

Payment for Environmental Services Program in Costa Rica: a policy process analysis perspective¹

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Abstract

The concept of environmental services (ES) has been rising during the last decade. It has led to new generation of mechanisms to cope with environmental issue in various countries. In the case of Costa Rica, which is considered as pioneer country in using the ES concept, its operationalization was done through a specific policy instrument: the Payment for Environmental Services program (PESP).

Most of the existing literature put the emphasis on the innovation and learning process to describe this experience. Nevertheless it does not take into account the political dimension behind the emergence and implementation of Costa Rican PESP.

Based on literature review and interviews of stakeholders, we analyse the policy process that have led to the emergence and evolution of the Costa Rican PESP to derive lesson learnt for the improvement and extension of such policy instrument.

We combine (i) the sequential approach of policy cycle to identify and describe the different phase of the emergence of Costa Rica PESP from the problem setting phase to the decision phase institutionalizing the program through the Costa Rican forestry law of 1997, and (ii) cognitive approaches of policy process analysis to identify the internal and external factors that have led to the emergence and evolution of this program.

We show that, in the case of Costa Rican PESP, the policy steps were rapid from the agenda setting to the decision due to external constraints and internal compromises between leading actors in a context of dominance of one group of interest. We also show that the emergence was facilitated by an early problem setting on deforestation and the existence of relatively effective forestry incentive instruments as well as sectorial forestry organisations and institutions.

We also show that the initial architecture and governance rules of the program reflected the existing balance of power between various stakeholders of different sectors (forestry, agricultural, environmental) and that the current evolution of the governance of the programs illustrates tensions between different interests groups. We also show that the evolution of the governance reflects new tensions between different interests groups.

We conclude on the main actual issues of the Costa Rican PESP. We finally propose further methodological path to deepen the analysis of PESP, and raise some lessons learnt to foster development of PES mechanism in other context.

Keywords: Public Policies, Environment services, Interests groups, Costa Rica

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Introduction

During the last decade environmental issues such as climate change, biodiversity loss, fresh water availability has become more stringent. New concepts and new policies are required to address these issues. The concept of Environmental Services deriving from Ecosystem Services, popularized scientific area by Constanza en 1997 (Constanza et al. 1997) and more largely by de Millennium Ecosystem Assessment (MEA, 2005), has been used to renew policies to tackle raising environmental issues as global climate change, biodiversity loss, water conservation, soil erosion,... In particular, it led to development of a variety of market based mechanisms (Gomez-Baggethun et al. 2009), known as Payment for Environmental Services, Rewards for Environmental Services,... (Landell-Mills and Porras, 2002; Wunder, 2005). If the application of the Payment for Environmental Services (PES) scheme raised many debates among scholars about their efficiency, their effectiveness, and their impact on rural poverty, they have been developing rapidly all over the world as an alternative to overcome the limits of other conservation mechanisms to such as Command and Control or Integrated Development Conservation Program (Wunder et al, 2008).

Early lessons from current experiences have stressed the importance of institutional factors for success of PES mechanism. In many experiences, institutionalization of PES pilot mechanism is seen as possibility to consolidate PES mechanism.

Costa Rica is considered as a pioneer country in using the concept of ES and to develop a specific policy instrument: the Payment for Environmental Services Program (PESP). Whereas many countries as developed some local experimentations in specific territories and are tends to institutionalize the experience, Costa Rica had directly developed a national system that has been institutionalized through the 4th forestry law (# 7575) as early as 1996, thus prior to popularization of the ES concept and PES schemes (Pagiola et al., 2007)

As a pioneer case, Costa Rican experience was subject of many studies. Many documents describe the experience (Chomitz et al, 1998 ; Camacho et al. 2000; Castro et al, 2000, FONAFIFO, 2005) or assess the results of PESP in term of effectiveness and efficiency in term of environmental effects or poverty reduction (Miranda et al,

2003; Zbinden et al, 2005; Locatelli et al, 2007). Few articles analyse the process of emergence of the PESP. Some authors analysed the emergence of PESP as social and institutional innovation (Camacho et al, 2000; Segura, 2003) arguing that PESP represented a new form of considering the environment resulting from a learning process. Other highlights the continuity of the PESP in comparison of previous policy instruments to support Costa Rican forestry sector, and consider that the main changes were the justification of the forestry support (from wood industry to provision of ES) and the source of funding of this support policy (Pagiola, 2008).

Nevertheless the interpretation of the process of emergence and evolution of PESP, as a policy process, has not been carried out. Thus, in this communication, we address the following questions: Why PESP was early elected as a policy instrument? What are the factors that have permitted the rapid adoption and development of PESP? How to understand the evolution of PESP?

The objective of the communication is to analyse the policy process that have led to the emergence and evolution of the Costa Rican PESP to derive lessons learned for the improvement and extension of such policy instruments in other contexts.

Our main hypothesis is that the policy process underlying the rapid adoption is due to several internal and exogenous factors, and that the adoptions and evolution of this new instrument of policy reflects changes in the balance of power between different groups of interest and alliances between leading stakeholders.

In this communication, after a presentation of the conceptual framework and methodology, we describe the dynamic of the forestry policies and the conditions prior to the adoption of 4th forestry law that set up PESP principles. Then we analyse the key moment of the formulation and adoption of the 4th forestry law. In a third part, we analyse the evolution of PESP program. We finally conclude on the main actual issues of the Costa Rican PESP and propose further methodological path to deeper the analysis, and raise some lessons learnt to foster development of PES mechanism in other context.

