

A CRITICAL ANALYSIS OF ECOSYSTEM SERVICES WITH SPECIAL REFERENCE TO INDIA

Mr. T.M. Prashanth*

Introduction

Individual tree provides some service value to the humans, viz., it provides economic utility other than its commodity values as cut timber. Likewise, natural systems such as wetlands, sea marshes, free-flowing rivers, forests, and grasslands provide services such as water purification, coastal storm and flood protection, and air pollution mitigation that benefit human communities. Ecosystem services provide a means for people to understand the link between their choices and the natural world. Yet the connection between ecosystems and these services is sometimes neither readily apparent nor easy to measure and translate into market investments. As a result, these ecosystem services are often not taken into account in decisions about land, water, and resource management and use. This neglect has resulted in underinvestment in environmental protection and corresponding losses of natural system functions and their benefits to human communities. The premise is that appreciation of economic values of ecosystem services at local, regional and global scales will lead to better governance and sustainable use of ecosystem services. In practice, however, existing markets do not factor values of ecosystem services in transactions, besides which, our understanding of the complex socio-ecological, and economic and political dimensions of ecosystem services with their implications for equity and environmental justice is poor.

The human population is expected to reach 9 billion people by 2050, and with that increase will come a greater demand for many natural resources. E.g., look at freshwater needs. Research has estimated per person per day dietary needs of 2,000–5,000 liters of water, and this does not include water needed for cleaning and other activities.¹ Hand in hand with this growing demand for resources is the conversion of native ecosystems to meet growing needs; this is where a trade-off assessment in terms of ecosystem services might be

* Assistant Professor, Vidyavardhaka Law College, Mysore.

¹ *Comprehensive Assessment of Water Management in Agriculture*, WATER FOR FOOD, WATER FOR LIFE: A COMPREHENSIVE ASSESSMENT OF WATER MANAGEMENT IN AGRICULTURE (London: Earthscan, & Colombo: International Water Management Institute 2007).

useful. Our national system of property rights, competitive markets, and public regulation enables a vast economy in manufactured goods, human services, natural resource commodities, and natural resource uses such as recreation. But our economy does not adequately account for the economic value natural resources provide in the form of services such as storm surge control from coastal dunes and flood mitigation from wetlands. This paper addresses that gap, focusing on the formulation of law and policy to manage ecosystem services sustainably.

Ecosystems

The term “ecosystems” is simply a human invention like the term “biodiversity” used to represent what we perceive to be happening in nature. “Eco” means ecology; “systems” are assemblages of parts forming a complex or utility whole. An ecosystem is a community of animals and plants interacting with one another and with their physical environment. Ecosystems include physical and chemical components, such as soils, water, and nutrients that support the organisms living within them. These organisms may range from human beings to large animals to plants to microscopic bacteria. Ecosystems include the interactions among all organisms in a given habitat. The health and wellbeing of human population depends upon the services provided by ecosystems and their components—organisms, soil, water, and nutrients. Natural ecosystems and the plants and animals within them provide humans with services that would be very difficult to duplicate.

An ecosystem can also be described in simple terms as a biological community (all of the organisms in given area) plus its abiotic (non living) environment. In fact the word “ecosystem” was first used by Tansley to describe natural system in a way that encompassed all of the living organisms occurring in a given area and the physical environment with which they interact. In this sense, the ecosystem is the first level in the traditional hierarchical arrangement of biological system.² It explicitly includes both living organism and the abiotic environment as integral parts of a single system. This is one reason that ecosystem studies often focus on quantifying transfer of energy and materials between living organisms and the physical environment.

² JOHN COPELAND NAGLE, *THE LAW OF BIODIVERSITY AND MANAGEMENT* (Foundation Press, New York 2002).

Ecosystem Service

The term “ecosystem services” refer to the many conditions and processes associated with natural ecosystems that confer some benefit to humanity. The ecosystems are valuable; they directly or indirectly support human life. Human activities historically have led to economic development; they also have created environmental problems and threatened the health of ecosystems. Natural landscapes such as forests, grasslands, mangroves and wetlands as well as managed ecosystems provide a range of ‘services’ to sustain human welfare. These include ‘provisioning’ services such as food, water, timber, fiber and genetic resources, ‘regulating’ services such as regulation of climate, floods, drought, land degradation, water quality and disease prevention, ‘supporting’ services such as soil formation, pollination and nutrient cycling and ‘cultural’ services such as recreational, spiritual, religious and other non-material benefits. These negative impacts include species extinction, exhaustible resource depletion, global warming, ozone layer destruction, acid rain, water and air pollution, soil erosion, and deforestation.

