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### INCLUSIVE PARTICIPATORY APPROACHES TO CO-MANAGEMENT OF PUBLIC LAND ASSETS IN PROTECTED AREAS

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#### **Abstract**

Under the current global financial crisis and national economic recession, governmental policies concerning the spatial development and the management of ecosystem goods and services will be affected by past prevailing practices. The previous proposed reform's allegedly 'flexible' spatial planning system, aiming to facilitate large-scale investments without regard to sustainability, may stimulate uncontrolled economic growth with short-term benefits but long-term costs, affecting adversely the natural heritage. The transfer of Greek public land to an Asset Development Fund for future privatization remains a matter of great importance, having a significant impact on the environment. Unplanned privatization transforms non-rival and non-excludable public goods into rivalrous and excludable private goods. Having in view the foregoing, we may readily conclude that such a policy considers public property as dead capital, will increase urbanization and exacerbate existing socio-spatial inequalities. This paper introduces the perspective of public participation to co-management of public land assets in protected areas (PAs). Strategically deployed, the spatial planning of investments in PAs can be a determinant of public land's sustainability, *iff* turning both the strategies and regulatory plans into actions to (re-)generate consensus-based decision-making, optimizing the social, economic and environmental characteristics of the affected areas in Greece.

#### **Keywords**

Public land; public good; natural capital; spatial planning; inclusive governance; sustainability

## Introduction

Human existence, constituents of societal well-being and nearly all sectors of the economy are heavily dependent on and obtain direct or indirect benefits from renewable and finite resources provided by the environment. Social systems, economic activities and ecosystem functions are closely interlinked with complex reciprocal interactions through structured or dynamic processes. Anthropogenic impacts can have adverse effects on environmental goods and services that cause irreversible changes, reducing their capacity or availability to support human needs (MEA, 2005). Increasing demands for prosperity and growth place enormous pressure on natural ecosystems, which are treated as essentially limitless before they become scarce or permanently depleted. The intensity of use and overexploitation of common wealth have been correlated to the absence of property rights or (in-)security of land tenure under particular property regimes (Hardin, 1968). When managed under common-property regimes, common-pool resources (CPRs) are considered as non-rival and non-excludable public goods in 'free-access', being menaced by practices that allow individuals or groups to receive the deriving benefits without any regulation or restriction on consumption; aggravating the 'free-rider' problem (concept of indivisibility). When managed under state or private-property regimes, land resource areas are transformed into rivalrous and excludable private goods with access restriction, being threatened by practices that maximize the producer surplus rather than enhance the consumer surplus as well ('divisibility of benefits' or subtractability). Users' extractions are restrained through regulations and enforced sanctions, excluding those unable or unwilling to pay for benefits (exclusion principle). Government control, private or community ownership is usually offered as a panacea; "the" single universal solution. However, governmental or community solutions, or privatization, each system, operational rule and organizational structure works in some settings (Ostrom, 2011), fitting in local circumstances, socio-economic conditions and ecological characteristics of the natural resource (UNEP, 2016).

In the face of global ecological crisis, policy contexts put focus on management issues, biodiversity conservation and development conducted without depletion of the remaining nature reserves and ecosystem functions in terms of social, economic and environmental sustainability (TEEB, 2010; World Bank, 2011; A/RES/70/1). Sustainable development enriches spatial planning systems with two fundamental key components; the concept of 'needs' and the idea of limitations (intra/inter-generational equity) (WCED, 1987). Spatial planning goes beyond traditional land use planning,

reconsidering the rivalry of consumption and the excludability of beneficiaries from natural or human-constructed resources (EEA, 2015). It performs a demanding strategic/regulatory role on macro/micro scale, which relies on decision-making process (OECD, 2001) that promotes inclusive governance approaches and participatory practices in PA management. This requires stronger synergies among authority agencies and key actors, such as indigenous people, local community, regional authorities, central government, knowledge institutes, the public and the private sector.

Nowadays, insuperable budgetary constraints call for an effective use of increasingly scarce public land resource areas by tailoring interventions to territorial specificity, so as to assure the legal certainty for investments, serve the public interest and ensure common benefit. It is critical to integrate and implement policies for the sustainable development and economically viable use of public land assets with policies for the sustainable co-management of PAs (GCP, 2012). It becomes vitally important that spatial planning gets well equipped to meet urgent challenges, with a view to outperform conventional practices in environmental conservation and reorient governance towards more adaptive and consensual, multi-level and multi-actor approaches (COM/2008/158). Within that framework, establishing an optimal *equilibrium* among allocation of natural resources, broader conservation goals, sustainable development and governance modes is a prerequisite in qualitative and quantitative terms. Safeguarding the natural capital as a highly-valued asset and a common good can not only be affordable but profitable in perpetuity (Credit Suisse et al., 2014).

## **Methodological Framework**

The research is done as a deductive study, a logical process in which conclusion is based on the premise that public involvement in co-management of public land assets in PAs, can prove to be decisive in generating sustainable outcomes that secure equitable (re-)distribution of ecosystem goods and services within society. As a consequence, the first aim of this study is: a) to define holistic approaches and practices applied in 'collaborative' environmental governance regimes, depending on the spectrum of participation for the interested parties at all spatio-temporal scales. The second aim is: b) to analyze the societal responses within the framework of spatial planning and environmental management through interdisciplinary system models that emerge to describe human interactions with the economy and the environment, so as to rigorously answer 'why' and 'how' research questions that can be translated into a 'how' form. Conducting this study allows us

to have an in-depth understanding of the overall value of societal interacting with land resource areas in Greece that are worth protecting from excessive use and inevitable destruction. Chosen design of the study is descriptive and uses thoroughly a wide variety of data from different sources of evidence. We elaborated upon these to conduct a qualitative research on spatial planning, in order to integrate investments in PAs with regard to public land's sustainability. This research aims at identifying the causes and consequences of drivers of change, and describing the phenomena affecting the complex Social-Ecological Systems (SESs) with long-term effects or irreversible losses.