1. Analytical frameworks and methodology

To analyse the emergence and the evolution of PESP, we used conceptual and analytical frameworks derived from policies sciences to analyse policy process. We combined different analytical framework developed by 2 complementary streams of policy process analysis: policy sequential approach, and cognitive approach.

1.1. Policy process, the sequential perspective

The sequential model of analysis of public policies has been developed in the 60s to analyse policy process. In this model, the policy process is considered as a succession of sequences. Since the first version of this model developed by Laswell (1956) that consider 7 steps, scholars have proposed various sequences breakdown proposal, like the 6 steps model proposed by Brewer (1974). For the purpose of the study, we consider the model developed by James Anderson (1975) cited by Hassenteufel (2008), that consider 5 sequences: (1) the *policy agenda* which consist in the sequence of identification of a problem and raise of attention of the State, (2) the *policy formulation* which consist in the process of elaboration of a solution to the identified problem, (3) the *policy adoption* that is marked by the public decision of adopting the solution choose and developing a program of action, (4) the *policy implementation* which consists in the application by the administration of the program of action, (5) the *policy evaluation*.

We used this approach sequential approach facilitates the description and analysis of the policy process (figure 1). Nevertheless, as model has received many critics, such as the difficulties to identify the sequence, the linearity of the model, the lack of causal theory, legalistic and top-down bias, oversimplification (Sabatier, 2007), we combined this approach with cognitive approach analysis to understand the causes of the policy changes.

1.2. Policy process: the cognitive approaches

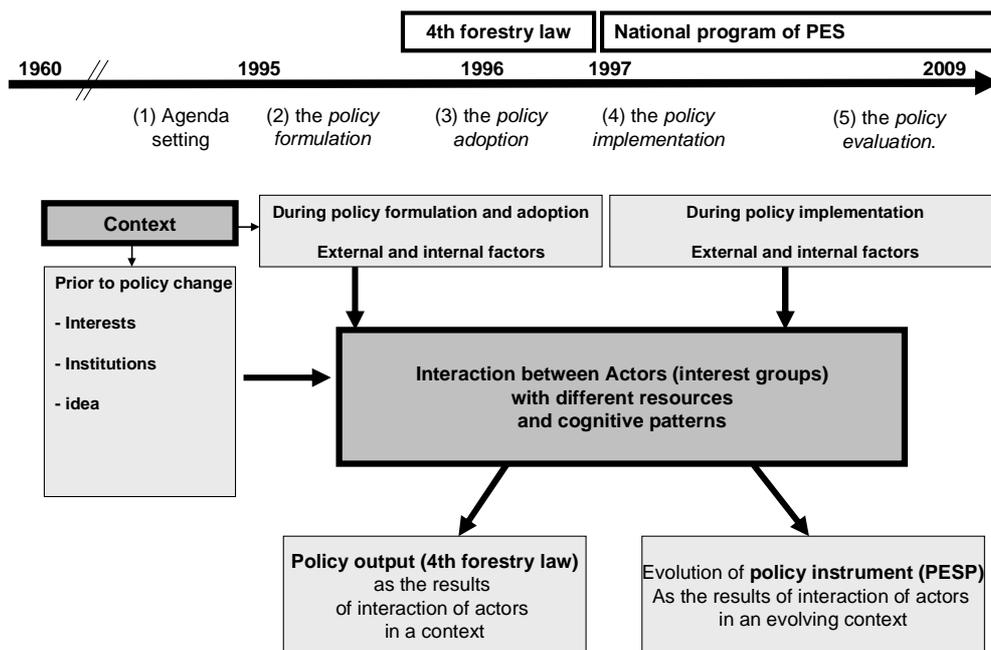
During the last 20 years, to overcome the limitation of sequential model, scholars developed various analytical model or frameworks to analyse policy process (Hassenteufel, 2008; Sabatier 2009). We mobilized 2 streams of cognitive approaches to understand the PESP adoption and implementation.

Firstly, we use the “3 I” (*Institutions, Interest and Idea*) model developed by Hall (1997) and Surel (1998). According to this model, the policy change results from the conjunction of 3 factors: Institutions, Interests and Ideas. We mobilize this model especially to understand the situation prior to PESP adoption (figure 1).

Secondly, we used the approaches derived from policy sociology that consider the actors of public policies and their interaction (Hassentuefel, 2008). These approaches consider the public policies as a collective action. Thus, policy changes are the results of interactions of actors in a context. The actors (in opposition with rational approaches) developed strategies, according to their policy action resources, and their cognitive characteristics. We especially mobilized this approach to analyse the policy adoption and the evolution of PESP (figure 1).

Thirdly, we consider PESP as an policy instrument or public action instrument as defined by Lascoumes and Le Gales (2004, 2006): “a technical and social setup (*“dispositif”*) that organize the social relationships between the public authorities and the beneficiary (*“destinataires”*) of the policy according to the representation and the signification that the instrument beared”. Thus “the instrument of public action are not axiological perfectly neutral” (Lascoumes and Le Gales, 2004 ; Lascoumes et Le Gales, 2006). Thus, we analyse of the evolution of PESP as an indicator of evolution of the representation and the balance of power of the stakeholders and the interests groups (figure 1).