The appeal of ecosystem services for conservation is the connection to people and people's well-being and how that appeal translates into new and increased interest in conservation across a wide range of resource management issues. Ecosystem services can provide a means to value people's well-being in conservation projects and can help advance a set of on-the-ground actions that are equitable, just, and moral. Ecosystem services can be a basis for sustainable development by providing a means to think through how to retain our natural resources for people and for nature with a growing population and therefore an ever-increasing demand for them.

Some of the key services include:

- Moderation of weather extremes
- Seeds dispersal
- Drought and floods mitigation
- Protection of people from the sun's harmful ultraviolet rays
- Nutrients cycling and movement
- Protection of streams, river channels and coastal shores from erosion
- Detoxification and decomposition of wastes
- Controlling agricultural pests
- Maintaining biodiversity
- Generating and preserving soils and renewing their fertility
- Contribution to climate stability

- Purification of air and water
- Regulating disease carrying organisms
- Pollination of crops and natural vegetation

Ecosystem functions are the physical, chemical, and biological processes or attributes that contribute to the self-maintenance of an ecosystem; in other words, what the ecosystem does. Some examples of ecosystem functions are provision of wildlife habitat, carbon cycling, or the trapping of nutrients. Thus, ecosystems, such as wetlands, forests, or estuaries, can be characterized by the processes, or functions, that occur within them. Ecosystem services are the beneficial outcomes, for the natural environment or people that result from ecosystem functions. Some examples of ecosystem services are support of the food chain, harvesting of animals or plants, and the provision of clean water or scenic views. In order for an ecosystem to provide services to humans, some interaction with, or at least some appreciation by, humans is required. Thus, functions of ecosystems are value-neutral, while their services have value to society.

Ecosystem assessment groups³ divide ecosystem services into four categories: provisioning services (e.g., providing food and water), regulating services (e.g., disease regulation), cultural services (e.g., recreation opportunities), and supporting services (e.g., services necessary for the production of other service types). An inventory of just some of the functions typically associated with different ecosystem processes, and which we should expect to observe in different forms and magnitudes across ecosystems would include the following:⁴

1. Provisioning services (supply of products/goods)

- Fresh water (for drinking, irrigation, cooling, etc.)
- Food (from wildlife)
- Raw materials (fibre (e.g., wood, wool), skins, etc.)
- Energy resources (fuel wood, dung, etc.)
- Fodder and fertilizer (e.g., krill, leaves, guano, organic matter)
- Genetic resources (genes and genetic information used for animal and plant breeding and biotechnology)
- Natural medicines and pharmaceuticals (e.g., drugs, models, tools, essay org.)

³ The Millennium Ecosystem Assessment was launched in June 2001 to help meet the needs of decision-makers and the public for scientific information concerning the consequences of ecosystem change for human well being and options for responding to such.

⁴ *The Millennium Ecosystem Assessment, 2005.*

- Biochemical (non-medicinal) (e.g., for dyes, biocides, food-additives, etc.)
- Ornamental resources: Animal and plant products (e.g., skins, shells, flowers) used in fashion, handicraft, jewellery, worship, decoration and souvenirs, and whole plants and animals (e.g., fish, plants) used as pets and in landscaping
- Cultivation (of food, raw materials and biochemical) (e.g., plantations, crops etc.)
- Energy conversion (use of wind, water, geo-thermal heat, etc.)
- Mining (of minerals, sand, oil, gold, etc.)
- Waste disposal (solid waste dumps)
- Transportation and habitation
- Tourism and recreational facilities (infrastructure for outdoor sports, beach tourism, etc.)

2. Regulating services (benefits like air purification, water regulation etc.)

- Air quality regulation (e.g., capturing dust particles, NOx fixation, etc.)
- Climate regulation (maintenance of a favourable climate (especially temperature, precipitation) for human health, habitation, cultivation, recreation)
- Waste treatment (maintenance of water and soil quality) including noise abatement)
- Water regulation (buffering of extremes in runoff and river discharge)
- Natural hazard regulation (reduction of storm and flood damage)
- Erosion prevention (soil retention and prevention of landslides/siltation)
- Biological control (reduction of human diseases/crop and livestock diseases)
- Regulating services (regulation functions)
- Pollination (of crop species and wild plants)

