

Structuring decision-making for ecosystem-based management

Maria Espinosa-Romero, Kai Chan,
Tim McDaniels, and Denise Dalmer

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EBM

- Well recognized as the **new approach** for marine management;
- The need of translation between **theory and practice**;
- There are **different perceptions** on what EBM should achieve;
- **Stakeholder involvement** is a key element for implementation.

This work focuses on how...

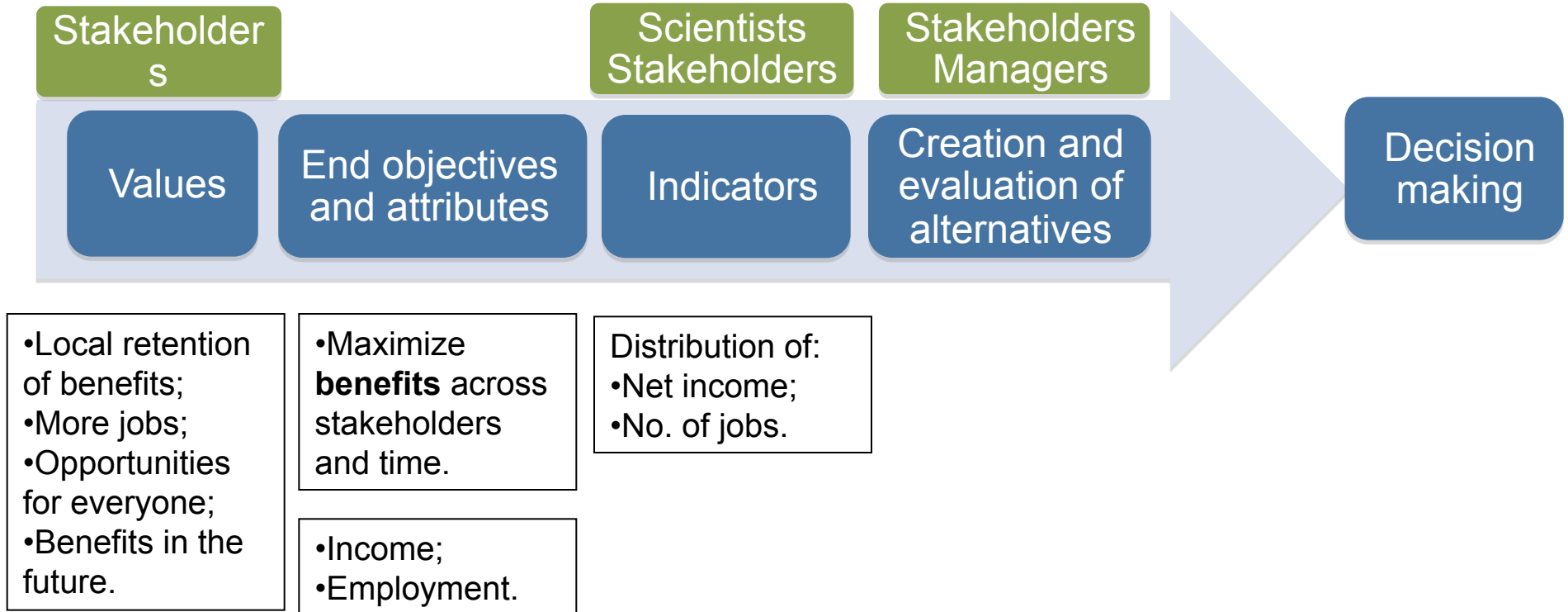
- Involve **humans** into decision making for EBM?
- Get a **working definition** for a specific region?
- Define collective and **operational objectives**?