Figure 1: Analytical Framework for policy change applied to PESP



Source: authors

1.4. Material and method

To capture main feature of the emergence and evolution of PESP, we first realized a review of abundant academic literature on PESP.

Then, we carried out qualitative interviews of stakeholders that have been part of the policy process. The identification of key representatives and stakeholders was done through snowballing method. We interviewed scholars, civil servants of the institutions involved in policy design and PESP implementation, and representatives of organisation of various sectors (Forestry, Agriculture, and Environment). A total of 26 interviews had been carried out between 2008 and 2009 (Figure 1). These stakeholders were invited to present their own trajectory, to describe their role played in the emergence and evolution of the PESP, as well as their perception about PESP from the emergence up to now. The interviews were recorded and each transcribed. We derived from this transcription of the individual interviews the key moment in the PESP adoption and evolution, as well as the perception and strategy of their interests groups.

Additionally a review of existing technical documents was carried out to cross check affirmation of the interviewed stakeholders.

Figure 2 : List of stakeholders interviews

Sector	Type of actors	Number
Forestry	Institutions	5
	Organizations	5
	Academics	1
Agriculture	Institutions	1
	Organizations	2
	Academics	3
Environment	Institutions	3
	Organizations	5
	Academics	1
Total		26

Source: authors

2. The context prior to PESP adoption

Based on existing literature, we describe the evolution of the context prior to policy formulation and adoption in 1996 of the 4th forestry policy that included the PESP principles. According to our analytical framework, we describe this context considering

4 elements: the deforestation issue and exiting the forestry policy framework and instruments, the institutions, the interests and the ideas.

2.1. The deforestation issue and forestry policy framework

Before 1969, deforestation was not a political theme. The current model of development of the country was then to develop agricultural production for agro-exportation and import substitution purposes. The forest was then considered as “unproductive lands” to be agriculturally colonized. The government was supporting the development of “traditional” products such as café or banana and the introduction of new production such as sugarcane, cacao, or beef production (Camacho et al, 2008)

In this context, the forest area declined rapidly. According to FONAFIFO (2005), the forest area reduced dramatically from 75% of the country area in 1940 to some 53 % in 1961. Between 1950 and 1970, the annual deforestation rate was very high, representing more than 50,000 hectares (Government of Costa Rica, 1994).

To face the deforestation, the government developed from 1969, a series of first forestry law and instruments (figure 1). The first forestry law (1969) aimed at developing the forestry plantation with a productive orientation. To reach this objective, a first instrument was adopted in 1979: the reduction of the incomes-tax. This fiscal incentive aimed at compensating the establishment and maintenance cost of the new forest plantation. This instrument was mainly mobilized by large enterprises seeking to reduce their tax burden but not specifically by forestry sector enterprise. Most of the rural population was not interested and not subject to this incentive, because they were not paying income-tax (Segura and Moreno, 2002). The effects of this policy was the development of large monoculture plantation, many failures occurred since many enterprises, that were not forestry enterprise, did not manage properly forestry plantation (unadapted species, poor maintenance,...).

The second forestry law, adopted in 1986, installs a change the orientation of the forest policy. If the overall objective still to face the reduction of forest area through reforestation incentives, the participation of rural farmers and small and medium forestry enterprise is expected. Thus, to enlarge access to small holders, a new policy instrument was created in 1986: the certificate of forestry credit (*Certificado de Abono Forestal* - CAF). These certificates were nominative and transferable titles that may be used to pay any kinds of tax. However, despite this new incentive system, the small

landholders, which lacked of cash flow, had difficulties to develop new plantations because they had to advance the investment. To face this limitation, another new incentive was created in 1988: the « certificate of forestry credit paid in advance » (*Certificado de Abono Forestal por Adelantado* - CAFA). To further develop participation of small holders, a specific incentive was also created in 1988 to encourage tree plantation in agro-forestry system: the forestry development fund (*Fondo para el Desarrollo Forestal* - FDF). Supported by the Dutch cooperation, this incentive enabled also small farmers without land title to access to some incentive. However, the level of incentive provided through FDF was lower than those of CAF and CAFA. It ends in 1992-1993 when Dutch funds were used up.

The third forestry law, adopted in 1990, maintained the same global orientation and the instruments (CAF, CAFA, FDF). In 1992, a new instrument is added in order to incentive forestry enterprises to adopt new practices of forest exploitation: the certificate of forestry credit for forestry management (*Certificado de Abono Forestal para el Manejo* - CAFMA). The objective is to reduce the integral cut (*talla rasa*), and develop sustainable management practices. In 1995, a new instrument is also added to avoid deforestation: the certificate for forest protection (*Certificado de Protección del Bosque* – CPB). This last instrument indicates a change of paradigm, since it introduced a direct incentive for protection of forest, not oriented towards the production of wood.

The evolution of policy instruments between 1969 and 1995 shows that, prior to the introduction of PESP, Costa Rica had progressively developed a support policy to forestry sector characterised by a 3 pronged strategy: reforestation, sustainable forest management and conservation of the existing forest. However, despite the development of different instrument to support the various types of forestry landowners (large forestry enterprises to small farmer/forestry landowners), the deforestation still an important issue since forest area still reducing from 53% of country area in 1961, it represented 31% in 1977, 26 % in 1984 and reach the record level of 21% in 1987 (Fonafifo 2005).