3. Cultural services (spiritual enrichment and recreations)

- Aesthetic information (non-recreational enjoyment of scenery)
- Recreation and nature-based tourism
- Cultural heritage and identity (many people value a 'sense of place' which is often associated with ecosystems)
- Inspiration (e.g., for art, folklore, national symbols, architecture, design, advertising)
- Spiritual and religious information (many individuals and religions attach spiritual values to ecosystems and/or species)

- Educational information (both formal and informal education in nature)
- Science (ecosystems influence the type of knowledge systems developed by different cultures)

4. Supporting services (ecological processes which underlie the functioning of the ecosystem)

- Refugium (for resident plants and animals and migratory species)-maintenance of biodiversity and evolutionary processes
- Nursery (breeding area for species that spend their adult life elsewhere)
- Primary production (conversion of solar energy in biomass)
- Nutrient cycling (maintenance of bio-geochemical “balance”)
- Soil formation (maintenance of fertile topsoil in natural and cultivated systems)
- Water cycling (maintenance of the hydrological cycle) etc.

Value of Ecosystem Service

Most importantly, while some services of ecosystems, like fish or lumber, are bought and sold in markets, many ecosystem services, like a day of wildlife viewing or a view of the ocean, are not traded in markets. Thus, people do not pay directly for many ecosystem services. Additionally, because people are not familiar with purchasing such goods, their willingness to pay may not be clearly defined. However, this does not mean that ecosystems or their services have no value, or cannot be valued in dollar terms. It is not necessary for ecosystem services to be bought and sold in markets in order to measure their value in dollars. What is required is a measure of how much purchasing power (dollars) people are willing to give up to get the service of the ecosystem, or how much people would need to be paid in order to give it up, if they were asked to make a choice similar to one they would make in a market.

Ecosystem valuation can help resource manager’s deal with the effects of market failures, by measuring their costs to society, in terms of lost economic benefits. The costs to society can then be imposed, in various ways, on those who are responsible, or can be used to determine the value of actions to reduce or eliminate environmental impacts. E.g., in the case of the crowded public recreation area, benefits to the public could be increased by reducing the crowding. This might be done by expanding the area or by limiting the number of visitors. The costs of implementing different options can be compared to the increased economic benefits of

reduced crowding. Economic value is one of many possible ways to define and measure value. Although other types of value are often important, economic values are useful to consider when making economic choices—choices that involve trade-offs in allocating resources. Measures of economic value are based on what people want—their preferences. Economists generally assume that individuals, not the government, are the best judges of what they want. Thus, the theory of economic valuation is based on individual preferences and choices. People express their preferences through the choices and trade-offs that they make, given certain constraints, such as those on income or available time. Economists classify ecosystem values into several types. The two main categories are use values and non-use, or “passive use” values. Whereas use values are based on actual use of the environment, non-use values are values that are not associated with actual use, or even an option to use, an ecosystem or its services. Thus, use value is defined as the value derived from the actual use of a good or service, such as hunting, fishing, bird watching, or hiking. Use values may also include indirect uses. E.g., an Alaskan wilderness area provides direct use values to the people who visit the area. Other people might enjoy watching a television show about the area and its wildlife, thus receiving indirect use values. People may also receive indirect use values from an input that helps to produce something else that people use directly. E.g., the lower organisms on the aquatic food chain provide indirect use values to recreational anglers who catch the fish that eat them.

In 2006 a study by the Indian Institute of Forest Management (IIFM), Bhopal pinned the numbers on Himachal Pradesh and Madhya Pradesh’s forest wealth. It puts the money value of Himachal’s forests at 1, 323, 000 *crore* including the value of services they provide. Our watershed services alone are valued at 106, 000 *crore* annually, it is difficult for the central government to allocate such funds to states and therefore the PES model adopted at the state level would really be beneficial if the funds generated are kept by the state. The 12th Finance Commission (2005-10) for the first time recognized the need to invest in resources and earmarked Rs. 1000 *crores* for 5 years to be given to states for preserving forests. Himachal Pradesh’s annual share was Rs. 20 *crores*, a pittance compared to the standing value of its forests. Given the money they can earn by selling forest resources, this is obviously not enough incentive to preserve forests. This is one of the ways valuation of resources can be counter-productive. If those who provide eco-system services are not paid, they can argue they have no incentive to continue providing a service that in the past they provided without even thinking about. The state government therefore took steps towards realizing the value of these services by trading them through

the World Bank as carbon credits. Himachal Pradesh government is upbeat about the development. It aims to preserve our forests and the over 20 year-old green felling ban in Himachal is a testimony to that, and with increasing demands for resources and to provide people with livelihoods, it became important to look for alternatives to government funds and the World Bank provides one. The project, Mid Himalayan Watershed Development, awaits validation. The Bank will invest in the preservation of 20,000 ha of land as forests.