## **1. Reclaiming participation to *reconcile* conservation with development**

During the recent decades, the role of transparency and particular dynamics of public participation in decision-making processes have become cutting edge topics with socio-spatial dimensions that influenced the evolution of regulatory state in addressing environmental or other public concerns. A lack of public confidence and erosion of trust in government agencies, corporations, institutions and private actors whose policy commitments and decisions can affect the environmental quality, conflict with a growing diffusion of information technology and associated politico-administrative decentralization that enhance greater societal expectations (Yosie & Herbst, 1998; CEMAT, 2014). Nevertheless, power shifts from states to investors, in terms of making states competitive, often involve transfer of public goods, such as public lands in PAs, into private ownership, which does not always ensure the continued provision of ecosystem goods and services to society. Potential impacts on natural capital raise an obvious public interest. A move to *inclusive governance* covers a socially diverse network of organisations, collectives, unions, groups, associations, and so parties of conflicting *interests*. Rights-based approaches have progressive and conservative aspects with considerable impacts (Peters, 2000) since they are promoted by authorities (COM/2001/428), and induce a change of territorial policy formulation at national, regional and local level (Michel, 2007). Debates and actions have focused on reconciling conservation goals with development objectives, integrating the interested parties in spatial development and environmental management process.

The emergence of arrangements in preserving natural heritage and PA management exist within a complex *context* of political system types and environmental governance regimes, which varies among countries and localities, shaping different re-distributional policies, values and expectations regarding public land resource areas as potential highly-valued assets with a range of future uses.

Institutional and legislative frameworks of spatial planning and environmental protection regulate the degree of public participation, governance typology, engagement strategy, stakeholder liaison, management of public-private partnerships and inter-agency collaborations. This is a formal part of planning and management systems, such as in the creation of spatial or management plans, and of international agreements, such as with Natural World Heritage properties (Dovers et al., 2015). Occurring across a diversity of geographical and socio-political settings, the participative processes in environmental management are required mandatorily in formal policies to achieve sustainable and equitable outcomes, or pursued voluntarily outside institutional channels, being dominated by informal networks. Increasing requirements to collaborate with communal and multi-stakeholder initiatives can be implemented through a variety of opportunities for *effective* public involvement.

Early work in public participation focused on arguing the need for greater citizen engagement, and on the degrees of *power sharing* in decision-making, which can also all feature in PA management. The rungs on the ‘ladder’ indicate, from bottom to top, the increasing levels of public impact that depend on top-down (1-way) or bottom-up (2-way) communication flow of information processing and knowledge ordering. Towards the upper end, direct involvement holds a substantial role both in macro-scale by setting strategic directions of spatial planning, and in micro-scale by being a part of an environmental governance regime that promotes collaborative management arrangements. In the middle, stakeholder’s role is restricted having no formal power but retains some regulatory control over the future uses of available resources. At the bottom, public participation is annulled by the pretence to gain public support (Arnstein, 1969; Wiedermann & Femers, 1993) [Figure 1].

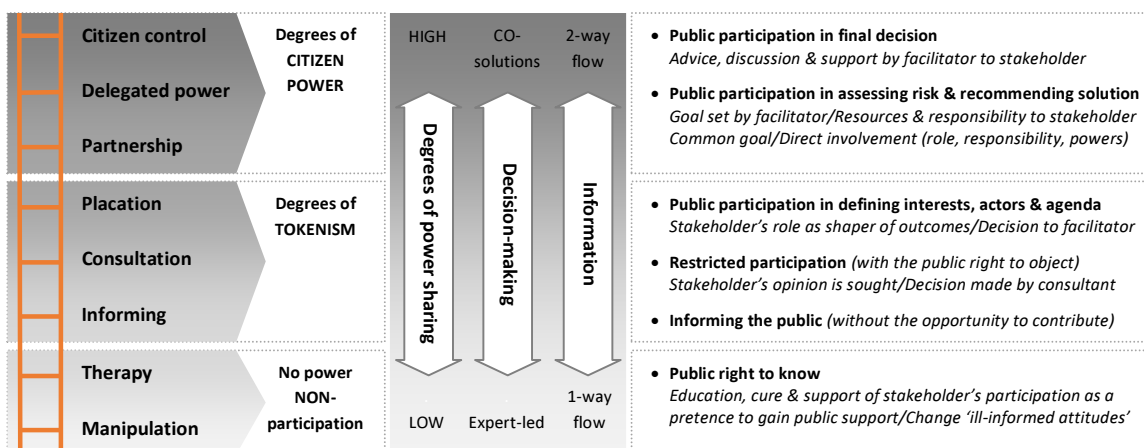


Figure 1: ‘Ladder’ of citizen participation (adapted from Arnstein, 1969; Wiedermann & Femers, 1993)

Re-defining the public's role has been challenging the term *hierarchy* in new governance modes, which is used to describe legislative and executive decisions that steer democratic governmental action at multiple levels, thereby weighing up the ideal setting of representative or participatory forms of democracy. Hence, legislative threats or inducements hold governments to account for following through on their commitments in theory and in practice. Governmental interventions prompt the development of a specific governance mode by transforming an informal co-operation into a formal governance structure that enables public and private actors. These actors are viewed as *principals* or *agents*, depending on the analytical perspective on their role in the policymaking processes of the modern regulatory state; changing the relationship between government and governance *in* networks or *with* networks over time. While the former "assumes the dispersion of power and competences in horizontal patterns of interactions", and the latter "emphasizes the importance of institutional politics, of power asymmetries and of a shadow of hierarchy" (Héritier & Rhodes, 2008), both suggest a progression towards more 'genuine' forms of public participation.

The *meanings* of participation vary enormously and remain elusive, since the term becomes mired in a morass of competing referents. The typology of participation gradually speaks to the user of participatory approaches, going from 'bad' to 'better' forms that offer a continuum of interaction. Associated with efficiency arguments, it facilitates development through public display of planning proposals and submission of opinions on planning options (Pretty, 1995; Cornwall, 2008) [Table 1].

