to produce a sufficient return on investment to further catalyze the process? to choose the most strategic actions for implementation (Holmberg and Robèrt 2000). Biosphere Reserve regions would also use Process Characteristics to guide in the design and development of strategic plans for community engagement.

Actions Level: Biosphere Reserve regions would identify and implement appropriate actions, such as biological inventories, cooperation plans, incentive programs, ABCD planning process, which would fall in alignment with the strategic guidelines and enable progress towards their vision of success.

Tools Level: Biosphere Reserve regions would utilize the variety of tools available to carry out work related to biodiversity and cultural diversity including biological indicators and participatory planning processes, such as Local Agenda 21, as recommended in the Madrid Action Plan (UNESCO 1996). Tools selected would fall in alignment with the strategic guidelines and bring progress towards their vision of success.

3.1.3 Identified Gaps and Areas of Contribution

At the System level, although there is quite a clear recognition of system interactions within the economy, society and the biosphere within the Biosphere Reserve concept, there is a missing understanding of the basic

(scientifically-derived) mechanisms by which society could destroy the socio-ecological system.

At the Success level, the World Network of Biosphere Reserves (WNBR), within the Man and the Biosphere (MAB) Programme, states its vision is "to ensure environmental, economic, and social (including cultural and spiritual) sustainability" (UNESCO 2008, 8). However, Biosphere Reserve regions have no shared, scientifically-derived, principle-based definition of sustainability according to our analysis of the Seville Strategy and Statutory Framework of the World Network of Biosphere Reserves (1996), the Madrid Action Plan (2008) and the Biosphere Reserve Nomination Form (2004). In theory, they lack a clearly defined description of success. This was supported in our interviews when one Biosphere Reserve manager said "discussing sustainability, on different levels and in specific contexts, it can be hard to agree on a shared definition" (Jonegård 2011). Another manager said, "I think you need a big vision larger than the smaller parts. We are always talking about the 'living archipelago' and everyone agrees that we want people to live here and we want nature and a balance. But then we get into how many harbors, and boats and homes we should have and when you start to break it down it gets harder" (Hertzman 2011).

At the Strategic level, backcasting as an approach to planning underpins the recommendations provided to individual Biosphere Reserves. However, in theory, Biosphere Reserve regions are missing a clearly articulated definition of success in order to prioritize actions and measure progress when moving towards sustainability. This was supported in our interviews when one manager said "You need to have clear goals. You need to know where you want to go, not just where you are now. The specific actions should all be tied back to your goals" (Hertzman 2011). Biophere Reserve regions are also missing clarity around decision-making processes.

At the Actions level, the Man and the Biosphere Programme offers specific actions to individual regions which align with the overall objectives of the MAB Programme and enable Biosphere Reserve regions to progress towards their vision.

At the Tools level, while many tools are available to assist regions in implementing the recommended actions, there is minimal guidance on overall planning and decision-making structure to enable regions to

understand which tools are appropriate within the context of each region at any given time.

Table 3.1. Current Biosphere Reserves and Ideal Model Using FSSD

Level	Current Biosphere Reserves Using 5LF	Ideal Model of Biosphere Reserves Using FSSD	Gaps/Contributions Identified
System	Geographic areas of human settlement and ecosystems, an understanding of inter-linkages within society, the economy and the biosphere, and a recognized need to plan for future generations.	Understanding of relationships at regional level within global socio-ecological system, inter-linkages of subsystems, and basic (scientifically-derived) mechanisms by which society could destroy socio-ecological system.	Although Biosphere Reserves recognize local/region/global system interaction, an understanding of basic (scientifically-derived) mechanisms by which society could destroy the socio-ecological system is missing.
Success	Conservation of biological and cultural diversity; economic and social development; and logistic support for education (UNESCO 1996).	Understand boundary conditions of socio-ecological system, through conservation of biological and cultural diversity, economic and social development, and logistic support for education while not contributing to societal violations of the four Sustainability Principles (SPs).	Overarching goal of WNBR is "to ensure environmental, economic, and social (including cultural and spiritual) sustainability" (UNESCO 2008, 8), yet Biosphere Reserves do not share scientifically-robust, principles-based definition of sustainability.
Strategic	Backcasting underpins recommendations provided at international, national, and individual Biosphere Reserve levels and each recommendation relates back to specific objectives of Biosphere Reserve concept.	Backcasting from high level vision to "ensure environmental, economic, and social (including cultural and spiritual) sustainability"(UNESCO 2008, 8) within constraints of four SPs. Use 3 prioritization questions and process characteristics to choose appropriate actions to move strategically, step by step towards future goal.	Backcasting from a scientifically-robust, principles-based definition of sustainability and a way to measure progress towards success.

Actions	Recommended actions aim to achieve specific objectives. Ex. conduct surveys, develop indicators, participatory planning process, communications strategies, incentive program.	Use appropriate actions that fall in alignment with the strategic guidelines and bring progress towards the vision of success.	Actions provided are aimed at achieving specific objectives to bring progress towards their vision.
Tools	Tools for implementing certain recommendations are provided.	Use of appropriate tools, such as ABCD process, Local Agenda 21, Ecological Approach, etc., which fall in alignment with the strategic guidelines and bring progress towards the vision of success.	While various tools are available, there is minimal guidance to understand which tools are appropriate within the context of each Biosphere Reserve at a given time.

3.2 Evaluation Criteria for Community Engagement

Before we could address our main research question we needed a means of comparing and evaluating community engagement methods in a systematic way. This need is why we sought criteria to assess community engagement in regional sustainable development such as UNESCO Biosphere Reserves. Rather than create criteria ourselves, we looked to existing typologies and evaluation approaches that we could use to create metrics for, and that would be applicable to, regional planning and community engagement processes.

Our literature review and interviews on the subject of approaches to categorize and evaluate community engagement revealed several methods that shared a common element of rating community engagement based on the extent of citizen control in the process. The Ladder of Citizen Participation (Arnstein 1969), A Typology of Public Engagement Mechanisms (Rowe and Frewer 2005), When Suits Meet Roots: the Antecedents and Consequences of Community Engagement Strategy

(Bowen, Newenhan-Kahindi, and Hewemans 2010) and From Words to Action, The Stakeholder Engagement Manual Volume 2: The Practitioner's Handbook on Stakeholder Engagement (Krick et al. 2005) each include a number of levels to express where a particular method falls in the continuum of public empowerment. This continuum ranges from no public say to fully under the control of the public. The specific number of levels in the various approaches ranges from three to eight. No single typology was superior in our review. For the purposes of this research we chose to use The Ladder of Citizen Participation because it was most often cited and the definitions of the levels in it are relatively straightforward, covering the full range of the continuum of public control.

The eight levels of Arnstein's Ladder were named as follows from 1, where participants have the least control, to 8, where they have the most:

1. Manipulation
2. Therapy
3. Informing
4. Consulting
5. Placation
6. Partnership
7. Delegated Responsibility
8. Citizen Control

We opted to use the numbers as opposed to the names of the levels to avoid the negative connotations of some of the names and the implication that a higher level is always better. There is evidence that participation levels are best tailored to the context and objective of the process (Schultz, Duit, and Folke 2011). The way we applied the Ladder in our assessment tool is shown in Table 3.2.

Table 3.2. Scoring for the Ladder of Community Participation

Rung on Ladder (score)	**control over decisions and resources (first question)**	**communication (second question if required)**	**approach or example**
Level 1	all planners; no participants	one-way	education, PR
Level 2	all planners; no participants	one-way	adjusting values
Level 3	all planners; no participants	one-way	jargon responses to unsolicited questions
Level 4	all planners; no participants	two-way	surveys, questionnaires. neighbourhood meetings
Level 5	mostly planners; least participants	two-way	advisory boards, task force, committees
Level 6	negotiated; shared	two-way	working groups
Level 7	negotiated; least planners; mostly participants	two-way	working groups
Level 8	no planners; all participants	two-way	planners on advisory panel or absent

We required a means of assessing the quality of the engagement because the Ladder in Table 3.2 on its own was not designed to rate how good a particular engagement method was. The five Process Characteristics from The Social Dimension of Sustainable Development: Guidance and Application thesis (Benaim, Collins, and Raftis 2008) were chosen to provide a systematic measure of quality. We used the definitions of the five Process Characteristics without modification:

1. Cooperation is to "have each party contribute what they can in order to best serve their needs in a mutually beneficial way".
2. Involvement is "an ideal of communication and accountability in organizations and communities where motivations, driving factors, and impacts of all decisions and actions are made publicly available".
3. Inclusiveness is "ensuring the needs of stakeholders are acknowledged and respected even if they do not actively contribute to the process".
4. Openness is when "a community or organization has the willingness to rethink and review its own values and processes",
5. Transparency is "an ideal of communication and accountability in organizations and communities where motivations, driving factors, and impacts of all decisions and actions are made publicly available".