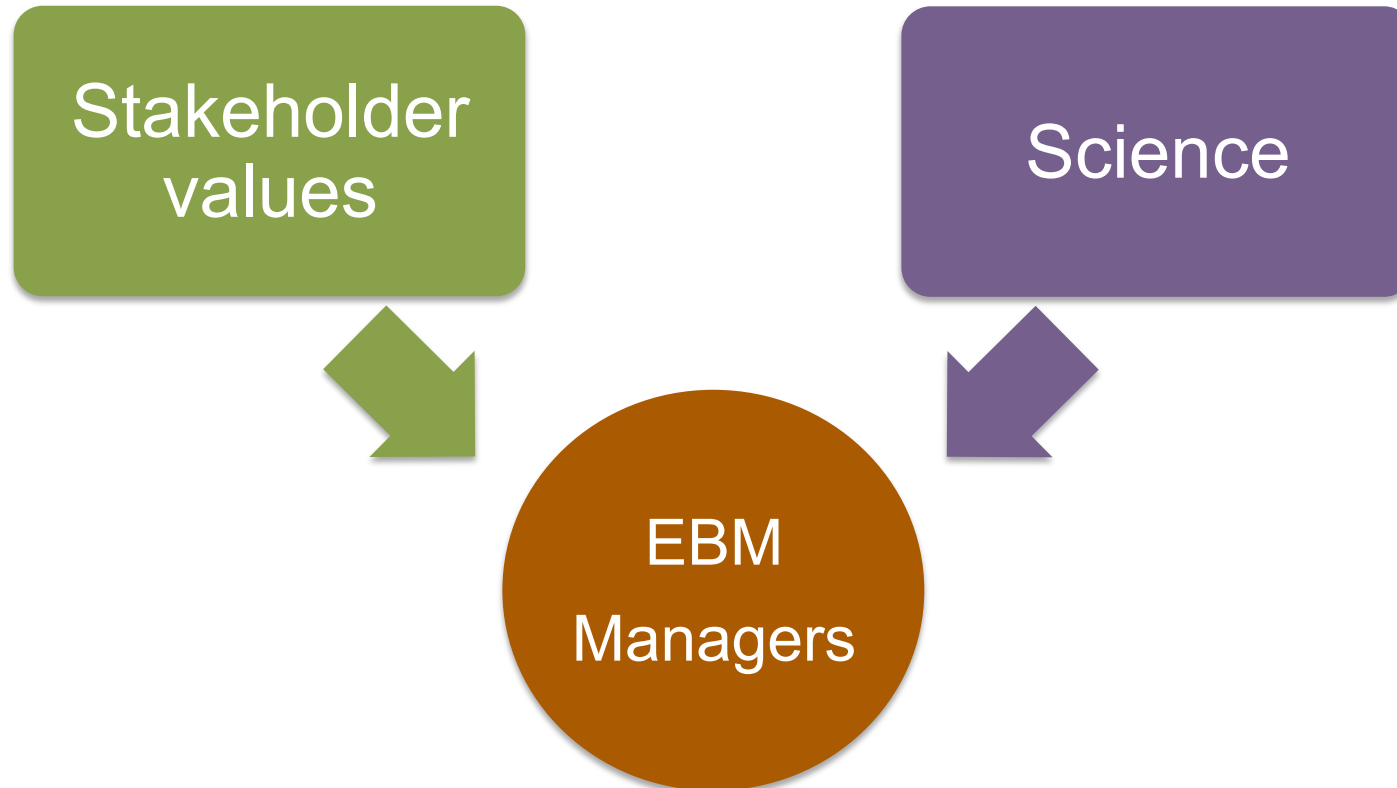
Framework
for EBM

Structured-decision making (SDM)