TYPE of Participation	Features
<b>Manipulative</b>	<i>Pretence with nominated representatives having no legitimacy or power</i>
<b>Passive</b>	<i>Unilateral announcements without listening to people's responses by an administration or project management The information being shared belongs only to external professionals</i>
<b>by Consultation</b>	<i>External agents define problems and information gathering processes and so control analysis No share in decision-making, since professionals are under no obligation to take on board people's views</i>
<b>for Material Incentives</b>	<i>People participate by contributing resources in return for material incentives (ie. labour for cash)</i>
<b>Functional</b>	<i>External agencies encourage participation to meet predetermined objectives (ie. reduced costs) Interactive &amp; shared decision-making that tends to arise only after major decisions have been made by external agents</i>
<b>Interactive</b>	<i>Participation is seen as a right, not just the means to achieve project goals Participation in joint analysis, development of action plans &amp; formation or strengthening of local institutions Interdisciplinary methodologies seek multiple perspectives &amp; make use of systemic or structured learning processes Groups take control over local decisions &amp; determine use of resources to have a stake in maintaining structures/practices</i>
<b>Self-Mobilisation</b>	<i>People take initiatives independently of external institutions to change systems Develop contacts with external institutions for resources &amp; technical advice, retain control over how resources are used If government/NGOs provide an enabling framework of support, it may challenge existing distributions of wealth/ power</i>

**Table 1: Typology of participation** (adapted from Pretty, 1995; Cornwall, 2008)

It is vital to pay closer attention to who is participating or is (self-)excluded, in what and for whose benefit. The *intentionality* of those who initiate participatory methodologies is a crucial factor in shaping interventions, influenced by the typology of interests about why or how participation is used at any particular stage in a decision-making process (White, 1996; Cornwall, 2008) [Table 2].

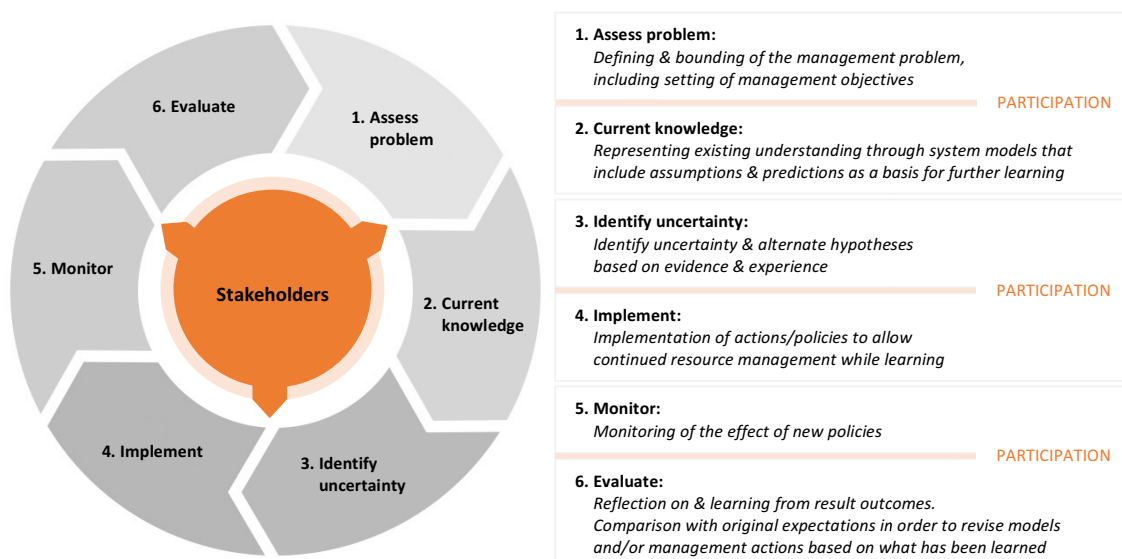
FORM of Participation	What 'Participation' means to the 'Implementing Agency' <i>top-down</i>	What 'Participation' means to those on the receiving end <i>bottom-up</i>	What 'Participation' is for <i>function</i>
<b>Nominal</b>	<i>Legitimation to show they are doing something</i>	<i>Inclusion to retain some access to potential benefits</i>	<i>Display</i>
<b>Instrumental</b>	<i>Efficiency to limit funders' input, draw on community contributions &amp; make projects more cost-effective</i>	<i>Cost of time spent on project-related labour &amp; other activities</i>	<i>As a means to achieving cost-effectiveness &amp; local facilities</i>
<b>Representative</b>	<i>Sustainability to avoid creating dependency</i>	<i>Leverage to influence the shape the project takes &amp; its management</i>	<i>To give people a voice in determining their own development</i>
<b>Transformative</b>	<i>Empowerment to enable people to make their own decisions, work out what to do &amp; take action</i>	<i>Empowerment to be able to decide &amp; act for themselves</i>	<i>Both as a means &amp; an end, a continuing dynamic</i>

**Table 2: Typology of interests** (adapted from White, 1996; Cornwall, 2008)

Embedded within this broader social structure, *ecosystem-based approach* (EBA) is an “evolving philosophical concept that focuses on the collective management of all resources”, maintaining their ecological integrity while allowing sustainability to benefit development, and cross-sectoral management of human interactions with the ecosystem (Leech et al., 2009). As spatial impacts of human activities occur at multiple scales within ecosystem boundaries but beyond administrative entities, ecosystems are considered as biophysical and socio-cultural systems with ecological and socio-economic values, not just the more generally recognized physical and biological properties. Implementing *ecosystem-based management* (EBM) depends on social, economic and institutional factors, and requires joint co-operation across jurisdictions, government agencies, industries and other actors. Mitigation measures prevent pollution and promote ecological restoration within a set of ecological constraints and wider considerations, so as to help achieve a good environmental status and maximize the sustainable use of ecosystem goods and services. Often, these attempts necessitate equally significant institutional and political changes in the structure of participation.