As per *The Social Dimension of Sustainable Development* thesis, meeting those five characteristics would reduce the chance of having barriers to people meeting their needs in the process. Needs in this case refer to the nine basic human needs of: identity, freedom, protection, idleness, understanding, subsistence, affection, creativity and participation (Max-Neef 1991). Having an engagement process which meets these characteristics means the decision-making process is being conducted in a way that has higher likelihood of generating a healthy social system, thus positively contributing to compliance with the Sustainability Principles. As such, decision-making processes that utilize these five characteristics are seen to be 'more strategic' as they have a greater chance of helping move towards compliance with the Sustainability Principles (Robèrt et al. 2010).

Table 3.3 shows the scoring system we developed for the characteristics.

Table 3.3. Scoring for the Five Process Characteristics

	1	2	3
Cooperation	The parties in the process primarily served their own needs.	The parties acted to serve some of their own needs and some of the needs of others.	The parties in the process served each others' needs equally to the benefit of all.
Transparency	Access to actions, motivations, and impact of decisions were confined to a select few.	Access to some actions, motivations, and impact of decisions were accessible to the public.	Access to all actions, all motivations, and impact of all decisions were fully accessible to the public.
Openness	The organization preferred maintaining the status quo.	The community or organization was willing to consider some changes in its processes.	The community or organization was willing to consider changes to its processes and some of its values.
Inclusiveness	A few of the needs of a small set of stakeholders were acknowledged and respected.	Some of needs of some of the stakeholders were acknowledged and respected.	The needs of all stakeholders were acknowledged and respected.
Involvement	Participants and stakeholders did not have active roles.	Participants and stakeholders had opportunities to actively contribute to the process.	Participants and stakeholders had active roles throughout the process.

The scoring approaches of Table 3.2 and Table 3.3 together formed our Community Engagement Assessment Tool. This was our answer for what are evaluation criteria for community engagement in regional sustainable development, such as UNESCO Biosphere Reserves. This Community Engagement Assessment Tool became an integral part of our methods in Phase 3.

3.3 Strategic Methods in Community Engagement

The following section includes results from the main research question "What are strategic methods in community engagement that could help the UNESCO Biosphere Reserve planning process when moving regions towards sustainability?"

3.3.1 Ladder of Citizen Participation

The Ladder of Citizen Participation was used to look at the type community engagement in each region. As explained in the Methods section, due to the fact that it took most regions from three to nine years to do their initial planning work and then submit their application for Biosphere Reserve status, we saw the need to give each region an "Initial" Ladder level rating for the first initial planning stage and an "Application" rating for the year directly prior to formal submission of the application. The "Application" timeline was our primary interest, so we will begin with this.

When the data from the six regional Report Cards were compiled (as per our Methods) three regions were rated at Level 5 on the Ladder and three regions were rated at Level 6, for the "Application" period.

The placement of all six regions in either Level 5 or Level 6 in this time frame was somewhat surprising as we expected to find a variety of positions on the Ladder due to the fact that there are very few community engagement guidelines currently offered by UNESCO.

However, when also including ratings from the "Initial" planning period, it is interesting to note that some regions moved from lower levels to higher levels on the Ladder, such as one region that moved from Level 4 to Level

5 and two regions that moved from Level 5 to Level 6. There was also one region that moved from a higher rung to a lower rung, from Level 7 to Level 6. Future plans, around what the Biosphere Reserve planning organizations would look like after they received the Biosphere Reserve designation were not included in this rating, but it was clear that, as regions submitted their application and moved on to become designated Biosphere Reserve areas, in many cases their organization would change and so would their Ladder rating. (Note: Complete Report Cards have not been included in the Appendixes, but can be acquired by contacting the authors.)

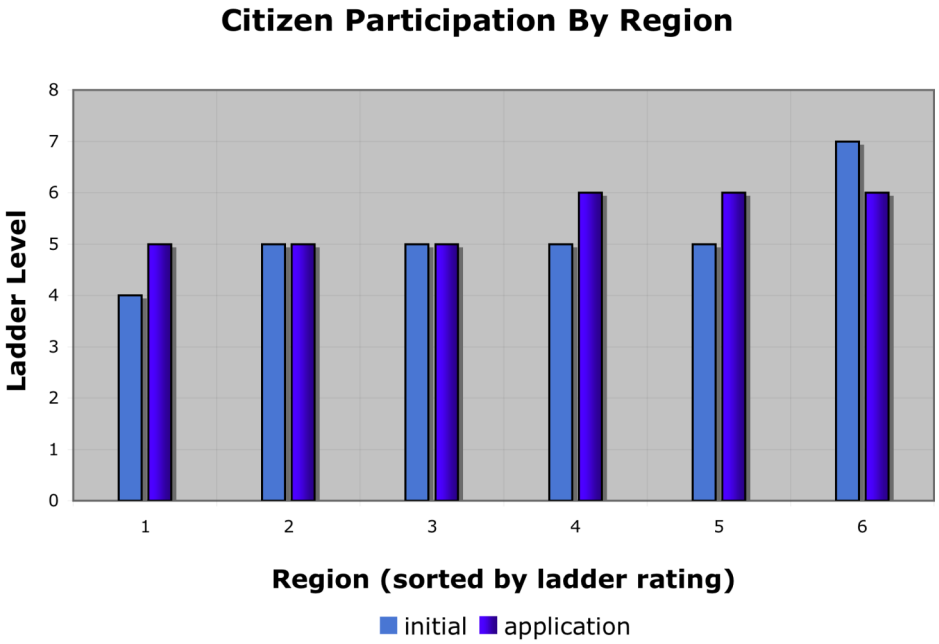

Figure 3.1. Ladder of Participation during initial planning phase and at application

In summary, if the longer timeline (Initial and Application stages) is taken into consideration, more diversity in levels on the Ladder become apparent. However, when looking only at the Application timeline, all six regions had similar ratings.

3.3.2 Five Process Characteristics

The five Process Characteristics of community engagement (transparency, cooperation, openness, inclusiveness and involvement) identified in Phase 2 were examined in each of the six regions through interview questions. The Community Engagement Assessment Tool was then used to give each Process Characteristic in a region a rating from 1 - 3 points. Figure 3.2 below shows the results, with the regions presented in the same order as the previous graph (sorted by Ladder rating).

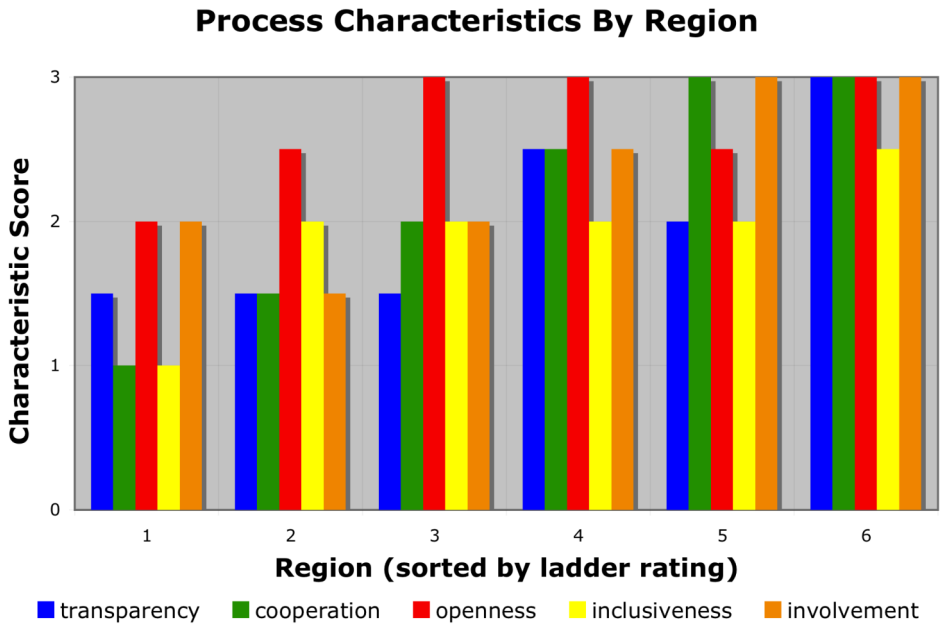

Figure 3.2. All six regions and their five Process Characteristic ratings

As can be seen in Figure 3.2 there was a range of Process Characteristic scores within the regions, meaning that one region could have a higher score in involvement and a lower score in inclusiveness, for example. There was also variation with Process Characteristic scores across the regions, meaning that some regions generally had lower scores on all Process Characteristics and some had higher scores. Based on our literature review, we had expected that some regions would satisfy the five process characteristics at a higher level and some regions would be weaker, so these findings did match with what we had expected.