Figure 3: Evolution of the policies and policy instrument in forestry (1969 – 1995)

year	policy document	Policy orientation	Policy instruments	Mechanism	Beneficiary
1969	First forestry law (# 4465)	Promote reforestation through forest plantation			
1979	Reforestation law	Promote reforestation through forest plantation	1979 : income tax reduction	Fiscal incentive to compensate plantation establishment and maintenance costs	Large enterprises paying income tax
1986	Second forestry law (#7032)	Promote reforestation through forest plantation	1986: forestry credit certificate (CAF) ¹	Fiscal incentive to compensate plantation establishment and maintenance costs	small and medium enterprises ; farmers
		Idem	1988 : forestry credit certificate paid in advance (CAFA) ²	Idem, but paid in advance	small and medium forestry farmers in organization
		Promote tree plantation in agro-forestry systems	1988: forestry development fund (FDF) ³	Direct Support	Small and medium farmers (even without land title)
1990	Third forestry law (# 7174)	Promote reforestation through forest plantation	CAF, CAFA and FDF	Fiscal incentives and direct support	Small medium, and large forestry enterprises
		Reduce deforestation due to wood extraction practices	1992 forestry credit certificate for forest management (CAFMA) ³	Fiscal incentive (payment)	Forest landowners
		Conserve existing forest	1995 : certificate for forest protection ⁴	Fiscal incentive (payment)	Forest landowners
1996	Fourth forestry law (# 7575)	Promote reforestation, sustainable management and conservation	Payment for environmental services (PES)	payment for conservation, plantation, management of forest	Forest landowners

NB : 1: CAF=Certificado de Abono Forestal"; 2: CAFA="Certificado de Abono Forestal por Adelantado"; 3: FDF="Fondo para el Desarrollo Forestal"; 4: CAFMA = "Certificado de Abono Forestal por Manejo del Bosque"; 5: CPB="Certificado de Protección del Bosque".
Sources: Original based on stakeholders' interviews (2008-2009) and Camacho et al 2009

2.2. The development of forestry institutions

The period between 1969 and 1995 is also marked by the development, the strengthening and the autonomization of the public institutions dealing with forestry and environmental issues.

In the 60's, following national main objective of increasing of agricultural production, the Ministry of Agriculture and Animal Husbandry was created. This ministry was in charge of all the productive activities in rural territories. The power and resources of this sector was increasing with the development of public institutions in charge of the promotion agricultural development, colonization of new lands,.... The public institution in charge of forestry was limited to small division hosted in the ministry of agriculture.

In the 70s and 80s, with the first and second forestry laws, the public actions toward forestry activities increased and led to the strengthening of the direction of forestry. Nevertheless, the forestry department was still inside the Ministry of Agriculture, which limited its autonomy and power in the policy arena.

The year 1990 marked an important change in public institutions regarding environment and forestry activities with the creation of the Ministry of Natural Resources Energy and Mine (*Ministry de Recursos Naturales, Energia y Minería* – MIRENEM). This ministry resulted from the merge of the Ministry of Industry, Energy and Mine with the different existing institutions such as the general department of forestry, the wildlife department and the National Parks Services. This institutional reform had several consequences. It gave an institutional recognition of the environmental sector and forestry sector, it granted more autonomy and institutional strength in the policy arena.

2.3. The construction of forestry interests and their representation

The 70s and the 80s, with the development of forestry support policies and public institutions, the forestry interests and its representation were consolidated.

In the 80s, the General Department of Forestry promoted the creation of local forestry organizations as interlocutors and intermediaries to facilitate the implementation of the forestry policy. Between 1980 and 1990, many forestry local organizations flourished in

all the regions of the country such as CODEFORSA in the northern region, ASIREA in the Caribbean zone, COOPEMADEREROS in the southern zone, the CAC Hojancha in the north east region,.... (figure 4). These organizations, created as association, cooperative or ONG, were created mainly by small and medium forestry landowners and sometimes with local wood processing enterprises. They aimed at providing economic, administrative and technical services to forestry farmers (technical assistance, wood cutting, transport, seedling provision, first transformation, marketing,...). The CAFMA boosted their development as they were, by decree, the necessary intermediaries to transfer the supports to small forestry farmers, and as they could receive a percentage of the public support to cover their administrative intermediation costs. With the support from institutions and also from international cooperation, some of those organizations promoted also sustainable management practices and community management practices.

In 1989, the representation of the interest of small forestry farmers strengthened at national level, with the creation of “the peasant forestry national council” (*Junta Nacional Forestal Campesina* - JUNAFORCA). This organization, resulting from an initiative of some local forestry organizations, defended a vision of sustainable community management of the forest and agro-forestry. Thus, this organization was sharing common visions and interests with environmentalists’ organizations and with peasants farmers representatives, especially with the “Nacional peasant platform” (*Mesa Nacional Campesina* –MNC). More than good relationships, this organization benefited from logistic support from MNC that enabled them to develop a national representative office and consolidate their representation in diverse region in the early 90s.

On the other hand, the representation of forestry entrepreneurs’ interests developed around two national organizations: the national chamber of reforestation enterprises (*Cámara Nacional de Reforestadores* - CANAFOR) created to defend the interest of the large forestry enterprises that was developed reforestation programs in the 70s and 80s, and the national chamber of the wood industry (*Cámara Nacional de la Industria Maderera* - CANAIMA) which represented the large sawmillers and wood processing factories. With their difference of social base and the classical division of vision in term of large / small structures, business oriented / family oriented activities, and producers /

processors antagonist economic interests, these organizations were very distant from JUNAFORCA.