Systematic approach to make decisions based on the values of the participants



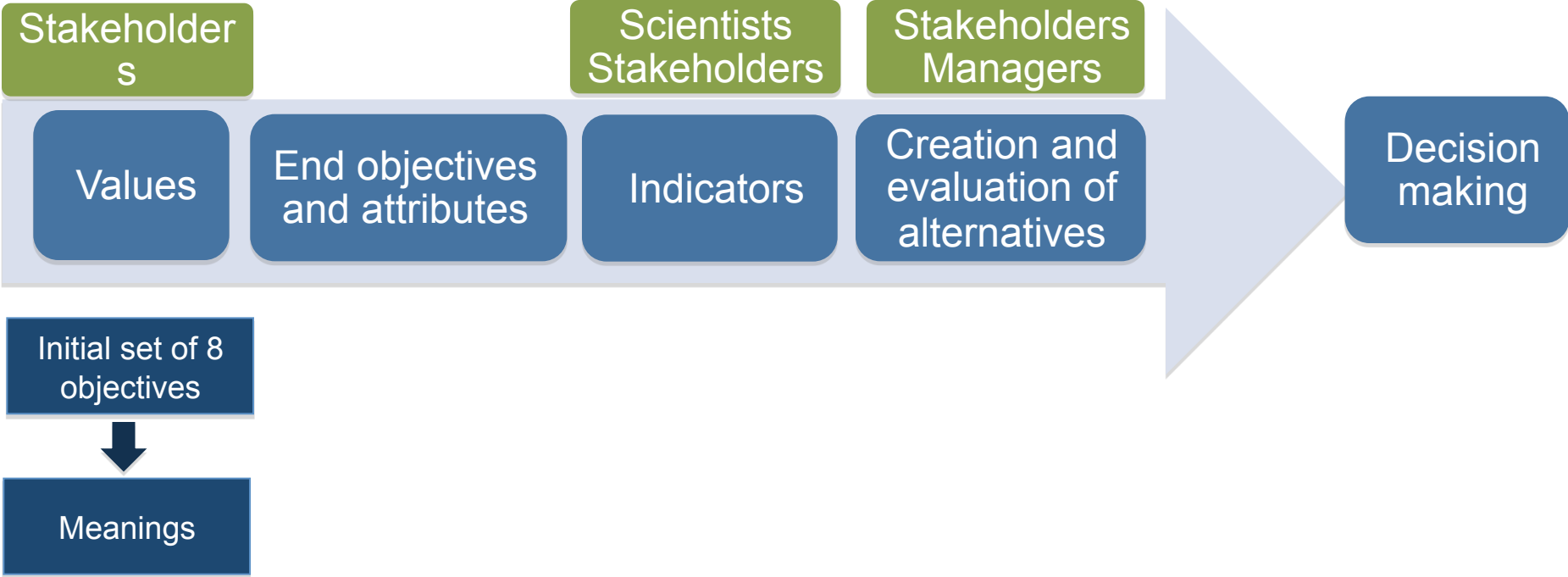
Benefits of applying SDM for EBM



Consistency between values, objectives, indicators and decisions

EBM initiative on the West Coast of Vancouver Island

West Coast Aquatic



Original set of objectives

Integration and collaboration	Sustainable economic benefits	Healthy ecosystems	Healthy communities and waterways	First Nations reconciliation/relationships	Knowledge, information and technology	Capacity building	Good governance
<ul style="list-style-type: none"> •Responsible and participatory decisions •Shared responsibilities •Efficient communication •Sustainable and holistic management consistent with traditional values •Collaboration with other states and global links •Integrated and participatory management 	<ul style="list-style-type: none"> •Opportunities for locals •Sustainable social, cultural and economic benefits •Balance ecological, social and economic aspects •Future generations •Conservation first in fisheries management •Sustainable management •FN access to natural resources •Sustainable fisheries and aquaculture •Monitoring, enforcement and regulations 	<ul style="list-style-type: none"> •Healthy, diverse and resilient ecosystems •Ecosystem productivity •Genetically diverse salmon and other species •Integrity of fish and habitat •Water waste management •Precautionary principle approach •Conservation as a first priority •Species at risk protection •Network of MPAs •Natural disasters •Adaptation to climate change •EBM and values in planning and decision-making •Adaptive management 	<ul style="list-style-type: none"> •Safety (modernized transportation, infrastructure, and response services) •Health (ecosystem health and community health) •Vibrancy (diversified economies, cultural practices) •Partnerships •Integrate traditional knowledge into decision-making 	<ul style="list-style-type: none"> •Respect aboriginal treaties and rights •Participation of FN in decision-making •Ensuring benefits for First Nations •Dispute resolutions between First Nations and other governments •FN sharing the wealth with marine resources •Clear understanding of the needs of FN •FN are the second priority after conservation •FN access to natural resources 	<ul style="list-style-type: none"> •Integrate information and knowledge for ecosystem health •Expertise and knowledge from diverse sources •Training for users, managers, stewards, community capacity •Passing on traditional knowledge •Stewardship efforts •Equipment and technology •Education •Gather information 	<ul style="list-style-type: none"> •Education for stakeholders to participate in aquatic conservation, use and management •New industries •Strong First Nations culture •Improve First Nations economic self sufficiency and community stability •Safety and efficiency of marine transportation and shipping •Modernize the Canadian Coast Guard fleet 	<ul style="list-style-type: none"> •Establishment of priorities •Responsibility and accountability •Public reporting