3.3.3 Ladder of Citizen Participation and Process Characteristics

When looking at the six regions and comparing the Ladder of Citizen Participation ratings with the Process Characteristics ratings we expected to see that regions with higher Ladder ratings would possibly also have higher rated Process Characteristics.

In order to help visually explain our findings we placed the regions on the following graph in ascending order (like above) but used an average rating from their Ladder of Citizen Participation ratings (from their Initial and Application phases). These averages ranged from 4.5 to 6.5 on an eight point scale. These numbers are represented by the first, lighter columns. To look at the potential correlation between these Ladder ratings and the Process Characteristic ratings in one region, we then averaged the five Process Characteristic ratings to get one number, which has been represented by the second dark columns.

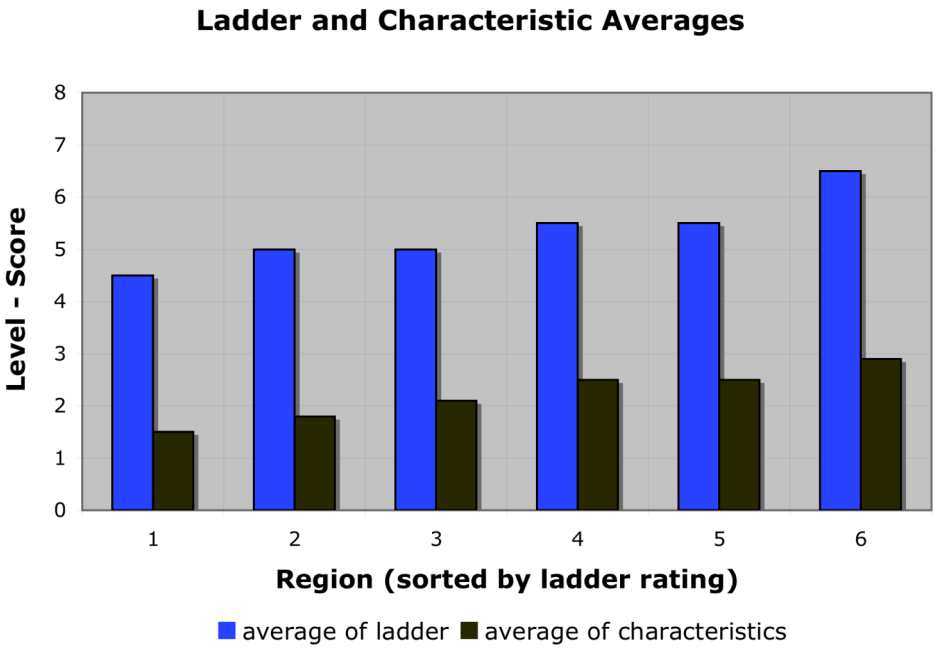

Figure 3.3. Ladder and Characteristic Averages

These findings did show a positive correlation in all regions and this is further emphasized if you look at the two ends of the spectrum with Region 1 and then Region 6. Region 6 was the one region that had reached Level 7 on the Ladder in the initial planning stages and had an average Ladder rating of 6.5. It did also have the highest Process Characteristic ratings with four Process Characteristics at 3 and one at 2.5 for an average of 2.9. At the other end of the spectrum, Region 1 had come from the lowest Ladder level of 4 in the initial planning stage with an averaged Ladder rating of 4.5 and did also have the lowest scores in its Process Characteristics with an average of 1.5. Regions 2 and 3 had similar rating on both the Ladder and the Process Characteristics and then Regions 4 and 5, also followed this general pattern of having high Ladder ratings and higher Process Characteristic ratings.

3.3.4 Methods of Community Engagement related to Process Characteristics

During the interviews with each of the six regions we specifically asked about barriers that regions faced when trying to meet these Process Characteristics and methods in community engagement that related to each of these five Process Characteristics. In each of the following sections, these barriers will be introduced and then followed by good methods (those that were related to a Process Characteristic rating of 2, 2.5 or 3 Process Characteristics. As explained in the Methods section these methods in community engagement will be broken into the three themes of Decision Making and Organizational Structures, Physical and Virtual Spaces, and Relationship Building and Communication.

3.3.5 Transparency

Transparency has been defined as “an ideal of communication and accountability in organizations and communities where motivations, driving factors, and impacts of all decisions and actions are made publicly available” (Benaim, Collins, and Raftis 2008, 10). When rating regions in transparency we found three regions at the lower end of the scale at 1.5, one region at the 2 level, one at the 2.5 level and one at the highest level of 3. Transparency was a Process Characteristic that achieved lower ratings

across regions with the use of the Community Engagement Assessment Tool.

Transparency Barriers

Barriers to achieving transparency included available time and resources, clarity of purpose and vision, complexity of issues and the underlying levels of trust in a region (Jonegård 2011; Hertzman 2011). Not having clarity around the vision or not communicating changes in the vision was identified as a barrier to transparency (MacTaggart 2011; Jonegård 2011). The complexity inherent in planning for conservation and sustainable development on a regional level also creates a challenge for true transparency (Jonegård 2011). The accountability aspect of transparency is also a challenge for regions where there is a level of distrust in government (Spring 2011). When there is a perception of authorities running the program, regions must also work harder to show transparency (Hertzman 2011). Also, if there is a perception of application staff being linked to authorities, then motivations can be unclear and further communications must be done (Hertzman 2011).

Decision Making and Organizational Structures Related to Transparency

The use of a flat decision making model and the use of co-management practices were linked to higher levels of transparency in the planning process (Jonegård 2011). Sharing decision making responsibilities with diverse stakeholders was also a general method that linked to higher levels of transparency (Messier 2011).

Physical and Virtual Spaces Related to Transparency

Spaces that encourage transparency can be created within the physical region or though the creation of an online community. Neutral physical spaces were seen to be very important in terms of transparency, and this included the avoidance of government offices (Hertzman 2011). The creation of an online, virtual community was also seen to increase transparency, as further explained below (MacTaggart 2011; Messier 2011).

Regions that placed a large emphasis on communications expertise and planning also rated much higher in terms of transparency. The hiring of communications experts as consultants or core members of the team (MacTaggart 2011; Jonegård 2011; Messier 2011) was as a common trend. The creation of strategic communications plans (MacTaggart 2011; Jonegård 2011) created key opportunities for transparency.

Within these plans, the use of media relations including media releases and media events was also seen as a powerful way to increase opportunities for transparency (Jonegård 2011; MacTaggart 2011; Messier 2011), along with the use of communication tools such as newsletters and educational brochures to share information about the Biosphere Reserve planning process (Jonegård 2011; MacTaggart 2011). The creation of community events such as special events and field days, community displays, joining other group's community events and meetings, and other educational events were seen as a central method that were used to achieve a higher level of transparency (Jonegård 2011; MacTaggart 2011).

The use of social media including a Ning platform (custom social website), regional blogs, the use of Facebook and a project website to engage stakeholders and community members was also seen in some regions and was linked to higher levels of transparency (MacTaggart 2011; Messier 2011). The sharing of minutes from planning meetings was also an important element relating to the online, virtual community (Jonegård 2011; MacTaggart 2011).

One specific relationship building method used to increase opportunities for transparency in the planning process was to send the draft Biosphere Reserve application to a large group of stakeholders, with the invitation for an update meeting for more information and then a feedback session (Jonegård 2011).

3.3.6 Cooperation

Cooperation is to "have each party contribute what they can in order to best serve their needs in a mutually beneficial way" (Benaim, Collins, and Raftis 2008, 9). When rating regions in cooperation we found a larger spread of ratings across regions with one region at the 1 level, one region at the 1.5

level, one region at the 2 level, one region at the 2.5 level and two regions at the highest level of 3.

Cooperation Barriers

The most common barriers to cooperation with the Biosphere Reserve planning process included misconceptions about what a Biosphere Reserve is (Spring 2011; Hertzman 2011) and what sustainable development really means (Hertzman 2011). Without clarity to these two overarching questions it was very challenging for diverse stakeholders to cooperate together. Differences in vocabulary and terminology used by each stakeholder group were also a challenge as large misunderstandings sometimes took place based on these differences (Jonegård 2011). Within a region, it is also important to be aware of past and current conflicts or preconceptions that may inhibit certain groups from collaborating (Jonegård 2011). The lack of long term planning was also identified as a challenge (Spring 2011; Jonegård 2011).

Decision Making and Organizational Structures Related to Cooperation

Within the six regions there were three decision making and organizational approaches that were linked to a higher level of cooperation:

- Co-learning Reciprocity Approach - One region with a high level of cooperation developed a model for co-learning and reciprocity where partners and stakeholders actively participate in each other's organizations, by offering their specific skills in a reciprocal way, creating long-term two-way cooperation. In this model "we ask our partners to develop our capacity to become their best advisors" (Messier 2011).