In 1994, with the support of USAID and GTZ cooperation, the Costa Rican Chamber of Forestry (*Camara Costaricense Forestal - CCF*) was created with the objective of representing the whole private forestry sector of Costa Rica. This organization initiated with the participations of some representatives of forestry and wood large entrepreneurs convinced of the necessity to unite the sector and develop more sustainable practices. Progressively, promoting a consensus among the stakeholders of the forestry sector, CCF progressively enlarged its memberships including the participation of some local forestry organization that were created in the 70's and 80's. Even if the participation of JUNFORCA could not be achieved, a dialogue process between CCF and JUNAFORCA was developing in the middle of the 90s.

Figure 4: Organizations and representation of interests groups of forestry sectors in the early 90's.

	Large forestry landowner and wood industrial sector	Small and medium forestry landowner
Local organization		1978: Centro Agrícola Cantonal de Hojanca (CAC Hojanca) Nicoya region 80s: Cooperativa de reforestación, industrialización y comercialización de la madera y servicios múltiples del Pacífico (COPEMADEREROS) Southern region 1984: Comisión para el Desarrollo Forestal de San Carlos (CODEFORSA) Northern region 1987: Asociación de Industriales y Reforestadores de la Región Atlántica (ASIREA) Caribbean region 1989: Asociación Guanacasteca de Desarrollo Forestal (AGUADEFOR) Guanacaste region 1989: Fundación para el Desarrollo de la Cordillera Volcánica Central (FUNDECOR) Central valley region
Nacional organization	Cámara Nacional de la Industria Maderera (CANAIMA) 1985 Cámara Nacional de Reforestadores (CANAFOR)	
	1989: Junta Nacional Forestal Campesina (JUNAFORCA)	
	1994: Costarican Forestry Chamber (CCF)	

Sources: Stakeholders' interviews (2008-2009)

Thus, prior to PESP adoption, we show that forestry public institutions and the representation of forestry stakeholders were consolidated at national level with an important grassroots system of local forestry organizations.

2.4. The emergence of new ideas on forest and forestry

Prior to the adoption of the PESP, new ideas and conception about forest and forestry support policy and instruments were emerging. The emergence of these ideas can be captured through analyses of the perception and discourses of the forestry interests' groups, the scientific documents, some experiences conducted in project and the last changes of policy instruments before the adoption of the 4th forestry law.

In the beginning of the 90s, representatives the private forestry sector (large entrepreneurs and small forestry producers) were both conscious of the necessity to develop more sustainable practices of forestry management. Despite the development of the various policy instruments, the forest area was still decreasing at a rapid pace and was reaching in 1987 a record level of 21% of country area. Leaders representing large entrepreneurs and small forestry were both convinced that sustainable practices asked for public supports. But, public funds were more and more difficult to obtain in a context of recurrent national budget deficits, stabilization policies and structural adjustment plans. Thus, on one side, some organisations of small forestry landowners with more conservationist vision, such as Aguadefor and CAC Hojanca, were questioning the logic of the public support to forestry sector: "*why giving incentives to cut and plant tree, instead of protecting it*". On the other side, with the current level of forest area and current deforestation pace, other organizations with more productive vision were thinking that the national wood industry will not be sustainable.

In the academic sector, new ideas and concepts were emerging. Since the 60s, the majority of scientific works on forest was carried out by biologist or forestry specialists and was oriented toward the inventory of natural resources. These studies showed the richness and specialty of Costa Rica biodiversity, especially in natural forest area. The 90s were marked by the emergence of new disciplinary approaches: the environmental and ecological economics. Many studies were developed in Costa Rica to value the economical benefit of national parks and natural resources. These studies aimed at demonstrating the necessity for the society to protect natural resources. In 1992-1993, a first economic valuation of the Monteverde reserve was carried out by Tropical Science

Centre (*Centro Científico Tropical* - CCT) with the support of World Wildlife Fund program. In 1994, a 3 years research program, the Collaborative Research in Environmental Economics and Development program (CREED), was developed by the CCT with English cooperation funds, which enables to realise around 15 economic valuations of environment in the country. Many scholars in Costa Rica that had relationships with USA scholars, developed their skills in economic valuation of environment. In 1994, the National University of Costa Rica organized in Costa Rica the 4th international conference of Ecological Economics with a large participation of more than 500 scientists. This event enabled to strengthen the Ecological Economics discipline in Costa Rica and to raise the consciousness of policy makers and society on value of natural resources and ecosystems, especially forest areas. If most of the studies was using the terms of “economic valuation of environment”, the emerging notion of “Environmental Services” begun then to be used by scholars in Costa Rica, as for example, in the CCT valuation of Monteverde reserve, published in 1995.

At local level, in the early 1990s, some experiments of new mechanisms to incentive forest protection and sustainable management practices was developed in reforestation or environmental projects such as the Boscosa project of the foundation Neotropica in the Southern region of Costa Rica (Osa Peninsula) or the Reforesta project funded by Usaid and implemented by Fundecor in the central valley. These projects developed by their own, with an experimental empirical approach, the very first application of the principle of PSE.

Finally, in 1995, the creation of “certificate for forest protection” (*Certificado de Protección de Bosque* – CPB) illustrates the emergence of a new representation of the forest as a provider of service per se and not only as a provider of commodity, since CPB consist in a payment for a forest area in which no wood extraction is permitted.