Ecosystem boundaries, ecosystem sustainability, adaptive management and human dimension are the primary characteristics of EBM. Among these, *adaptive management* (AM), passive or active, is a systematic way for improving environmental management in the face of uncertainties regarding

natural resource dynamics by learning from outcomes through ‘safe to fail’ diagnostic experiments of complex SESs (Holling, 1978). This concept has attracted attention as a means of linking policy and implementation with public involvement in a *learning cycle* that is distilled down in six stages. This structured approach and resilience are intricately interrelated; *exploring* alternative ways to meet management objectives; *predicting* the outcomes of alternatives based on the current state of knowledge; *implementing* one or more of these alternatives; *monitoring* to learn about the impacts of management actions; *using the results* to update knowledge and then adjust actions. Participation of those outside governmental agencies is considered central to a *renewal* cyclical process in order to manage conflicts of interests, reduce the ecological uncertainty, and increase “the pool of contributions to improved management solutions” (Rist et al., 2013) [Figure 2].



**Figure 2: The adaptive management process** (adapted from Holling, 1978; Rist et al., 2013)

Additional AM-related concepts have developed to emphasize a focus on participation and further democratization in Integrated Natural Resource Management (INRM). *Adaptive co-management* explicitly links learning and collaboration to facilitate the efficacy of good governance (Borrini-Feyerabend et al., 2007). *Adaptive governance* refers to the dynamic structures and processes of power sharing that shape individual and collective actions regarding the management of natural resources. It includes the political nature of decision-making that influences management, and also the steering and accountability mechanisms between a governing and a management body (Folke et al., 2005). Participation is gradually recognized as an alternative to rigid bureaucratic

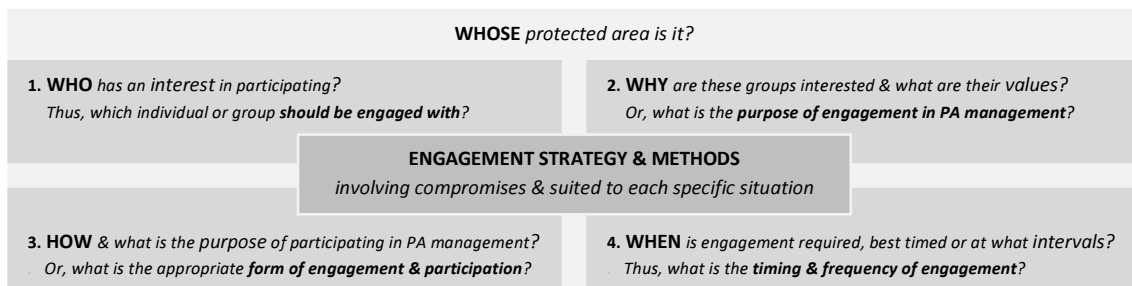


management arrangements relying only on inputs of ‘expert’ knowledge. Four key concepts shape the short/mid/long-term shifts from ‘management’ by government to multi-level ‘governance’ by stakeholders; *collaboration* involving sharing of rights and responsibilities among stakeholders and resolving diverse aspirations; *social learning* supporting the collective activities for ongoing mutual production and ownership of knowledge; *flexibility* providing the capacity to adapt policy settings and management as knowledge or circumstances change; *polycentrism* where PA management is undertaken by semi-autonomous but interlinked nodes of authority, including state and non-state, internal and external actors who participate in decision-making (Dovers et al., 2015) [Figure 3].



Figure 3: Hierarchy of adaptive governance (based on Dovers et al., 2015, p.417)

Eight general principles reflect generic issues in PA co-management and increase the likelihood of positive engagement; recognition of diverse *motivations* and *interests* regarding conservation and development; *reciprocity* among conflicting perspectives, needs and unmet demands; *clarity* over the purpose of engagement and *transparency* as the basis of collaboration or compromise and toleration; *persistence* not to cease long-term engagement process; identification of the *limits* to volunteerism and the capacity to engage when financial and technical assistance is required; *interactions* between intentional or unintentional *exclusion and inclusion* of people and interests due to accessibility limitations of spatio-temporal scales; *representativeness* to have a wider scope of input; *skills and resources* for collaboration and necessary adjustments, such as a management plan review organizing funding, staff allocation and information. These form the central variables of a general framework of an engagement strategy that answers to provocative questions as a part of implementing participation in planning and PA management; *who, why, how, when* [Figure 4]. In practice, it means helping the managers of natural heritage to acquire the skills and specialized technologies to better control socio-ecological resources and improve their adaptive management abilities to develop practical solutions together with an array of local and (inter-)national partners.



**Figure 4: General framework of an engagement strategy** (based on Dovers et al., 2015, p.422)

Every PA impacts on local people, either as direct users of its resources, or as beneficiaries of the ecosystem goods and services it provides, and even when natural resources are not directly used. ‘Holistic approach’ methodologies help determine the *intensity* of participation by specifying the number and status of people involved in, the scope of tasks, level and period of participation. The good balance of these may result to redistributive shifts in wealth and power relations [Table 3].

Participation in PA management	Intensity	Result
<b>1. WHO (*which and whose interest/access or control)</b> <ul style="list-style-type: none"> <li>• Stakeholders (individuals, groups or communities)</li> <li>• General public (individuals, groups or communities)</li> <li>• Experts (universities, practitioners)</li> <li>• Higher authorities (Politics)</li> </ul>	<b>→ Number &amp; status of people involved</b> (ie. marginalized, disenfranchised or powerful)	<i>Good balance in these classes may result with <b>Ideal Participation</b> through shifts in power relations</i>
<b>2. WHY/WHAT (*which and whose qualities or values/purposes or intentions)</b> <ul style="list-style-type: none"> <li>• Tangible &amp; intangible elements (TEV, boundaries, gendered/cognitive space, conceptualization)</li> <li>• Needs expressing &amp; sharing ideas (observing problems, learning, propositions, solution analysis)</li> <li>• Facilitation (to improve external project efficiency &amp; support by community, to pass a share of the burden of the costs to the ‘beneficiaries’, to achieve social justice by the least damage)</li> <li>• Empowerment (equitable redistribution to empower weak groups, promote people’s initiative)</li> <li>• Collaboration or Mediation (between ‘external’ purposes &amp; ‘internal’ demands)</li> </ul>	<b>→ Scope of tasks</b> (outputs of natural capital/heritage - ‘pareto optimal’)	
<b>3. HOW (form/function)</b>  The ‘ladder’ of public participation in decision-making by all internal & external actors: <ul style="list-style-type: none"> <li>• Information sharing (mapping in appropriate spatial scale, status reports, currency of the data)</li> <li>• Consultation (mapping of ‘needs’ or ‘demands’, refinement or prioritizing)</li> <li>• Involvement (identify priority areas, analyse current status, select alternatives &amp; implement)</li> <li>• Initiating actions with full participation at all stages (independent initiatives, self-mobilisation)</li> </ul>	<b>→ Level of participation</b> (as an indicator of empowerment)	
<b>4. WHEN (timing/frequency)</b> <ul style="list-style-type: none"> <li>• Best instance, timing for participation &amp; frequency of engagement (at all stages, with intervals)</li> </ul>	<b>→ Period of participation</b> (ie. ex-ante, interim, ex-post)	