- User Centered /Co-management Approach - This approach included listening to diverse stakeholders to see what their priorities were and also working with landowners, non-governmental organizations and local authorities to cooperatively manage their local resources and resolve conflicts. In terms of co-creating priorities and actions with stakeholders, one region had changed the direction and focus of the work after applying this approach and saw positive results, "This user-centered focus also encourages community members to better share their knowledge and skills in areas that matter to them" (Hertzman 2011). One example of co-management is "walking the land and marking trees together for conservation or cutting" (Jonegård 2011).

Östra Vätterbrantern Governance Model - One region created the 'Östra Vätterbrantern Governance Model' that is "not about governance but cooperation at the same level". This flat model is run, in this case, by all seven groups of stakeholders instead of one or two regional authorities (Jonegård 2011).

Physical and Virtual Spaces Related to Cooperation

In terms of creating spaces for cooperation one region hired consultants specializing in "social technology" that used tools like 'Open Space Technology' and 'World Cafe' to host meaningful conversations to bridge gaps in understanding, find commonalities and to stimulate cooperation (Messier 2011). (For further details around four 'social technologies' and their application please refer to Appendix D.) Another region put an emphasis on holding meetings outdoors, with the understanding that, "If you put different stakeholders around a boardroom table they will often disagree, but if you take them for a walk through the forest that they are trying to make decisions around, then cooperation will be much more likely" (Jonegård 2011). This links into the idea that many regions had around the importance of finding a neutral arena and location for dialogue, especially when dealing with conflicts (Jonegård 2011; MacTaggart 2011). Field trips and research trips were also seen to relate to cooperation and trust building (Hertzman 2011;MacTaggart 2011).

Relationship Building and Communication Related to Cooperation

A commonality between four of the six regions was the use of the Biosphere Reserve as a connector or "bridge building organization" between many different types of organizations, networks and municipalities (Messier 2011; Hertzman 2011; MacTaggart 2011; Jonegård 2011). In many regions this was the first time a regional planning process had been initiated so many opportunities for partnerships and cooperation existed. The use of dialogue within this bridge building work often helped illuminate synergies, commonalities, along with challenges and opportunities that municipalities or different stakeholders within a region shared (Hertzman 2011).

Specific opportunities for cooperation included co-creating the annual action plan and priorities for the year with stakeholders (Hertzman 2011). Another region had each stakeholder group or working group create part of the action plan, so that people with expertise in water management wrote

the water chapter and people with expertise in tourism wrote the tourism chapter (MacTaggart 2011). The final plan represented a cross section of knowledge and expertise from the entire region.

3.3.7 Openness

Openness is when "a community or organization has the willingness to rethink and review its own values and processes" (Benaim, Collins, and Raftis 2008, 10). When rating regions in openness we found one region at the 2 level, two regions at the 2.5 level and three regions at the 3 level. This is the process characteristic that had the highest overall rating, with all regions rated at the 2 level or higher.

Openness Barriers

Openness barriers included the lack of neutral turf for meetings (Jonegård 2011) along with the lack of time, resources and patience that are needed for a truly open process (Hertzman 2011). There was also some discussion around when openness is a good thing and when it becomes a barrier to reaching your vision. Many regions agreed that openness is good when planning how to reach your vision but that core values and the vision- once it has been agreed upon by your stakeholders- should remain quite firm. Generally there was a "need to balance openness with the need to keep the process moving forward"(Ericson 2011).

Decision Making and Organization Structures Related to Openness

Decision Making and Organization Structures were the two most important areas when looking at the openness of the planning process within the six regions. The majority of the regions cited the need to reorganize their decision making models to better represent larger group of stakeholders (MacTaggart 2011; Jonegård 2011; Messier 2011; Hertzman 2011). Even in regions that began their planning process with a top down approach, there was still clarity that "it's not about the authorities running this process, the process is run by all seven main stakeholder groups" (Jonegård 2011). The use of planning advisory groups (Spring 2011; Hertzman 2011) and other models that encouraged taking diverse and new ideas into account contributed to higher levels of openness. The other commonality was that the majority of the regions were moving towards the establishment of a Non-Governmental Organization as they wanted the flexibility and the

freedom to think and act in a way that represented the true interests of their region (MacTaggart 2011; Messier 2011).

Physical and Virtual Spaces Related to Openness

The use of neutral spaces was related to higher levels of openness. Having meetings away from municipal buildings, such as in community centers or other similar spaces and bringing in an outside facilitator was seen as important (Jonegård 2011; Hertzman 2011; MacTaggart 2011). The role of the Biosphere Reserve Coordinator was also identified as being important to openness, in that they should "try to lift questions to the group, but never steer the discussion" (Hertzman 2011).

Relationship Building and Communication Related to Openness

The creation of stakeholder engagement guidelines including: the desire to work with all groups (Jonegård 2011; Spring 2011), to listen to all ideas even if they are not in the official plan (MacTaggart 2011), and to be open to discovering who your real champions are, were all seen as linked to higher levels of openness (Spring 2011; Hertzman 2011).

Other examples of actions that regions have taken that resulted in increased levels of openness have included the use of a community forum to create and adopt the Biosphere Reserve's mission, vision and values (Messier 2011). Making extra time available to engage with and listen to stakeholders, over informal coffees, at the fishing docks or in community meetings all created opportunities for openness (Spring 2011; Hertzman 2011; Messier 2011).

3.3.8 Inclusiveness

Inclusiveness is "ensuring the needs of stakeholders are acknowledged and respected even if they do not actively contribute to the process" (Benaim, Collins, and Raftis 2008, 10). When rating regions in inclusiveness we found one region at the 1 level, four regions at the 2 level and 1 region at the 2.5 level. This was the Process Characteristic that had the lowest cumulative scores across the regions when using the Community Engagement Assessment Tool.

Inclusiveness Barriers

A lack of time and resources were seen in many regions as barriers to higher levels of inclusiveness in terms of engaging people that are not actively involved in the process and in terms of managing a planning process with more stakeholders (Hertzman 2011; Jonegård 2011). "We have an "Open Door" policy but not enough time to include some groups that are not currently at the table," explained one region (Hertzman 2011). The need for a generation and gender shift was also identified (Jonegård 2011; Hertzman 2011). The application form with its focus on scientific knowledge, currently does not encourage the participation from a wide cross section of a region (Spring 2011). A lack of clarity around the vision and purpose of the Biosphere Reserve region also made some groups or individuals feel alienated or not interested in being involved with the program (Jonegård 2011).

Decision Making and Organizational Structures Related to Inclusiveness

Organizational structures that encourage inclusiveness have been seen in many regions. The creation of an "Orientation Table" composed of 30 to 40 stakeholders that were not originally around the planning table was effective at bringing new perspectives to the planning process in one region (Messier 2011). The creation of "Community Councils" where everyone was invited to attend and up to 80 people and organizations were invited in some regions, has also been seen to relate to inclusiveness (Hertzman 2011). The creation of an "Ambassador Program" was also seen as a good way to "connect with people that are not actively around the table" (Hertzman 2011).

Another approach relating to inclusiveness is to work with the positive believers in a region and not to give energy to non-believers. Two regions cited this approach and explained that if you give positive people worthwhile reasons to be involved, then the non-believers will eventually come along on their own, leading to higher levels of inclusiveness (MacTaggart 2011; Jonegård 2011).

Physical and Virtual Spaces Related to Inclusiveness

Having an Open Door Policy for meetings and being clear that anyone is invited to join the planning space at any point in time, instead of having

fixed working groups that are closed once the planning process begins was related to higher levels of inclusiveness (MacTaggart 2011).

Relationship Building and Communications Related to Inclusiveness

The importance of ongoing stakeholder mapping was seen in regions as a way to look for gaps in stakeholder engagement and invite missing groups (Hertzman 2011; Jonegård 2011). Part of this mapping exercise can include asking participants "Who is not at the table?" (Hertzman 2011).

"Go to the people you want to be engaged with and do not always expect them to come to you" (Hertzman 2011), was one piece of advice. Inviting diverse stakeholder groups such as "children, adults and different interest groups to participate in different ways" was seen as important, along with extending community wide invitations to some events and meetings (Hertzman 2011). Tailoring events or discussion to different groups and using terminology that these specific groups understand was seen as a way to increase inclusiveness.

3.3.9 Involvement

Involvement is the "taking or being part of some action or attempt; a sharing, of tangible or intangible things. Individuals are involved actively in the form of bringing their unique ideas, talents and energy to a project" (Benaim, Collins, and Raftis 2008, 9). When rating regions in involvement we found one region at the 1.5 level, two regions at the 2 level, 1 region at the 2.5 level and two regions at the 3 level. After openness, this was another Process Characteristic that, when rated with the Community Engagement Assessment Tool, had higher scores across the regions.