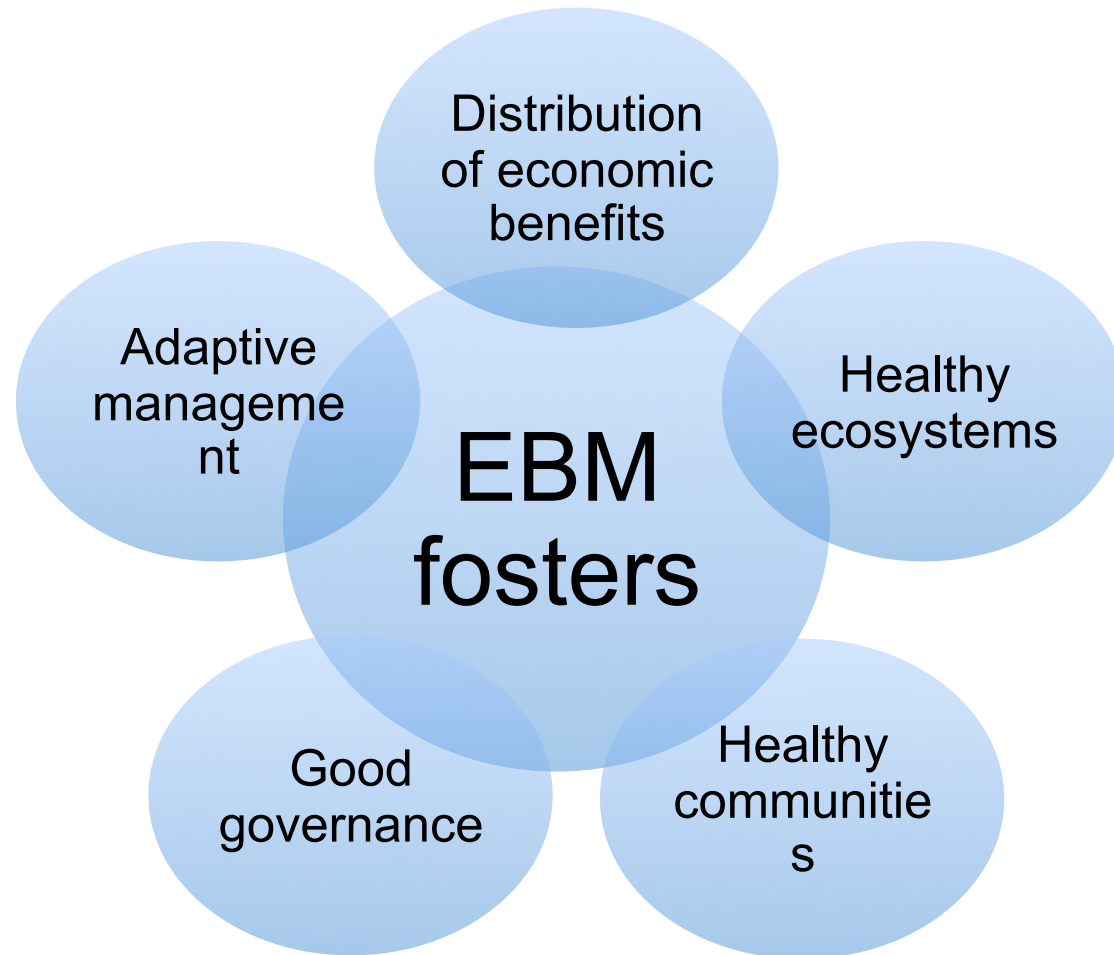
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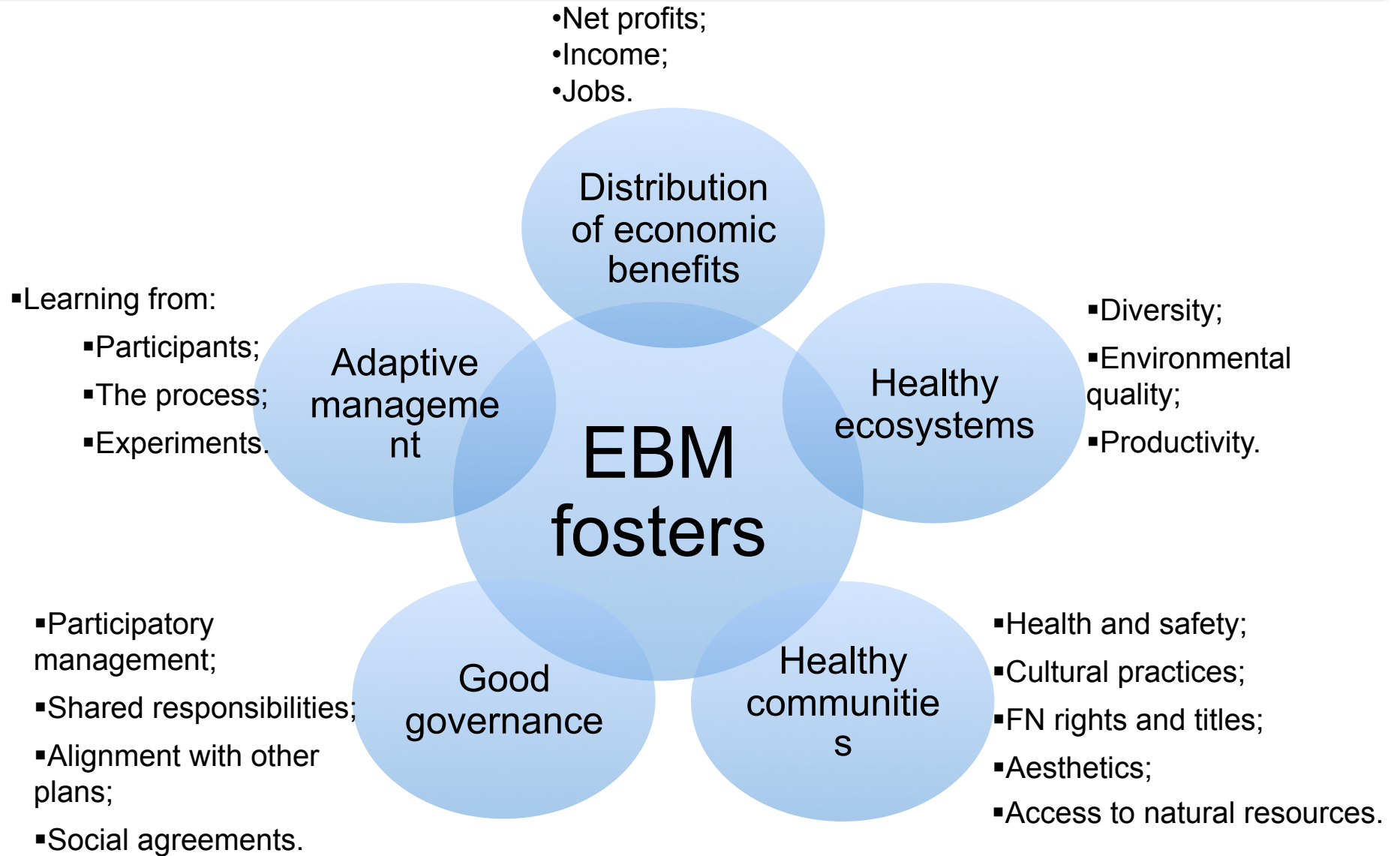
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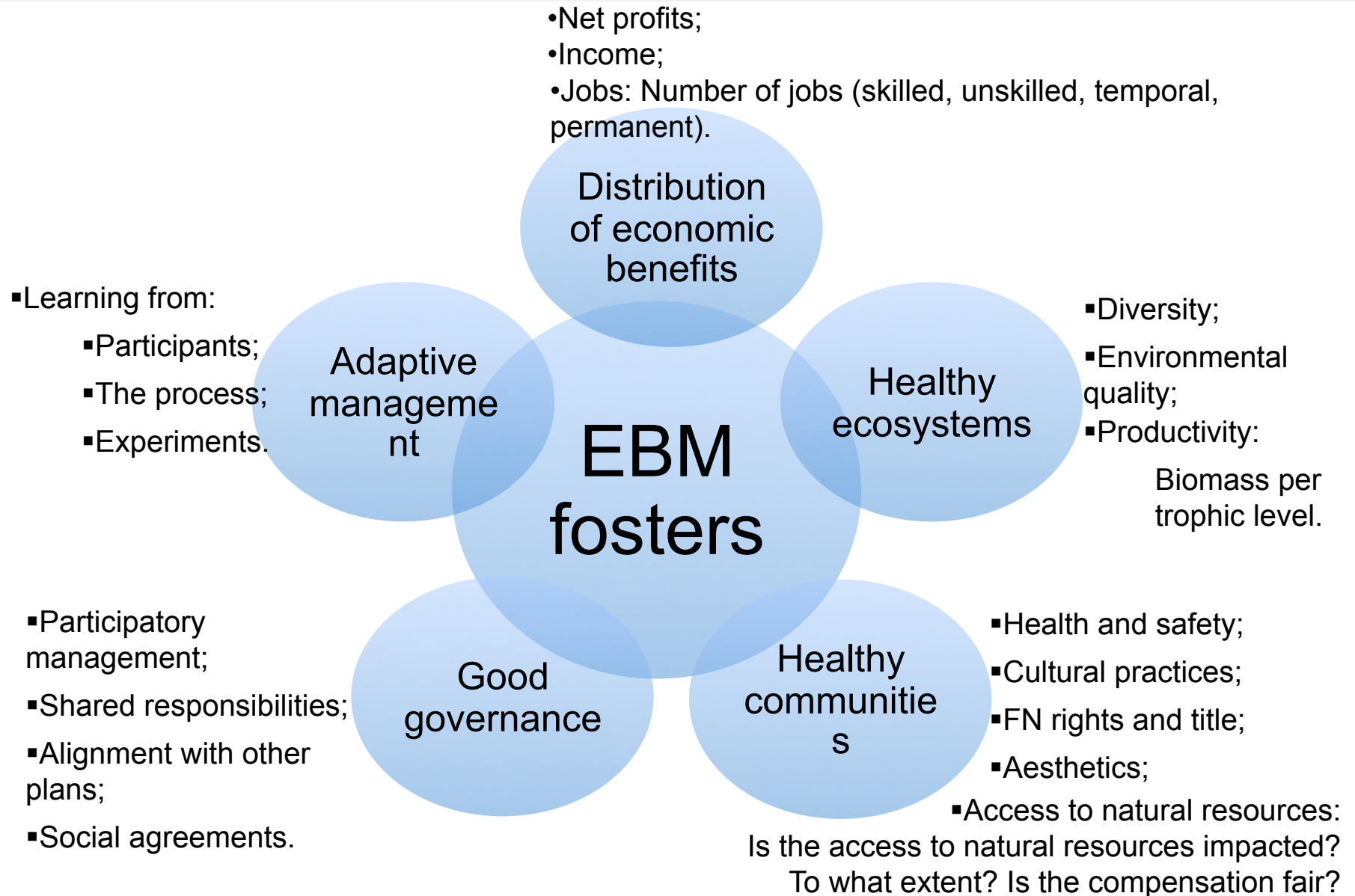
End objectives



Attributes



Indicators



Conclusions

- a. The lack of a systematic approach can lead to defining non-operational objectives (vague, complex and/or statements);
- b. SDM can help build a collective vision, fundamental objectives and indicators to guide decision-making;
- c. Stakeholder involvement is required to ensure their values are reflected and to build trust in the process;
- d. The framework can be used for any decisions;
- e. This work is the first step for building the EBM framework for the WCVI;
- f. Further efforts include consultation with all WCA members and use of the framework for specific decisions.

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Application

	Objective 1	Objective 2	Objective 3	Objective 4
Alternative 1	2	4	3	2
Alternative 2	4	4	1	3
Alternative 3	2	3	5	2