We show that prior to PESP formulation and adoption in the 4th forestry law of 1996, different key elements for policy changes were present: (1) a problem was clearly defined and monitored : the reduction of forest areas due to a deforestation dynamic stronger than reforestation dynamic, (2) specific public institutions dealing with the forestry issue are in place (the General Department of Forestry inside the MIRENEM) as well as specific of incentives programs (CAFA, CAFMA, CPB), (3) organizations that represent of the forestry stakeholders interests are consolidated from grassroots to national level, (4) new ideas are emerging, especially in term of representation of the

forest, considered not only as a producer of material commodity –wood- but also as a provider of various services for the society.

3. The adoption of PESP

In this section, we analyse the short time period (1995-1996) which correspond to the reformulation of the solution (*policy formulation*), and adoption of the 4th forestry law (*policy decision*) in February 2006 that recognize SE provided by forest and institutionalized the principle of PSEP as well as its main governance features.

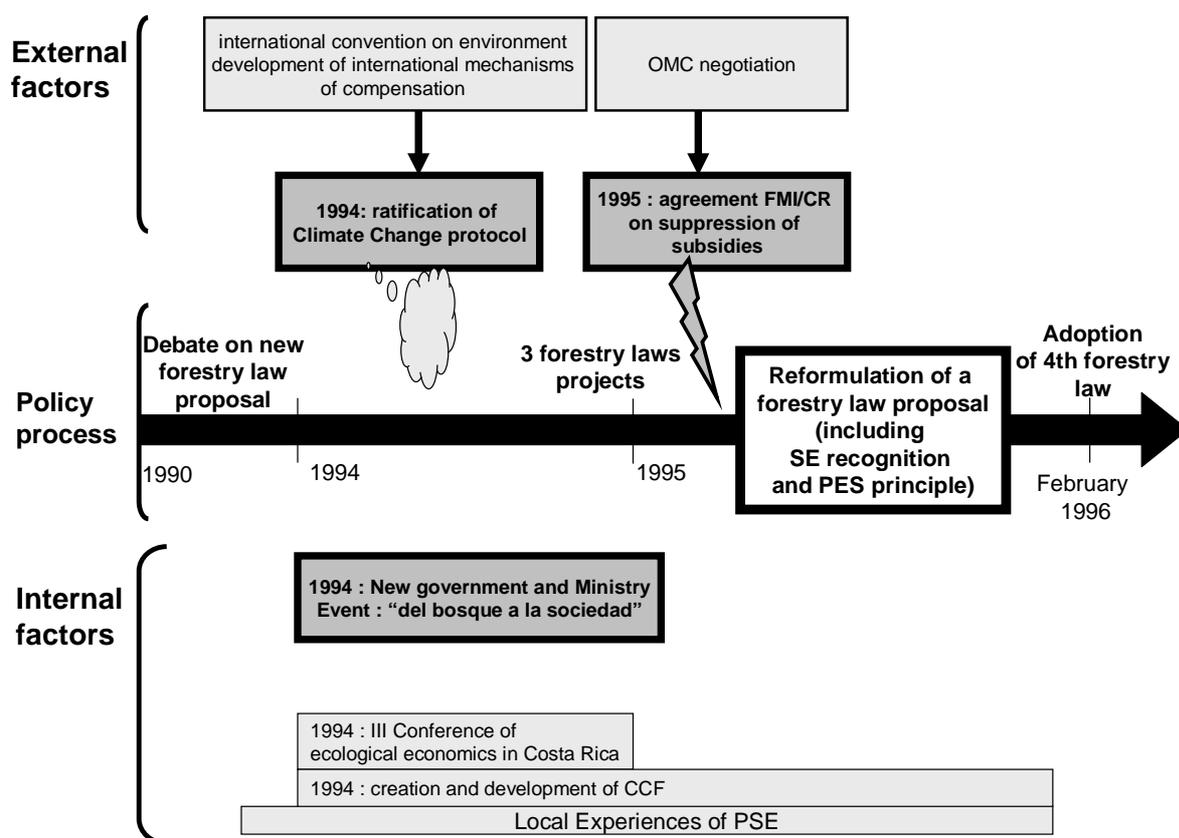
We first identify the key internal and external factors that led to the rapid reformulation of the forestry law introducing SE concept and PESP principles. Then, we analyse the actors decision process of the forestry law. Finally, we analyse actors' resources and relationships to understand of the rapid policy cycle.

3.1. The context of the policy formulation

In the early 90, the problem of deforestation was still of important magnitude in spite of existing incentive instruments for reforestation, management and protection. The forestry problem was then on the policy agenda. A new forestry law proposal which had was formulated in the early 1990 without reference to SE and PSE mechanism, was in discussion (Legrand et al, 2009).

In the current contexts of the early 90s, three specific key factors led to the (re)formulation of the forestry law (figure 5). The first factor was the raising importance on the international agenda of environmental issues. The ratification of Climate Change and biodiversity convention in 1992 appears for the leaders of forestry sector (especially in the newly created CCF and some local organizations as Fundecor) as a new opportunity to finance necessary support to forestry sector. This opportunity was strengthening with the ratification in 1994 of the climate change protocol by the government of Costa Rica. This governmental initiative supported by forestry sector is rapidly exploited. The office of implementation joint implementation ("*Oficina Costaricense de Implementacion Conjunta*" – OCIC) is created in 1995 to formulate carbon compensation projects. The opportunity to finance forest policy for the services they provide was then promissory.