**Table 3: Intensity analysis participation** (adapted from McCall, 2004; Dovers et al., 2015)

Recognizing the existence of PAs managed through various kinds of partnerships among different actors and distinct kinds of multi-stakeholder management, four main ‘governance types’ stand out within the existing management categories system, based on where authority, responsibility and accountability for PAs management rest, and who has formally subjected the area to a specific

conservation objective and becomes a holder of a privileged status. In *community* management, representatives of indigenous people or local communities with customary or legal claims over the land and natural resources are directly involved. In *government* management, a government ministry or agency is in charge at local, regional or national level. This may have a legal obligation to inform or consult other identified stakeholders prior to making or enforcing management decisions by providing them all the relevant background and decision information in the forms and by the means agreed in advance. In *private or delegated* management, one or more private or corporate landowners are delegated by the legal owner (including the government) to one or more designated organisations, such as non-governmental organisations (NGOs), foundations, research institutions, universities, private management operators, military agencies and other relevant bodies. In *multi-stakeholder* management, a plurality of actors, likely to include one or more governmental agencies, local communities, private landowners and other stakeholders share management in two main ways. *Collaboratively* where often a national governmental agency collaborates with a multi-stakeholder body that develops and approves by consensus a number of technical proposals for PA regulation and management or *jointly* where a management body of key actors has joint decision-making authority. The latter requires the specification of a modality of decision by consensus, otherwise the balance of power reflected in the composition of the body in charge may transform a joint into a collaborative management (Brown et al., 2002) [Table 4].

PAs Categories	Governance type			
	A Community Management	B Government Management	C Private or Delegated Management	D Multi-stakeholder Management
	By: <ul style="list-style-type: none"> <li>Indigenous people</li> <li>Local communities</li> </ul>	By: <ul style="list-style-type: none"> <li>Central ministry or provincial agency</li> <li>Local or municipal agency</li> </ul>	By: <ul style="list-style-type: none"> <li>Individual or corporate landowners</li> <li>NGOs or foundations</li> <li>Research institutions, universities etc</li> </ul>	By: <ul style="list-style-type: none"> <li>Collaborative Management</li> <li>Joint Management</li> </ul>

**Table 4: A descriptive matrix of PAs categories & governance typology** (based on Brown et al., 2002, p.14)

All of this activity does not automatically translate into good practice but recognizes the difference between a ‘deep’ participatory process that engages a ‘wide’ range of participants in all stages of a given activity, from identification to decision-making, and a fairly ‘narrow’ that informs or consults a handful of people, or particular interest groups, whose participation is at risk to remain ‘shallow’.

## 2. Operating within legislative *limitations* and administrative *boundaries*

The irreversible loss of ecosystem goods and services is recognized as a major problem worldwide, and it proves crucial to understand the processes that lead to improvements in or deterioration of the remaining *natural capital*. Natural capital assets consist of tangible and intangible elements, which produce directly or indirectly collective, commercial, non-utilitarian and utilitarian values by being a common good of humanity, and performing as a comparative/competitive advantage that triggers spatial development through potential initiatives at a local, regional and national level. Under either eco-centric or anthropocentric perspective, conceptual frameworks examine human interactions with the economy and the environment to deduce results, based on interdisciplinary systems modeling. The economic valuation of natural capital determines the impact of natural or human-induced drivers of change on stocks of nature that produce a periodic yield of resources. Since the economy is accountable to physical constraints that depend on ecological processes and resilience, the 'constancy of total natural capital stock' rule can be seen as a prudent minimum condition for assuring sustainability of socio-economic prosperity and biodiversity conservation.

The Total Economic Value (TEV) assigns a direct monetary value on ecosystem goods and services by partitioning these into categories, which are understandable within the context of the current economic system. A *TEV framework* decomposes into direct and indirect *use values* related to the benefits of ecosystem services, *non-use values* associated with the environmental legacy, and *option values* referring to future uses of ecosystem services or gains of making an optimal decision on the basis of maximum feasible information about the costs and benefits involved (TEEB, 2010). If a project or policy destroys or depreciates an asset, needs to include in its costs the TEV of the lost asset. If it enhances the asset, a change in the TEV of the asset has to be counted as a benefit.

The concept of Social-Ecological System (SES) responds to the need for an integrated, coordinated response to crises facing human-ecosystem interaction at multiple scales from local to global level. A *SES framework* performs as a diagnostic tool for knowledge accumulation and synthesis that can inform typologies of governance arrangements for particular natural resource outcomes, to deal with systems problems, such as avoiding overexploitation (Ostrom, 2011). Management problems that are non-linear in nature but cross-scale in time and in space, have an evolutionary character, and their solution requires a sustained, coordinated and goal-driven response by policy makers.

In a spatially determined geophysical setting, the term SES indicates “a commitment to adopt a holistic, systemic perspective towards human and non-human elements of a problem situation of interest”; enabling local community to *self-organization* in multi-level and multi-actor governance. It contains a set of variables and their subcomponents, allied to social, economic, political settings; economic development, demographic trends, political stability, government resource policies, market incentives and media organization. However, the *predictability* of system dynamics needs to be sufficient to avert ‘a tragedy of the commons’ by helping users estimate the potential spatial impacts of a proposed policy that is to establish a planning strategy or management rule which can affect the likelihood of enhancing the sustainable use of ecosystem goods and services [Figure 5].