Payment for Ecosystem Services (PES)

Payment for ecosystem services is a voluntary agreement to enter into a legally-binding contract under which one or more buyers purchase a well-defined ecosystem service by providing financial or other incentives to one or more sellers who undertake to carry out a particular land use on a continuous basis, which will generate the agreed ecosystem service at specified levels. Ecosystem services, since they are the benefits from nature, are often discussed in the context of conservation, but in our daily lives we make choices that depend on and affect flows of services from nature, since all goods and products we use today originate from nature and its services. Each choice we make-drive or ride a bus, buy organic or buy regular vegetables, turn on the heat or put on an extra sweatshirt-has trade-offs. Conserving nature or converting nature does too, but trade-offs associated with nature's values are often harder to assess. Not understanding nature's role in the products we use means we won't conserve nature sufficiently; this in turn will compromise our ability to access products we need, or we will have to find sometimes costly alternatives for what nature could otherwise provide to us. Incorporating the full suite of costs and benefits into decision-making means evaluating all costs and benefits associated with nature, too. Economists refer to this full valuation as shadow pricing, but even an informal, "back-of-the envelope" calculation of all values can help to illustrate the importance of ecosystem services in our daily lives.

What do the blue jeans you wear, the hamburger you have for lunch, and the sheet you make your bed with have in common? They all take copious amounts of water to produce. One pair of blue jeans takes 2,900 gallons or about 78 bathtubs of water. Even your morning cup of coffee takes 37 gallons (about one bathtub) of water-not just the one cup you consume.¹ But we don't pay for all the water that goes into our morning cup of coffee. The price of the coffee is based on production and transportation costs (among other costs), but it's much more difficult to value where all the water in one cup of coffee comes from. This difficulty arises from the fact that natural ecosystems are responsible for the retention, release, and regulation

of water, but how does a person value a natural ecosystem and the services it provides and put that into the cost of a cup of coffee?

Most ecosystem services have no market price. Although many people benefit and profit from ecosystem services, they do not pay for them. This also means that the people who use and manage ecosystems (such as both government conservation agencies, and private and community landholders) do not have the opportunity to gain from conservation practices which generate such services for others. While they can earn substantial income and revenues from environmentally-degrading activities, and from the harvest of other natural resources, there is no mechanism for them to gain from the production of ecosystem services—even though land and resource conservation for ecosystem services incurs real costs on them.

Law and Policies of Ecosystem Service

For payment for ecosystem services approaches to be successful in practice, and for them to be acceptable to decision makers, it is essential that the institutional, legal and policy structures required to support their implementation are identified and clearly articulated. This legal and policy review therefore aims to document and analyze the policies and laws that regulate and govern biodiversity conservation and the application of financial mechanisms, with a view to identifying current opportunities and gaps relating to payments for ecosystem services. It should be noted that many laws, decrees, decisions and circulars have some relevance to payments for ecosystem services. This article reviews some of the major legal and policy instruments which refer to, enable or directly mention the use of financial and economic instruments for environmental conservation. Although the term “environmental services” is commonly used, in many parts of the world, this report uses the term “ecosystem services”.

Before designing and implementing a PES scheme, take careful stock of the context in which it will take place. Make sure that laws, practices and institutions in a potential PES deal site support, or at least do not obstruct, the development of these payment schemes. If government policies or even agencies are engaged in ecosystem service issues (most likely related to greenhouse gases or water), these may serve as important sources of information and expertise as you develop a PES deal. Where legal and policy frameworks are lacking, contract law becomes the framework within which PES develops. Either way, people engaged in developing PES deals must familiarize themselves with the overall legal, policy and land tenure context as it relates to the deal. In many countries, there are still

significant gaps in government policy and regulation around transactions for ecosystem service payments. Getting feedback from other organizations and entities in your region that have gone through the process themselves and learned the permitting and legal requirements are a good source of guidance. After assessing the legal and policy context at national, regional, and municipal levels of government, it is time to assess local land tenure and use rights.