Figure 5: Policy sequence of the 4th forestry law and key factors



source: authors based on Legrand et al (2010)

The second factor was an endogenous and political. In 1994, a new president; José Maria Figueres Olsen, was elected. This president wanted to develop the environmental issue as an important theme. As soon as elected, he nominated a new Ministry of Environment, Rene Castro. The new Ministry was near from CCT scholars team that was developing environmental economics studies, and, as graduate from Harvard school, he was in contact with scholars in US scholars, specialists of environmental economics. In charge of the forestry agenda, he was looking for a new way to conceptualize the benefit of the forest that could be acceptable for the society in the current context with the collaboration of is Harvard professor, the director of FUNDECOR, a representative of national system of conservation area. Then, he mobilized the emerging notion of Environmental Services to justify the necessity to support forestry. In 1994, he organized a large conference entitled "from forest to society" with the politician, scholars and actors of forestry sectors, where he publicly introduced and socialized the notion of ES and the necessity to pay for these services (UNED, 1994).

The third factor was strong constraints that gave a character of emergency during the formulation and the decision sequences, and provokes an acceleration of the policy process. This third factor is the sudden prohibition of the subsidies to the productive sectors. In 1995, in the framework of OMC negotiation, the Ministry of Finance and the president of Costa Rica signed without consultation of other ministries an agreement with International Monetary Fund that ban the subsidies to productive sector. This agreement calls in question the existing instruments of forestry policy. According to this agreement, the forestry sector would be soon without any authorized supports. The Ministry of Environment mobilized the SE concept and PSE principles as a new register of legitimization of the support to the forestry sector, switching from “a compensation rhetoric” to “a market rhetoric”, from “subsidies like instruments” to a “marketing based instrument”. He promoted then the introduction of ES and PES in the forestry law under discussion in the legislative assembly.

3.2. The interest groups in the formulation and decision of the Forestry Law

Since early 1990s, the necessity of a new forestry law was clear for all stakeholders and a law proposal was discussed in the national assembly. This law proposal, which had been designed before the ratification of climate change convention, was proposing the continuity of the current instruments and was considered as in adapted by the various interest groups in the new context of the 1995.

Three forestry law proposals were proposed in 1995: (1) one proposed by the Ministry of Environment supported by the forestry sector (especially CCF), (2) an other proposed by the Committee of Agricultural Affairs that was the synthesis of former proposal, (3) an other introduced by Otton Solis (a deputy of PLN) supported by environmentalist groups.

This diversity of proposal illustrates the divergence between the different interest groups that represented the actors concerned by the forestry problem (figure 6). We identified 5 interests' groups that belong to 3 main sectors: (1) the interest groups of the agricultural sector composed by the large agricultural farmers represented by National Chamber of Agriculture (*Camara Nacional of Agriculture* - CNA) and some interprofesional bodies as the agro-industrial ligue of sugar cane (*Ligua Agricola Industria de Cana de Azucar* - LAICA) and the small and medium farmers and peasants represented by their 2 main representative organizations in the mid-1990s, the National

Platform of Peasant (*Mesa Nacional Campesina* - MNC) and the National Syndicate of small and medium agricultural producers (*Union Nacional de Pequeños y Medianos Productores Agropecuarios* - UPA Nacional); (2) the interest groups of the forestry sector with the large forestry entrepreneurs and wood industry represented mainly by the CCF and the small forestry farmers landowner, represented by the JUNAFORCA and, (3) the environmentalist sector mainly represented by the Costa Rican federation of conservationist (*Federación Conservacionista de Costa Rica* – FECON).

Figure 6: Main objectives and positions of main interest's groups related to forestry issue in the 1995

sectors		agricultural		Forestry	Environmental	
Interests groups		large agricultural (business) farmers	small holder farmers (peasant)	Small forestry farmer	large forestry entrepreneurs, wood industrial	environmentalists and ecologists
leading professional organisations		CNA, Laica, Icafé,	Mesa Nacional Campesina, Upa Nacional	Junaforca	CCF	FECON
Main objectives (related with forestry issues)		maintain land use extension for agricultural purpose	develop agriculture and forestry (agro forestry) for local income generation and diversification	Sustain forestry activity (community management for income generation)	sustain forestry activity (wood production for industry)	Maintain biodiversity and natural ecosystem
Position according to point of debate of the law	recognition of SE provision by forest	-	Favourable	Favourable	Favourable	(Favourable)
	recognition of PSE mechanism	-	Favourable	Favourable	Favourable	(Favourable)
	Institutional governance	-	-	-	Favourable	-
	financial sources	-	-	-	Favourable	-
	PSA modalities	-	favourable to PSE on Agro-forestry	favourable to management and reforestation and AgroForestry	favourable to management and reforestation	favourable to conservation, not management
	Ban of land use change of forest area	Not favorable	-	use of forest	Favourable	ban of forest exploitation

NB: - = no data

Source: Based on stakeholders' interviews 2008-2009

These different interests groups had divergent vision concerning the orientation of the forestry law and on specific points of the law proposals and the foreseen PESP. A dialogue and negotiation process took place rapidly among this different interest groups. At first step, JUNAFORCA and MNC were not agreed with the law proposal supported by the CCF. A dialogue process between JUNAFORCA and CCF was provoked by the Ministry of Environment. If the peasant sector through their representatives (MNC and JUNAFORCA) accepted the principle of SE and PSA, they were asking for the inclusion of support to Agro-Forestry system (mainly developed by small holders) that existed during a short period of the FDF (1988-1992). This modality was not included in the final design of the PESP but the necessity to find an agreement to give a follow up for plantation, management and conservation of forest was necessary to foster adoption of JUNAFORCA in the process.