Involvement Barriers

"You need to be aware that it takes a lot of time and effort for people to feel that they are involved - but it's worth the effort" (MacTaggart 2011). The long timeline of three to nine years, the lack of continuity in leadership, the need to continually re-engage people, a dependence on volunteers, a general lack of interest in the Biosphere Reserve designation, and a decision making process that was concentrated with the local authorities, coupled with an inherent distrust in government were all seen as barriers to involvement (Spring 2011; Ericson 2011; Hertzman 2011).

A lack of understanding around what a Biosphere Reserve was and how they could play a role was indicated in four of the six regions (Ericson 2011; Spring 2011; Hertzman 2011, Jonegård 2011). A focus on biology and conservation was seen as a deterrent to become involved in one region, and this became more of a barrier when a region put most of its energy into conservation and less energy into sustainable development (Hertzman 2011). Another related barrier was the lack of a clear definition of sustainable development (Hertzman 2011; Jonegård 2011). "It's often a challenge to have a real conversation about sustainable development, as most people really don't know what it is, or they have quite different perspectives," said one region (Hertzman 2011).

Decision Making and Organizational Structures Related to Involvement

Decision making models and organizational structures were seen in four of the six regions as important methods to increase levels of involvement within a planning process, through the creation or re-design of a decision making board to make it representative of a wide range of stakeholder groups (Messier 2011; MacTaggart 2011; Hertzman 2011; Jonegård 2011). In some cases this went beyond voting to having decisions made based upon consensus (MacTaggart 2011).

The larger size of a decision making board designed to ensure broad, equally weighted representation was also balanced in some regions by a smaller decision making board and then a large collection of stakeholder groups with a strategic level project implementation function in order to empower and involve stakeholders in actions (Messier 2011). Other regions had multiple levels of decision making teams, action-based teams and advisory teams.

Physical and Virtual Spaces Related to Involvement

The regions interviewed used a range of methods to create spaces that were conducive to increased levels of involvement. The use of "social technologies," as mentioned above, such as the use of Talking Circles, Open Space Technology and World Cafes (please refer to Appendix D for further details) were also used in regions that had the highest levels of involvement (Messier 2011). The use of trained "hosts" and skilled, experienced facilitators to create spaces that physically and psychologically encouraged involvement was also seen as a key method. Outdoor meetings

and inspirational spaces were also stated as methods used to increase levels of involvement (Hertzman 2011; Jonegård 2011).

A common focus across the regions was to find a way to "invite people to be involved in active roles where they can participate in sharing ideas and knowledge" (MacTaggart 2011). All six of the regions hosted themed workshops, seminars or working groups to attract and involve different people with different interests (Ericson 2011; Messier 2011; Jonegård 2011; Spring 2011; MacTaggart 2011; Hertzman 2011). Involving people within themed areas, seemed to be more effective in terms of involvement levels than more general seminars or planning sessions on sustainable development. The creation of a Biosphere Reserve online community was seen in two regions as key spaces that can contribute to higher levels of involvement.

Relationship Building and Communications Related to Involvement

Specific methods that were related to involvement included working with stakeholder groups to prioritize actions and create a focus for the year to come. Ideas would be created and shared, and then the annual calendar and plan would be created together (Hertzman 2011).

When preparing the application two regions shared the importance of taking time to listen to the local knowledge that was present in a region. This offered an important way of connecting with and genuinely involving a wide range of community members, members that then felt that they had been part of the process and would be more likely to participate in the future (MacTaggart 2011; Jonegård 2011).

3.3.10 Strong and Synergistic Methods in Community Engagement

The following nine strong and synergistic methods in community engagement have been included here as we were interested in methods that were linked to the highest rated Process Characteristic (rated at the 3 level) and also methods that were linked to three or more Process Characteristics. This list represents methods in community engagement that we would recommend as best practices when working to achieve high levels of transparency, openness, cooperation, inclusiveness and involvement within a region. The nine methods have been listed below from most synergistic

(methods that relate to all five Process Characteristics) to lower levels of synergy (methods that related to three Process Characteristics.)

Representative Organization

The use or adoption of a representative organizational structure was one overarching theme that was observed and was related to all five Process Characteristics (transparency, cooperation, openness, inclusiveness and involvement). Creating an organization that included a broad range of stakeholders as decision makers and as action-based teams was an incredibly powerful method of engagement. In some regions this was explained as a "user-centered planning process" (Hertzman 2011), in others there was a stronger focus on the "co-management of resources" (Jonegård 2011), and in many regions there was talk of flexible governance models that would change over time and continue to reflect the needs of a region. One Biosphere Reserve coordinator explained, "To include the community in every crucial and normal decision and gain community acceptance you must think about your organizational and decision making structure" (Messier 2011). This sentiment was echoed in other regions with statements like, "You need to let people feel that they are involved in something in order for them to be actively contributing"(MacTaggart 2011). The level of empowerment that was associated with a more inclusive governance structure was also noted, "We have changed the direction of our work by listening to people within our region. When you... engage with them on their issues, then they will bring their skills and knowledge to the table, so it creates a much richer experience" (Hertzman 2011). One region with a very inclusive and egalitarian organization was even able to take this a step further with the use of consensus decision making. "Decisions are always made by consensus: we have never had to really vote. Everybody has equal power around the table, whether you are the municipality, a landowner or an NGO" (MacTaggart 2011).

Communications Strategy

"If there is one word or skill that I would recommend to any region looking to attain Biosphere Reserve designation, it is communication… ultimately creating the ability to make people proud to be part of the Biosphere Reserve" (Messier 2011). Having communications experts on staff, creating a strategic communications plan and working actively with traditional and social media were linked to all five Process Characteristics. Three out of the six regions had dedicated communications staff. "This year we now have

two communications professional who work with us. We decided to hire communications experts instead of biologists. They are making our work much better" (Jonegård 2011). "We hired a communications expert and have been in the paper each month for the past 10 years" (Messier 2011). "You gain so much by working with the media to tell your positive stories. You get the interest and gain the confidence of the community and can do so much more in regards to the harder questions in a region" (Hertzman 2011).

Facilitated /Hosted Dialogue

"I think possibly (that) facilitation skills is a competency that is more important than others in work like this" (Hertzman 2011). Another method of community engagement that was related to all five Process Characteristics, this is about having facilitated or "hosted" spaces that encourage participants to really have meaningful dialogues, in a safe, respectful and open environment that is created by experienced professionals that really understand human dynamics and how to create a space that invites everyone to be an active participant. "We brought in experts that were really into social technology and were able to do innovative types of consultation. The old ways just don't work" (Messier 2011). The use of dialogue is very important when bringing diverse groups together. "We have used dialogue to solve problems and to learn how to value different perspectives. These organizations have not changed what they do or what their key values are, but they have developed together a common ground and common vision" (Jonegård 2011).

Invitation to Co-Create

Inviting participants and stakeholders to work together to co-create a vision or action plan within a region was another powerful method in community engagement that was linked to the four Process Characteristics of cooperation, involvement, openness and transparency. Asking people to have meaningful roles and responsibilities and then showing that you take their ideas seriously was important in multiple regions. "We had a group of 12 people that each wrote a chapter of an action plan for tourism development within the Biosphere Reserve. Each wrote the chapter they were experts on, so the bus company wrote the chapter on how to connect tourism activities by bus and train, for example" (MacTaggart 2011). Creating opportunities for genuine participation like this goes a long way in truly engaging diverse stakeholders in a region.

Neutral Spaces

The creation or use of neutral spaces for meetings was another important method in community engagement that was linked to openness, cooperation, involvement and transparency. The Biosphere Reserve coordinators generally seemed very aware of this and some regions were looking to create new offices and regional hubs in order to enhance the neutrality of the spaces they were using. Here is one example: "Fisherman just don't feel at home in the County Administrative Board office so we will be opening up a neutral office dedicated to Biosphere Reserve activities that will serve as a welcoming space for all stakeholders" (Hertzman 2011). Using existing neutral spaces was also highlighted and one region shared, "The best thing is to have meetings outside" (Jonegård 2011). Outdoor meetings were seen as a way to avoid conflict and get diverse stakeholders out in the environment together where they could learn and understand each other better than around a boardroom table.

Bridge Building and Networking

The introduction of the Biosphere Reserve concept in many regions created a new arena for bridge building and networking and this bridge building function was linked to high ratings in cooperation, involvement, inclusiveness and openness. "The Biosphere Reserve serves as an umbrella organization that allows you to make the right connections. There is a lot of connecting the right people to bring these projects into fruition" (MacTaggart 2011). Whether inviting diverse stakeholder groups into a new physical space or heading out into the community develop new partnerships, this networking function is incredibly important. "Go to the people you want to be engaged with, speak their language and adapt your structure to encourage their participation" (Hertzman 2011). "Increasing networking opportunities, locally and internationally was very important for us. We are sending four students to a Biosphere Reserve in West Africa as one example and are involved in the powerful network of 580 university chairs related to UNESCO, 7900 designated UNESCO schools and 564 other Biosphere Reserves" (Messier 2011).