The idea behind ‘the Law and Policy of Ecosystem Services’ is that courts, legislatures, regulators, and other policy makers have traditionally been without the tools to value, or otherwise have taken too little account of the value of, ecosystem services as environmental policy is developed. And, they argue, as a result, we risk this ‘tragedy of ecosystem services’. Environmental law and public policy arise out of traditional conflicts between different parties interested in the use of air, light, water, and the peaceful surround for competing purposes. The law of nuisance has long provided remedy for neighbours who are caused to suffer noxious effluent arising from nearby agricultural or industrial uses.

Current policy or Laws across the World on Ecosystem Service

In Vietnam, Decision 380 sets up a pilot policy for payments for Forest Environmental Services, collecting money from entities that benefit from ecosystem services provided by healthy forests.

In United States, the Food, Conservation, and Energy Act of 2008, establishes technical guidelines that measure the environmental services benefits from conservation and land management activities. The Oregon Senate Bill 513, creates an Ecosystem Services Markets Working Group to advance policy recommendations for creating a framework of integrated ecosystem services markets in Oregon that produce positive ecological.

In Brazil, the Acre State Legislature establishes the System of Incentives for Environmental Services, the institutional and legal framework for Acre to measure and value its environmental services. And the State of Amazonas drafts a policy on environmental services would implement PES programs in the state. EU 2020 biodiversity strategy includes an initiative on ‘no-net-loss of ecosystems and their services’.

Indian Context

In India we do not have specific law or policy on this, but we too have some related policy and law on ecosystem service, e.g., the Wetland

rules 2010, the Forest act, EPA, land laws, the Water Act, the Biological Diversity Act, 2002, the Protection of Plant Varieties and the Farmer's Rights Act, 2001, the Forest Rights Act, 2006 etc., and constituted High Level Working Group to study the preservation of the ecology, environmental integrity and holistic development of the Western *ghats* in view of their rich and unique biodiversity. Green India Mission has been launched, where 10 million hectares of land are targeted for improving qualitatively and quantitatively through village level institutions.

Ecologically sensitive areas and biodiversity heritage sites, as defined by national legislations, as well as variety of community conservation efforts in form of community forests and sacred forests form the main source of enhancement of carbon stocks. Over the period, a variety of policy measures has been developed. Many of these measures provide opportunities for strengthening documentation and data collection; empowering local communities by recognizing responsibilities, ownerships, rights, and concessions; and creating suitable institutions. The mandates of the National Forest Policy, 1988 and the National Environment Policy, 2006 recognize the need to address the conservation of areas of biodiversity importance, increasing forest productivity, and restoring degraded areas, which are also anticipated as part of REDD+ policy regime.⁵ The legislative provisions developed as a follow-up to such national policies are listed below for cognizance to develop a policy environment conducive for REDD+.

- The Indian Forest Act, 1927 (defined concessions, village forests, protected forests, transit of forest produce)
- The Wildlife (Protection) Act, 1972 (management of national parks and wildlife sanctuaries, protection to scheduled species, community and conservation reserves)
- The Environment Protection Act, 1986 (restoration of degraded lands, management of watersheds, wetland management, and identification of ecologically sensitive areas)
- The Biological Diversity Act, 2002 (guidance on sustainable use of biodiversity, access and benefit sharing of biodiversity for commercial use, identification of species of conservation importance, documentation of people's biodiversity registers (PBRs), declaration of biodiversity heritage sites, local institutional mechanism in form of biodiversity management

⁵ The United Nations Programme on Reducing Emissions from Deforestation and Forest Degradation (UN-REDD Programme) is a collaborative initiative in developing countries, created in response to the UNFCCC decision on REDD at COP 13 and the Bali Action Plan.

- committees, and financial mechanism in form of National-State-Local Biodiversity Fund)
- The Protection of Plant Varieties and Farmer’s Rights Act, 2001 (mandate of conservation of plant genetic resources, financial mechanism in form of National-State-Local Gene Fund)
 - The Scheduled Tribes and Other Traditional Forest Dwellers Act, also referred as the Forest Rights Act (FRA), 2006 (defines community forest resources, critical wildlife habitats, provides ownership of minor forest produce to the local communities, and provides tenure security for forest dwelling communities). The functioning of the provisions is also linked with performance of the ecosystems in terms of delivering the ecosystem services for livelihoods.
 - State-level legislations pertaining to various aspects of biodiversity conservation and ecosystem services are important in understanding the local mechanisms and their efficacy. Legislations such as the United Khasi-Jaintia Hills Autonomous District (Management and Control of Forests) Act, 1958 and the Garo Hills Autonomous District (Management and Control of Forests) Act, 1961 recognize the traditional forest land use systems such as *law lyngdoh*, *law kyntang*, and *law niam*.
 - The guidelines and orders issued by the Ministry of Environment and Forests, and other central ministries, on aspects such as Joint Forest Management and Best Practices for Extraction of Medicinal Plants are important for understanding the sustainability of implementation at the local level.