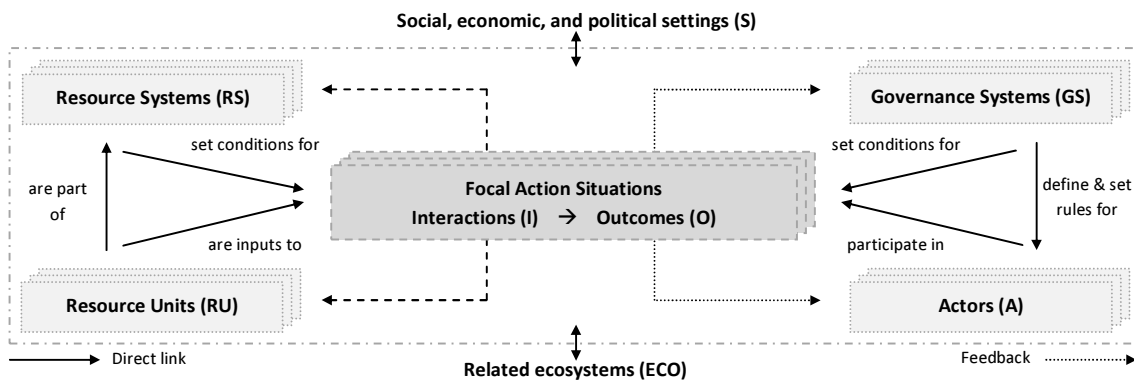


Figure 5: Revised SES framework with multiple first-tier components (based on Ostrom, 2011, p.23)

The *Pressure-State-Response (PSR) model* considers that “human activities exert pressures on the environment and affect the quality and quantity of natural resources” highlighting the cause-effect relationships among social, economic and environmental issues as interconnected (OECD, 2003). Indicators of societal responses refer to individual and collective actions, and reactions [Figure 6].

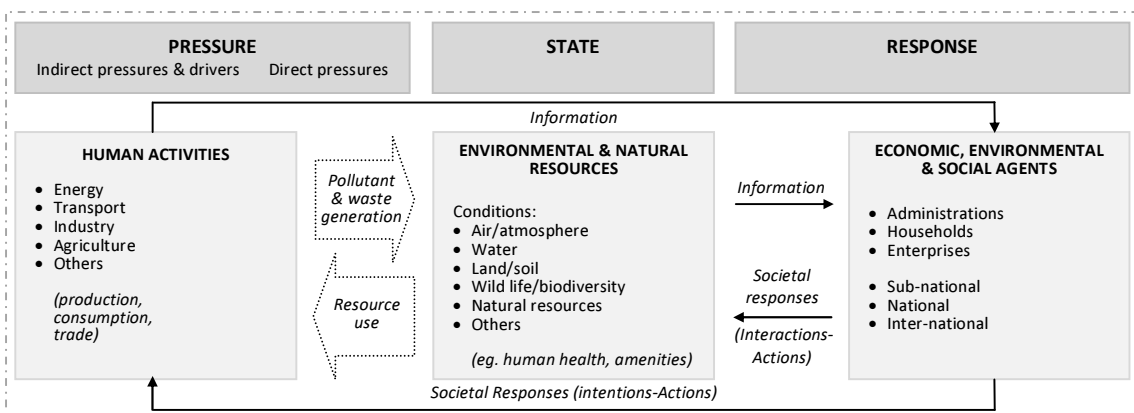


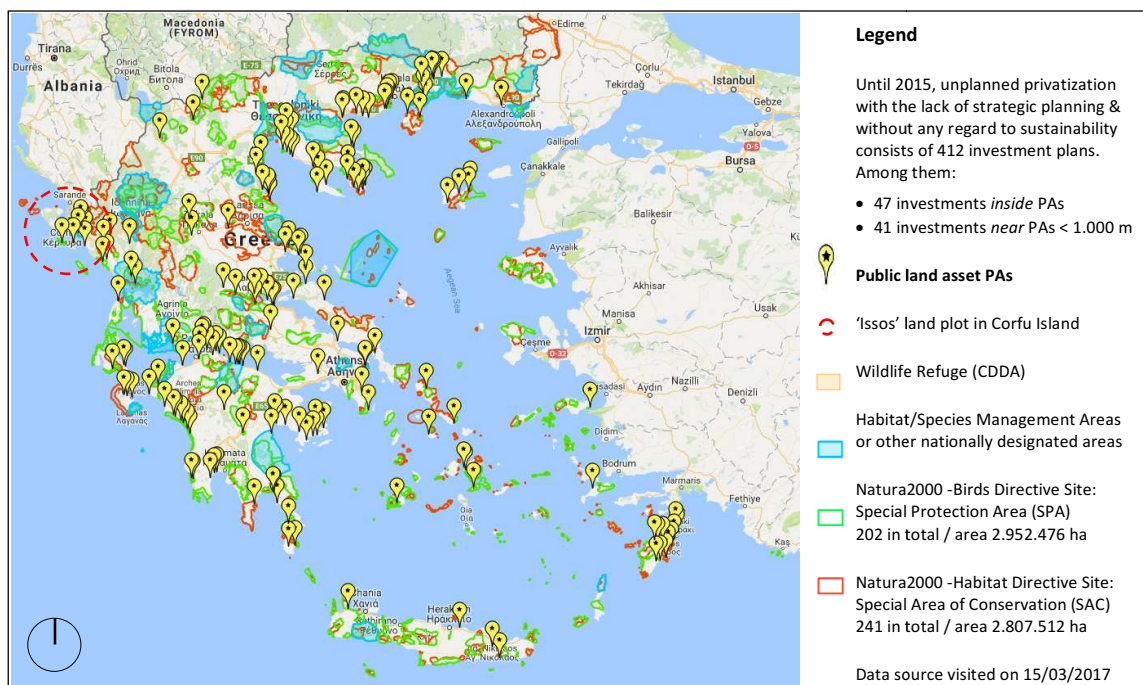
Figure 6: The Pressure-State-Response (PSR) Model (based on OECD, 2003, p.21)

During the present economic recession, insuperable budgetary constraints call for an effective use of increasingly scarce public land resource areas by tailoring interventions to territorial specificity, so as to assure legal certainty for investments, serve public interest and ensure common benefit. Greece's recovery is supposed to come from a vigorous private sector response. The footprint of government in the economy has to be reduced through structural fiscal reforms and by privatizing public assets (IMF, 2014). Policies concerning spatial development and management of ecosystem goods and services are affected by past prevailing practices and proposed reforms related to the coastal regions and the mainland. The previous reform's allegedly 'flexible' spatial planning system puts privatization of public land on *fast track* with near-total lack of a strategic plan, to facilitate investments in PAs without any regard to sustainability. The transfer of Greek public land in PAs to the Hellenic Republic Asset Development Fund (HRADF) for privatization stimulates uncontrolled economic growth with short-term benefits but long-term costs, affecting the natural heritage.