Co-learning Reciprocity Approach

The 'co-learning reciprocity approach' is directly related to cooperation and also relates to high levels of involvement and transparency within a region. "It is about partners and stakeholders participating in each other's

organizations... We are asking our partners to develop our capacity to become their best advisors" (Messier 2011). Two-way versus one-way cooperation is a central idea here. Although 'two-way cooperation' may at first glance seem obvious, one region genuinely went out to see how they could strengthen other related organizations and then asked for the same in return, growing together. When looking at a longer timeline, like the three to nine years that it takes most regions to apply for the Biosphere Reserve designation, this interweaving of skills and energy was seen as even more important.

Trust Building

Trust building was a central element in much of what many of the regions were doing in terms of community engagement and was related to cooperation, transparency and openness. "Once this trust was built, the community really started to rally around the common vision" (MacTaggart 2011). "It is a lot about building trust and trust building is done on a personal level" (Jonegård 2011). These personal connections and relationships were also a central element to much of the work that was being done.

Working with the Positive

Focusing the often limited resources on the positive elements and stakeholders of a region, instead of battling with opposing groups was seen as a key method in community engagement that was linked to involvement, inclusiveness and cooperation. "It turns out the more you focus on strengthening the positives, giving them more arguments for being involved, then eventually the more negative groups or individuals will often say… Can we work this out?" (MacTaggart 2011). In a similar vein, another region, instead of working with groups who had the most power, chose to work "with those who are most interested" (Jonegård 2011).

4 Discussion

4.1 Recommendations for UNESCO Biosphere Reserves

The objectives of UNESCO Biosphere Reserves have evolved from being primarily about conservation to the present where conservation is a priority concurrent with economic and social development while the regions serve as learning laboratories and examples for the world. The evolution of Biosphere Reserves to encompass the sustainability challenge and to better engage communities is ongoing. We see the results of this thesis as fitting to that evolution of bolstering the sustainable development objectives and strategic planning process through further improvements in the community engagement processes.

In order to fully answer our main question of "What are strategic methods in community engagement that could help the UNESCO Biosphere Reserve process when moving regions towards sustainability?" we revisited our findings from Phase 1, in regards to an Ideal Model of Biosphere Reserves Using FSSD, with findings from Phase 3 in order to fully discuss strategic methods in community engagement within this context.

Our view is that strategic methods in community engagement can be determined by knowing where a region wants to go in terms of full sustainability, and a strategic planning framework for sustainability is necessary for this. Furthermore, having community engagement methods that actively contribute to the five Process Characteristics of transparency, cooperation, openness, inclusiveness and involvement is also necessary. The first step is for regions to adopt a strategic planning framework and once this planning umbrella has been adopted specific methods for community engagement that are most relevant to the issues of a region can then be selected.

4.1.1 First Recommendations and Key Findings: Strategic Planning Towards Sustainability

In relation to creating an overarching strategic plan, our first recommendations would be for Biosphere Reserves to:

- adopt the four Sustainability Principles within the FSSD as their definition of sustainability;

- backcast from high level vision within constraints of four Sustainability Principles; and

- use 3 prioritization questions and process characteristics to choose appropriate actions to move strategically, step by step towards that future goal.

These recommendations would ensure that the Biosphere Reserves move towards a fully sustainable future. UNESCO does not impose a definition of sustainability on Biosphere Reserves. It is up to each region to formalize the definition they use. This means it is possible to achieve Biosphere Reserve designation without a definition of sustainability that is comprehensive. It is our view that having Biosphere Reserves adopt the four Sustainability Principles from the FSSD would address this shortcoming in ensuring Biosphere Reserves create plans that will move towards full sustainability.

To further bolster the Biosphere Reserve planning process, we recommend using backcasting to plan from a high level vision within the constraints of the four Sustainability Principles, including utilizing the three prioritization questions and process characteristics to guide decision-making and selection of appropriate actions to move strategically, in a step-wise way towards sustainability. Having a shared language, such that is gained by the FSSD, would provide the definition of sustainability and planning processes that would help regions collaborate and share ideas.

4.1.2 Second Recommendations and Key Findings: Community Engagement

Our next finding and recommendation is specific to the community engagement challenge in Biosphere Reserves. The strong and synergistic methods listed above in section 3.3.10 should be considered as part of what needs to be done in creating and maintaining community engagement in the planning process for Biosphere Reserves.

With respect to achieving better community engagement, we suggest the strong and synergistic methods described in section 3.3.10:

- Representative Organization
- Communications Strategy
- Facilitated/Hosted Dialogue
- Invitation to Co-create
- Neutral Spaces
- Bridge Building and Networking
- Co-learning Reciprocity Approach
- Trust Building
- Working with the Positive

They should be employed keeping in mind that each Biosphere Reserve's context will be somewhat different. Therefore selection and application of the methods should be tailored to each Biosphere Reserve. Some methods of community engagement may prove to be a better fit in certain contexts.

To use the analogy of a recipe, our shortlist of nine methods is a list of excellent ingredients that should be considered, but the list itself is not a complete recipe for any region. These are the most effective and delicious nine ingredients that the chef's had in their pantries. Other good and more common ingredients are also important and over 50 of these have been identified above in the Results section. With these ingredients chefs in diverse regions around the world can be inspired to create local delicacies building on these more universal ingredients.

4.2 Implications of Results

When looking at our results, we did expect regions to be spread across a broader range of the Ladder of Citizen Participation because we were aware that some Biosphere Reserves were initiated as grassroots or bottom-up projects and others were initiated by regional authorities which began initially as top-down planning projects. The four Swedish regions were initiated as top-down, as Biosphere Reserves are part of the federal Environmental Protection Agency's mandate and the two Canadian regions were initiated as grassroots organizations in order to address regional issues. It was interesting to note that the regions that began lowest on the Ladder appeared to move up over time while the one region that began highest on the Ladder seemed to move down over time. All regions studied

ended up at either level 5 or 6 of the Ladder by the time they were ready for designation. In contrast we observed that the six regions performed quite differently in the five Process Characteristics, as we had expected.

We speculate that the current requirements for the Biosphere Reserve application process may lead most regions to a similar level of participation as they approach application submission. Another possible explanation is that these levels on the Ladder are merely indicative of the current state of the art for community engagement in both Canada and Sweden. However this was not something we were in a position to explore or verify. It remains an interesting question. We think other regions considering applying for Biosphere Reserve designation should be aware that this level of participation is what has been observed. However, depending on the stage and intent of a community process, we do not feel there is a single Level that should be seen as the best in all circumstances.

When looking at the Ladder ratings and the Process Characteristic ratings from each region there seems to be a correlation. When we sorted the regions' Ladder ratings from lowest to highest and then compared the regions' Process Characteristic ratings in Figure 3.3, we saw a relationship across all regions, in that the regions with higher Ladder ratings also had higher average Process Characteristic ratings. We do not know if this correlation we observed would apply in the lower half of the Ladder because we had no data points below level 4.

4.3 Reflections on our Community Engagement Assessment Tool

In terms of assessing regions based on their community engagement activities, the five Process Characteristics portion of the Community Engagement Assessment Tool proved most helpful and insightful. The use of the Process Characteristics enabled us to look deeper into specific methods of community engagement and offered practical findings that could be shared with other regions. The ratings on the Ladder were of interest, and did end up correlating with our Process Characteristics but offered more general information about the type of community engagement region, which was not unexpected. Both did complement each other within our Community Engagement Assessment Tool and we would recommend using both particularly in evaluating regions outside the scope of our study,

as the Ladder might prove more insightful for a regions with other types of engagement such as a more top-down approach.

We believe our Community Engagement Assessment Tool is general enough to be applicable to most community or stakeholder engagement processes. Based on our experiences prior to this master's programme in areas relating to urban development, regional planning and strategic communications, we see the potential for this tool to be reapplied. For instance, the Community Engagement Assessment Tool in Tables 3.2 and 3.3 could be used as a self-assessment tool by participants in any engagement process. The Ladder of Citizen Participation part of the Community Engagement Assessment Tool could be used at the beginning of a community engagement process to better understand different more general styles of communication and could help a region develop a community engagement policy. Keeping the five Process Characteristics in mind when developing a community engagement strategy would also be very beneficial.