India has a comprehensive set of environmental laws in these regions. They are the Wildlife Protection Act of 1972, the Water (Prevention and Control of Pollution) Act of 1974, the Water Cess Act of 1977, the Forest Conservation Act in 1980, the Air (Prevention and Control of Pollution) Act in 1981, the Environment (Protection) Act of 1986, the Public Liability Insurance Act of 1991 and the Bio-diversity Conservation Act, 2002. These laws constitute foundations of domestic environmental regulation. In the context of conservation of ecosystems of water resources and atmosphere, they provide for the setting up of pollution control boards at the central and the state levels, empowered to prevent, control and abate air and water pollution, and to advise governments on matters pertaining to such pollution. The Central Pollution Control Board is to co-ordinate the activities of the state boards. These Acts also specify that industrial units have to provide on demand all information regarding their effluent and treatment methods. They also provide the rules to be

followed by government for the conservation of forests, wild life, and coastal ecosystems. These laws with the necessary future amendments empower government and provide opportunities to local communities and civic society to participate in the conservation of ecological resources.

The current legal framework allows for taxes, charges and fees for ecosystem services. The current legal framework in India allows for a range of price-and market-based instruments that may be applied to tax, charge for, or set fees for ecosystem goods and services. These instruments could be applied to enable payments for ecosystem services under the provisions of existing laws. However regardless of whether a specific PES law is developed or existing environmental legislative is amended to integrated certain PES provisions, an efficient and effective legal frame work for PES also requires compatibility with so-called indirectly relevant laws. Indirectly relevant laws are those related to natural resources management in general or financial issues, such as land laws, agriculture laws, planning and development laws, fiscal laws, etc.

Fiscal laws have a clear potential to introduce perverse incentives, for example, by exempting certain activities with a negative impact on ecosystem service from tax payments or providing outright subsidies for destructive activities. However, they can also include certain provisions that can support PES incentives. In Colombia, e.g., Law 99 of 1993 requires the incentives of a certain amount of money coming from water use projects, the energy sector or irrigation districts into watershed conservation activates. Such mandatory investments thus provide a potential source of funding for PES projects. Agriculture laws, e.g., offer tend to create perverse incentives which clash with the objectives of watershed PES initiative, certain country where the agriculture legislations aims at redistributing and clarifying land right while at the same time creating incentives for deforestation. India is already using most of the economic and financial instruments that are needed to implement payments for ecosystem services. The additional measures that need to be taken to fully enable payments for ecosystem services in the country are relatively few, although each is important. The process of developing and implementing the biodiversity law provides a unique opportunity to address these issues comprehensively and begin to use payments for ecosystem services to achieve a double goal-reducing poverty while conserving the nation's natural infrastructure.

Conclusion and Suggestions

Finally, it has to be remembered that the introduction of PES related provisions can lead to conflicts with existing legislations. Therefore PES regulations should include a provision that determines which law prevails in cases of conflict or inconsistency between legal texts. Efficient and effective legal frameworks for PES demand compatibility with indirectly relevant laws in order to avoid further barriers for watershed PES initiatives. At the same time, such laws may need to be assured either to use their full potential to promote PES or remove perverse incentives that abstract PES. Regarding the level of governance, it should be noted that legal provisions at all level—from local to national and international—can play an important role and have an added value in the further promotion and implementation of PES. Policy maker should have visions like, constitutions recognizing of the right to a healthy environment and acknowledging the value of ecosystem service for human well-being. And also they should have vision on specific PES law like, introducing a national PES vision, recognizing PES as a legitimate policy instrument, defining the general concept of ecosystem service as well as recognizing ecosystem service, creating specialized institutions, promoting of ecosystem service and establishing ecosystem service inventories. There is a need to determine whether payments for ecosystem services are treated as taxes, fees, charges or market prices. There is also need to list ecosystem services in the schedules of relevant laws. And additionally we needs to be addressed in the regulatory framework law and policy have traditionally lagged behind economics and ecology as fields addressing the value and protection of ecosystem services. Environmental lawyers and policymakers need to work to close the gap in ecologist and economist dominated discourse on these vital services.