This controversial unplanned privatization transforms irreversibly non-rival and non-excludable public goods into rivalrous and excludable private goods. It is argued that public land assets are considered as 'dead capital'; an economic asset that cannot easily be used for investment due to inefficiencies or limitations of formal private property rights system. Land property rights remain multidimensional socially-enforced constructs that determine how the deriving benefits of land use are distributed among various claimants. Land tenure refers to both the usage and ownership; thus, including a range of tenure categories. To become 'live capital', assets are formalized so that ownership is traced, reported and validated, and exchange is governed by a legally recognizable set of privatization rules (de Soto, 2001). Privatizations and utilization of public real estate hold an immense potential, which, if properly exploited, can yield far more revenue than the quantitative targets; pointing "the need for a strategic plan that will map out the targets, uses and forms of the desired investments ... provide a stable and comprehensible framework for prospective investors" (BoG, 2016). The development of this plan was assigned to HRDAF and had to be outlined till 2016, to reorganize the privatizations and utilization program; contributing to paying off public debt.

The institutional and legislative frameworks for spatial planning in Greece have promoted a regime of scattered settlements in locations where the buildings are spread out the approved urban plans (PD.6/17-10-1978, PD.24/31-05-1985) simultaneously with a newer supposedly 'organized' regime for large-scale tourism development. This spatial organization model is applied through organized

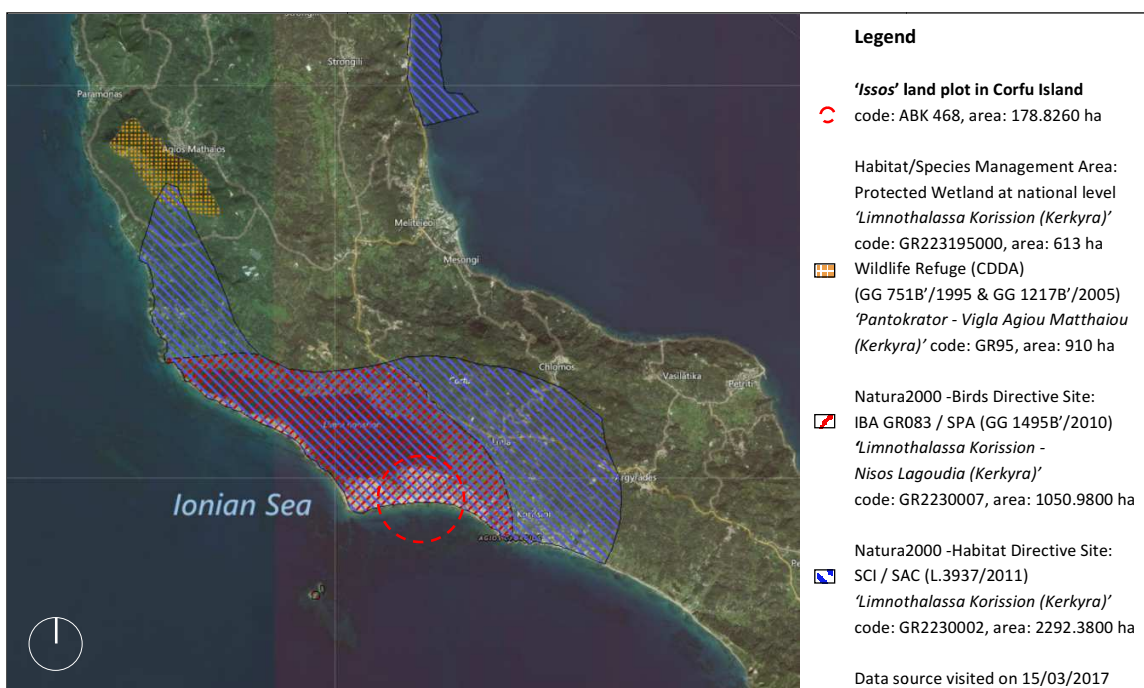
receptors for tourism and recreational activities (L.4179/2013). The receptors consist of Integrated Tourism Development Areas (POTA) (L.2545/1997), Areas for Organized Development of Tourism Productive Activities (POAPD) (L.2742/1999), Areas of Specially Regulated Town-Planning (PERPO) (L.2508/1997), Special Plans for the Spatial Development of Strategic Investments (ESXASE) (L.3894/2010), and Special Plans for the Spatial Development of Public Real Estate (ESXADA) (L.3986/2011). ESXASE and ESXADA aim to put the privatization of public land assets on fast track; minimizing administrative or technical obstacles to speed up authorization permits. The previous spatial planning system does not enforce the use of any footprint indicators for monitoring the conservation outcomes and measuring the sustainability of investments, disregarding the value(s) of public land assets in PAs as environmental and economic assets. The strategic/regulatory role of spatial planning in macro/micro scale with public outreach in decision-making processes and the effectiveness of environmental governance regimes are accused as time-consuming impediments that undermine investor certainty. Until 2015, spatial planning facilitates large-scale investments in PAs with no provision for their spatial impacts; failing to achieve an equitable re-distribution of ecosystem goods and services by internalizing external costs of biodiversity loss from development projects. Participation seems nominal or is entrapped by less inclusive governance modes [Map 1].