When using the interview questions in Appendix A to discuss the extent to which regions achieved the five Process Characteristics we made the following observations: The Biosphere Reserve coordinators seemed to appreciate the value of each of the characteristics. They did also often regard them as interrelated. "If you have good cooperation, openness, inclusiveness you have good transparency. It is all related." (Messier 2011). The specific definitions proved tricky to stick to because people were inclined to confound openness and transparency as well as mix up inclusiveness, involvement and cooperation. We found it necessary to re-iterate the definitions we were using and to ask follow-up questions to get clarity in the responses.

4.4 Strengths and Shortcomings

We are confident in our findings because we feel that interviewing six regions provided enough variety in community engagement practices that we could complete an analysis that had enough variation and highs and lows to offer guidance to other future Biosphere Reserve regions. Our scope was specific enough that we were able to stay quite focused and we believe that we were able to minimize external factors and focus in on the UNESCO Biosphere Reserve planning process and methods in community engagement. Our interest in the application phase of each region created

clarity around the fact that we were looking for community engagement methods used in this context, so these findings can be most useful for regions that are just beginning their planning and application process and will hopefully help them lay the community engagement ground work for many future years of positive engagement.

Given that our results were from relatively recent Biosphere Reserves in Europe and North America we expect these are the continents where our recommendations would be most applicable. Our recommendations may have some value outside of these regions and for other types of regional planning processes. This would depend on the nature of the other contexts and of how different they are from the regions in Europe and North America we studied in terms of scale, population, makeup of stakeholders, and diversity of ecosystems. All of these elements would affect the complexity of the issues within a region and the relevant methods needed to deal with this level of complexity could be different.

Some of the challenges we faced included the fact that our sample size was only six Biosphere Reserves. These were the six out of the nine to respond to our invitation. Is there a correlation between regions that were more eager to participate in our research and the importance they place on community engagement? Would we have seen different results in terms of placement on the Ladder or Process Characteristics for the less eager regions? We do not know. A larger sample size would have strengthened our findings and reduced the uncertainty.

Due to time constraints we were only able to interview one contact from each region and the regional coordinator made sense as, in most cases, they were the person most directly involved with community engagement. Within our research we used the five Process Characteristics as evaluation criteria and to structure many of the interview questions. Although the Process Characteristics did seem to resonate with most of our interviewees, we acknowledge that we did not directly ask about other Process Characteristics that they might include in similar research.

One last challenge within our research was a lack of a common vocabulary to describe social technologies used in engagement processes made our assessment work challenging. A common language to describe methods around communications, group facilitation and organizational change would also be helpful.

5 Conclusion

5.1 Considerations for Follow-up Work

We noted that the Biosphere Reserves we dealt with were very eager to share their experience. If willingness to participate in our research is any indicator, the six regions we interacted with are actively living their learning laboratory role. We believe this makes Biosphere Reserves ideal for researchers to collaborate with in the future.

Our research could be repeated for UNESCO Biosphere Reserves that have recently applied in regions other than Europe and North America. With approximately 20 new UNESCO Biosphere Reserves being added each year in over 100 countries, there would be benefit to extending the breadth of these findings to be applicable to all Biosphere Reserves in all regions of the world.

An in depth study of one region with different stakeholder groups would be interesting. This could include higher levels of government, Biosphere Reserve board of directors, Biosphere Reserve coordinators, diverse stakeholder groups and community members. This study could reveal any discrepancy there is between the perception of the regional manager/coordinator of the Biosphere Reserve and stakeholders or citizens in the region.

Expanding on the time frame and looking at regions that have achieved UNESCO Biosphere Reserve designation would also add another interesting dimension to our research. The same six regions could be interviewed in another two years and the linkages between the engagement that they had done pre-designation and post-designation could be made.

Our Community Engagement Assessment Tool could be re-used in other community engagement context as we believe it has potential to be generally applicable. We do not foresee limitations in terms of scale. This Community Engagement Assessment Tool could be used on a region-wide basis or applied to a single engagement process for a small group of people. The five Process Characteristics and the Ladder of Citizen Participation are intended to be general.

As mentioned in section 3.2 there are near equivalents to Arnstein's ladder for describing citizen participation (Rowe and Frewer 2005; Bowen, Newenhan-Kahindi, and Hewemans 2010; Krick et al. 2005). Perhaps one of them could be used instead and the alternative ladders compared in terms of usefulness, in terms of further developing the Community Engagement Assessment Tool for future use.

5.2 Main Conclusions

UNESCO Biosphere Reserves are intended to serve as learning laboratories which aim to be examples to each other and to the world for how to achieve both conservation, economic and social development. This is the leadership role UNESCO Biosphere Reserves can play in helping the world find ways towards a more sustainable future. This role is one which has evolved from the original conservation focused concept 40 years ago. Refinements to Biosphere Reserve requirements, like the most recent Madrid Action Plan, show that the evolution to improve the Biosphere Reserve concept remains ongoing.

We see the key findings from this thesis as steps in this evolution of Biosphere Reserves to becoming leaders in the move towards sustainability. Our research questions directed us to find ways to bolster the Biosphere Reserves planning process towards sustainability with an emphasis on the community engagement aspect of the process. Improving community engagement on its own would not be enough to guarantee movement towards sustainability so we began by looking to the FSSD to see what might strengthen the Biosphere Reserve's planning.

Our first set of recommendations and key findings were for Biosphere Reserves to:

- adopt the four Sustainability Principles within the FSSD as their definition of sustainability;
- backcast from high level vision within constraints of four Sustainability Principles; and
- use 3 prioritization questions and process characteristics to choose appropriate actions to move strategically, step by step towards that future goal.

These recommendations would help guide Biosphere Reserves in moving towards a genuinely more sustainable future.

Our next findings and recommendations are specific to the community engagement challenge in Biosphere Reserves. The nine methods listed in section 3.3.10 should be considered as part of what needs to be done in creating and maintaining community engagement in the planning process for Biosphere Reserves.

We see our recommendations as consistent and complementary with the ongoing evolution of UNESCO Biosphere Reserves towards a more complete understanding of sustainable development and of better community engagement. It is our hope that this research will offer regions in Europe and North America, and potentially other regions around the world, guidance on how to take bold steps to move human society from our current unsustainable way of life towards a more sustainable and better future.

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Appendix A Interview Questions

In our research we are specifically interested in the candidacy period for each biosphere reserve and the process by which the regional plan was put together to qualify for the designation.

The model we are working with looks at five characteristics of planning processes. First we will introduce these five characteristics so you can understand the definitions that we are using and the differences between them and then we will have five sections, one for each characteristic. We will spend five minutes introducing the concepts and then about 10 minutes exploring each characteristic more fully.

The five characteristics include:

- **Transparency:** An ideal of communication and accountability in organizations and communities where motivations, driving factors, and impacts of all decisions and actions are made publicly available.
- **Openness:** That a community or organization has the willingness to rethink and review its own values and processes.
- **Cooperation:** To cooperate within a process is to have each party contribute what they can in order to best serve their needs in a mutually beneficial way.
- **Involvement:** The taking or being part of some action or attempt; a sharing, of tangible or intangible things.
- **Inclusiveness:** Ensuring the needs of stakeholders are acknowledged and respected even if they do not actively contribute to the process.

As we walk though the questions we will further explain each process characteristic and provide clarification when needed.

We may have a few additional related questions for you at the end of the interview.

1. Transparency is important in the process of community engagement. We understand transparency to mean:

- **Transparency:** An ideal of communication and accountability in organizations and communities where motivations, driving factors, and impacts of all decisions and actions are made publicly available

a) To what extent did you see transparency in the planning process? How did you see this and can you give an example of how it worked? If transparency wasn't seen in the planning process, what were some barriers to this?
b) Link to their experience- we saw this and this... i.e. We saw in your application that... Do you feel these actions contributed to building transparency in your region?
c) What did you do to achieve transparency in your region during the UNESCO Biosphere Reserve planning process? If transparency wasn't achieved, what do you think could have been done to achieve transparency?
d) Were there any specific tools, actions or strategies that you followed to achieve transparency?

2. Openness is also important in the process of community engagement. We understand openness to mean:

- **Openness:** That a community or organization has the willingness to rethink and review its own values and processes.

What we mean is: That organizations are open to change in their processes in order to better meet the needs of members.

a) To what extent did you see openness in the planning process? How did you see this and can you give an example of how it worked? If openness wasn't seen in the planning process, what were some barriers to this?
b) Link to their experience- we saw this and this... i.e. We saw in your application that... Do you feel these actions contributed to building openness in your region?
c) What did you do to achieve openness in your region during the UNESCO Biosphere Reserve planning process? If openness wasn't achieved, what do you think could have been done to achieve openness?
d) Were there any specific tools, actions or strategies that you followed to achieve openness?