**Map 1: Privatization of public land assets in or near PAs** (based on Hellenic Ornithological Society data)

The 'Issos' land plot is situated at the west coastal region in Corfu Island and is a *typical case* of a public land asset located in PAs to be transferred to private ownership. The region is a nationally designated area since 1985 as a Wildlife Refuge (CDDA), and a part of the Natura2000 ecological network, since 2001 as a Special Protection Area (SPA), 2006 as a Site of Community Importance (SCI), 2011 as a Special Area of Conservation (SAC), which *lacks an administrative authority agency and an actual management plan*. The ecosystem is characterized by high levels of biodiversity with aesthetic and economic value, but is threatened by the tourism monoculture and its seasonality. It operates as defense against beach erosion and plays a pivotal role in the resilience of the region.

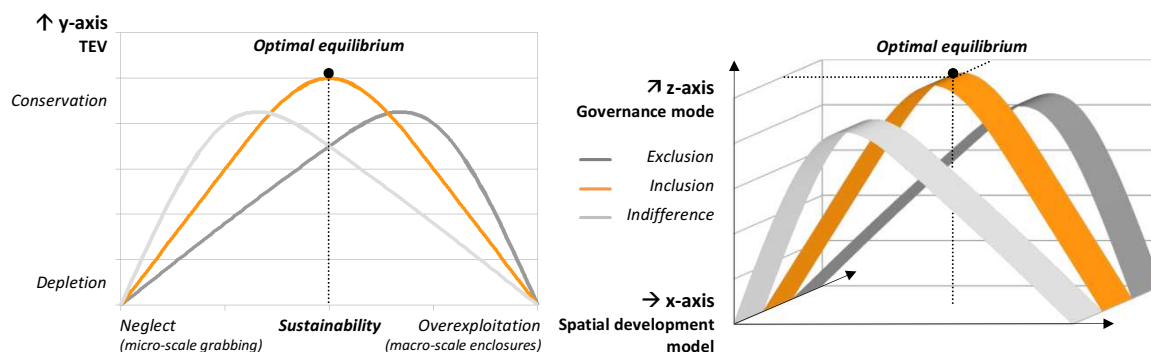
The *coastal transition zone* is menaced by legal activities and illegal interventions that occur within the ecosystem boundaries, such as noise nuisance, pollution, discharges, disposal of household, recreational facility waste, agricultural cultivation, grazing, hunting, sand and gravel extraction, removal of beach materials, marine and freshwater aquaculture, continuous urbanization etc. The investment of large-scale tourism development is to be placed in PAs without coordinates for its location or regard for human-induced impacts, influencing adversely the ecosystem functions. Recreational amenities, vacation homes, a hotel and a golf course (HRADE, 2014) will intensify the pre-existing low-density sprawl by increasing irregular and dispersed settlement patterns [Map 2].



**Map 2: 'Issos' land plot at the west coastal region in Corfu Island** (based on Natura2000 Network Viewer data)



The aforementioned ‘special’ spatial plans are applied in PAs with no provision for measuring the TEV of public lands as environmental and economic assets so as to estimate a potential benefit or wealth loss through environmental-economic accounting systems. Aiming to limit the investment risk, the public’s right to access to decision-making and justice in environmental matters (UNECE, 1999) tends to be restrained when put into practice (L.2742/1999; L.3852/2010). Conducting these events without a thorough grounding in the elements of meaningful involvement has negative effects. The need to ensure the participation of non-competent actors in a 2-way communication flow, to identify normative and subjective claims, and establish conflict management procedures, is neglected resulting in decreased public trust that erodes the relationships among stakeholders. Public *consultation* is widely used as a means of legitimating already-taken decisions in Greece, providing a thin veneer of participation to lend the process moral authority at all stages and levels of spatial planning and PA management. In fact, its outcomes can be selectively read and used by those with the power to decide. Since multi-stakeholder engagement and PA co-management are not institutionalized, *barriers* related to governmental institutions, which lack institutional support and culture or face other constraints, may easily accentuate the legal uncertainty for investments, pose a threat to the public interest, and impair the public confidence in any privatization attempt. Within that context, public land assets in PAs are *environmental and economic assets* performing as *highly-valued assets in perpetuity* with a range of future uses (Litsardou & Klabatsea, 2017b). Being menaced with micro-scale grabbing by landless people or small property owners and macro-scale enclosures by prevailing private interests, they face threats related both to neglect and over-exploitation that can exacerbate socio-spatial inequalities and depreciate natural capital [Figure 7]. Establishing an *optimal equilibrium* among allocation of natural resources, broader conservation goals, sustainable development and more inclusive governance modes is becoming a prerequisite.



**Figure 7: Stylized sustainable yield curve of public land assets in PAs (original ongoing work)**

## Conclusion

The research indicates that the sustainable development of public land assets in PAs can provide a realistic alternative to uncontrolled economic growth through a revised spatial planning system, turning strategies and regulatory plans into actions to generate consensus-based decision-making. Overriding the privatization debate has been a disagreement over the exact role of public land as a value-generating environmental and economic asset in overcoming Greece's socio-economic crisis. Thus, the issue is not simply whether ownership shifts public or private. Rather, the key question is under what conditions all participants will be more likely *to act in favor* of the public's interest, overcoming the structural deficiencies of traditional governance, and enhancing democratization. Addressing socio-ecological concerns and reinforcing long-term synergies among social partners, it involves effort from within the authorities and society to convert participation into tangible action; to reach *isegoria* when engaging with stakeholders whose interests intersect with natural heritage.

Land resource areas serve as a priceless stock of wealth and as a fundamental input in production. In this regard, a multi-disciplinary selection of criteria for prioritization of public land's sustainable development needs to be reconsidered thoroughly and various issues have to be further studied. This concerns the intersections among the inclusion, exclusion and degrees of public involvement at all spatio-temporal scales of spatial planning; evaluating the purpose, process and context of engagement strategies that provide *feedback* to the public at different points in a policy cycle; measuring the PA management effectiveness through *footprint indicators* for spatial impacts with ex-ante/interim/ex-post monitoring of investment projects, appropriate environmental-economic account and proper financing mechanisms etc. Strategically deployed, spatial planning of specific investments in PAs is a determinant of public land's sustainability, with a view to outperform the conventional engagement strategy and expand stakeholder participation in asset *co-management*.

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