3. It has been noted that **cooperation** is very important in the process of community engagement. We understand cooperation to mean:

- **Cooperation:** To cooperate within a process is to have each party contribute what they can in order to best serve their needs in a mutually beneficial way. (not self interest-driven, but for collective good)

a) To what extent did you see cooperation in the planning process? How did you see this and can you give an example of how it worked? If cooperation wasn't seen in the planning process, what were some barriers to this?
b) Link to their experience- we saw this and this... i.e. We saw in your application that... Do you feel these actions contributed to building cooperation in your region?
c) What did you do to achieve cooperation in your region during the UNESCO Biosphere Reserve planning process? If cooperation wasn't achieved, what do you think could have been done to achieve cooperation?
d) Were there any specific tools, actions or strategies that you followed to achieve cooperation?

4. It's been noted that **involvement** is also important in the process of community engagement. We understand involvement to mean:

- **Involvement:** The taking or being part of some action or attempt; a sharing, of tangible or intangible things, as in benefits and profits or as in culture and values.

What we mean is: Individuals are involved actively in the form of bringing their unique ideas, talents and energy to a project.

a) To what extent did you see involvement in the planning process? How did you see this and can you give an example of how it worked? If involvement wasn't seen in the planning process, what were some barriers to this?
b) Link to their experience- we saw this and this... i.e. We saw in your application that... Do you feel these actions contributed to building involvement in your region?
c) What did you do to achieve involvement in your region during the UNESCO Biosphere Reserve planning process? If involvement wasn't achieved, what do you think could have been done to achieve involvement?
d) Were there any specific tools, actions or strategies that you followed to achieve involvement?

5. Inclusiveness is also important in the process of community engagement. We understand inclusiveness to mean:

- **Inclusiveness:** Ensuring the needs of stakeholders are acknowledged and respected even if they do not actively contribute to the process.

What we mean is: the needs of all stakeholders are considered, whether they are actively involved or not.

a) To what extent did you see inclusiveness in the planning process? How did you see this and can you give an example of how it worked? If inclusiveness wasn't seen in the planning process, what were some barriers to this?
b) Link to their experience- we saw this and this... i.e. We saw in your application that... Do you feel these actions contributed to building inclusiveness in your region?
c) What did you do to achieve inclusiveness in your region during the UNESCO Biosphere Reserve planning process? If inclusiveness wasn't achieved, what do you think could have been done to achieve inclusiveness?
d) Were there any specific tools, actions or strategies that you followed to achieve inclusiveness?

If not already answered: (Specifically for placement on the ladder)
6. Can you describe the role participants had in the decisions that were taken in the process and how this role for participants was arrived at?

How were decisions made? How were conflicts resolved?

How would you describe the nature of communication in the process?

Wrap-up

That brings us to the end of our questions. Do you have any additional comments or questions before we finish today? Thank you once again. We appreciate your time and for sharing your experience. We will be happy to share our final report with you in June if you are interested.

Appendix B Sample Report Card

UNESCO Biosphere Reserve's name: [redacted]

Evaluator: [redacted]

Transparency	Cooperation	Openness	Inclusiveness	Involvement
2.5	2.5	3	2	2.5

Ladder
from 5 to 6

Methods:

T	C	O	Is	It	L	methods, actions or tools
						a common understanding and a common language develops
	X	X				Tailor cooperation to group – organizational learning
						neutrality
	X					First five years of dialogue and then another five years to create a very good cooperation
X	X					key habitat inventory was fully completed … a way to make this all more transparent- they wanted all the cards on the table
X						time needed- to make it transparent -lack of website- good tool- important
X			X			we do email minutes to participants- instead – we have a large excel spreadsheet with many emails
X			X			we are very transparent between the 7 main organizations- members- they know many things about process- they are also the most important ones but we have a hard time to reach the ones that aren't
X						newsletters and the media to share information
X						This year we now have two communicators … We are making a Communication Plan together with

						them
	X					reference group: meetings twice a year
	X				X	We have been working on a vision and values and our work plan and when we will make a review of this we will do it with the community
		X	X			there is a need to broaden it- have a need to broader it to include more interest groups
	X		X	X		One of our tactics was (method) writing this plan and sending it for review
	X					it's not about governing - it's about cooperation at the same level starting with a flat model is a very different process – non hierarchical (method) the "Ostravatten Model"
				X		Meeting techniques are important- to make people more open
	X			X		-best thing is to have meetings outside
	X			X		-co-management: (e.g. trees)
	X					we have been working in a different way- with those that are most interested
			X	X		The involvement of main 7 groups has been strong- but we feel the need to broaden it more
X			X			had articles in the local media -we have had meetings -we sent the draft application to 130 addresses - we reached all the main stakeholder organizations
			X			send invitations to all 130 organizations to attend a meeting- we had people from roughly 20-25 organizations coming to these meetings

Barriers:

T	**C**	**O**	**Is**	**It**	**L**	**barriers**
						One barrier is language. Different groups have different languages
					-	Need for neutral turf - (barrier) are no places to actually sit down and discuss around the table in a neutral way

	-					challenge – they have their own agenda- hard to get them interested
						a pedagogic challenge
						Time four key people- there is a lot of stamina
			-			quite old- men -we also have a problem with gender- mostly males
					-	early phase before I was involved there were a lot of large meetings- sometimes this is not recommended- this is hard to control
			-			Mostly lack of time

Appendix C Biosphere Reserve Profiles

Name	Country	Date	Contact
Lake Vänern Archipelago	Sweden	2005 planning began; 2009 nominated; 2010 designated	Johanna MacTaggart Biosphere coordinator +46 501 393193 johanna.mactaggart@vanerkulle.se
Blekinge Archipelago	Sweden	2011 anticipated designation	Jenny Hertzman and Anders Thuren Blekinge County Administrator 0455-87178 anders.thuren@lansstyrelsen.se
Nedre Dalälven River Landscape	Sweden	2003 planning began; 2006 candidacy; 2010 applied	Cristina Ericson Biosphere coordinator +46 070 341 3052 cristina.ericson@telia.com
Lake Vättern Biosphere Reserve	Sweden	1990s began planning; July 2011 anticipated designation	Simon Jonegård Swedish Forest Agency District Jönköping +46 (0)36-19 62 02 simon.jonegard@skogsstyrelsen.se
Fundy Biosphere Reserve	Canada	1999 planning began; 2007 designated	Andrew Spring Executive Director (506) 382-9661 info@fundy-biosphere.ca
Manicougan-Uapishka Biosphere Reserve	Canada	2007 designated	Jean-Philippe L. Messier Geneneral Director (418) 293-2548 jpmessier@rmbmu.com

Appendix D Examples and Application of Social Technologies

(Excerpt from The Weave: Participatory Process Design Guide -Integrating Participatory Processes with Planning for Strategic Sustainable Development)

The following set of dialogue-based methodologies are all used in the Art of Hosting network. For more detailed descriptions of these methodologies, visit www.artofhosting.org.

The Circle: an ancient form of meeting that promotes focus, connection and participation from all. It is an intentional form of dialogue based on shared leadership, thoughtful speaking and deep listening. Participants sit in a circle and use agreements, practices and principles designed to care for the well-being of all. Used to create the identity of the group and brings everyone immediately into relationship. The Circle is regularly used to open and close an engagement, and at times during the process.

Open Space Technology: a process designed to facilitate parallel working/dialogue sessions around a central theme of strategic importance. Participants create and manage their own agenda by convening and engaging around issues of concern to them. Each conversation's outcome is reported back to the whole group to bring everyone up to speed with possibilities and opportunities for collaboration. Used for strategic direction-setting, envisioning the future, morale building, stakeholder consultation, and collaboration. 'Discovered' by Harrison Owen. www.openspaceworld.org

Pro Action Café: a process developed to deepen the level of inquiry into specific projects, leading to wiser and more collectively informed actions. It is a relatively new methodology that combines the conversation clusters and rounds of World Café with the participant created agenda of Open Space Technology. Participants bring their specific projects to the other attendees go through three rounds of deep and focused conversation. The goal is to help move the project into action by increasing the level of commitment and readiness to act move forward together. Developed by Rainer von Leoprechting.

World Café: a process designed to foster interaction and dialogue around a specific topic or challenge. The session has an overarching theme and some sub-themes and participants move between conversation clusters (café-style tables) in successive rounds (usually three), sharing ideas and insights. A "host" remains at each table to share key insights and questions with new table members and harvest the final results. Used for many different purposes, including information sharing, relationship building, reflection and action planning, World Café is particularly effective in surfacing the collective intelligence in groups of diverse people. Co-founded by Juanita Brown and David Isaacs. www.theworldcafe.com

For the complete version of The Weave: Participatory Process Design Guide for Strategic Sustainable Development, please visit www.theweave.info.

(Cretney, Cretney and Meisterheim 2011)