The second opposition came from Committee of Agricultural Affairs (CAA). The opposition relied on a difference of vision between a more “productive vision” or more “conservationist vision”. In the law proposal of the Ministry of Environment supported by the CCF, the notion of conservation of the forest was present but the possibility of extraction of wood was also clear. The position of the CAA was to suppress the support to wood production to orient more funds toward the conservation, with the argument that reforestation oriented toward a future wood extraction is a productive activity with economic profitability that no longer needs to be subsidized. On the other side, the CCF was supporting the idea that support should be given to management but not pure conservation, because the country and the industry was also needed wood for construction, furniture, etc.... A first signal of compromise was founded with the creation the Certificate of Forest Protection (*Certificado de Proteccion de Bosque* – CPB) in 1995, which clearly recognize conservation purpose. This CPB was take up to set the PESP modality of conservation.

Another opposition came from the environmentalist representatives and a deputy of a faction of PLN (Otton Solis). This groups had a structured law proposal oriented toward a more conservationist principle, that can be synthesized as the sentence, “Cut only what has been planted” (*Cortar únicamente lo que ha sido plantado* – CULPA). This group was strongly against support to management practices and incentives (CAFMA), which they considered as affecting the ecosystem and biodiversity. This group was also against the practices of reforestation promoted by the institutions and forestry

entrepreneurs based plantation of exogenous species with rapid growth rate, arguing that this practices was not restoring the ecosystems biodiversity.

Finally, another debate was raised about the ban of land use change for existing forestry area. If this proposition was in line with the orientation of a more conservationist vision but it was against the interest of the agricultural sector and especially large owner (herd raisers or sugar cane producers) for which it was a reduction of potential agricultural growth. For the forestry sector representatives, even if it was a restriction of their rights on private properties, they were not opposed to this ban, because they considered it as a way to promote sustainable practices. Finally, the ban of land use change for existing forestry area was accepted.

Finally, in spite of the opposition of the vision on the orientation of the forestry law, a compromise between the different interest groups was achieved concerning some key elements such as the recognition of the ES provided by forest area and the principle of PES principles. This facilitates the rapid adoption of the law that was proposed by the Ministry of Environment.

3.3. The resources of interests groups and rapid adoption of PESP

If the rapidity of the adoption of the law supported by the Ministry of Environment can be attributed to necessity to find a rapid solution to avoid the forestry sector to be without support, the analyse of the resources of interest groups enables to better understand the celerity of the policy decision and the main governance features of PESP program.

The analysis of the resources of the interest groups demonstrates that the forestry sector had mayor resources and alliances to defend its interests and for negotiation process in 1995-1996 (figure 7). Firstly, the forestry sector had strong institutional and political resources thanks to the alliance with the Minister of Environment. This Minister was part of the main stream of the National Liberation Party ("*partido de liberacion nacional*" – PLN) that had just won the elections and had the majority party in the national assembly. Secondly, the forestry sector had strong organizacional resources. The CCF, who played a leading role in dialogue process, benefited then from a strong leadership, and technical capacities. Its representativeness was strong and large since

they had developed their memberships with local forestry organizations, and thus was not only representing large enterprises but also small landowners in all the country. More over, CCF had developed dialogue with JUNAFORCA and could thus argue of a large representativeness. The CCF benefited from financial support from affiliates and from international cooperation (USAID and GTZ). Thirdly, this group of interest benefited from academic supports since their proposal was in line with many scholars works in the country of different academy. Lastly, although they didn't benefited of a large audience in the public opinion, as "wood cutter", they was gaining audience by promoting the function of Environmental Services provision toward the society, that was especially sensible to water provision.

Figure 7: Resources and alliances of the interest groups in 1995-1996

Sectors Interests groups	Agricultural		Forestry		Environmental
	large agricultural (business) farmers	small holder farmers (peasant)	Small forestry farmer	large forestry entrepreneurs, wood industrial	environmentalists and ecologists
Institutional resources	Strong alliance with MAG	Low conflict with MAG	Conflicting alliance with MIRENEM	Strong alliance with Ministry of Environment (MIRENEM)	Conflicting alliance with SINAC
Organizational resources	Strong but low mobilization	Fair (atomization en various movement)	good representation JUNAFORCA (including grassroots organizations)	strong representation of CCF including with grassroots organization	Good a leading organization (FECON)
Political resources	Strong	Low	Low	Strong Majority fraction of PLN	Limited (1 fraction of PLN)
Technical resources	Good (but agronomists)	Limited	Limited	Strong with Academic support (Ecological Economics) and Agronomist college (including forestry engineer)	Academic support from biologist (inventory) - UCR / biologic college
Public opinion	Not favourable (large scale agriculture affects natural resources)	Favourable (Small farmers doesn't affects natural resources)	Favourable (traditional Forest as provider of services)	Mitigate ("wood cutter"/ forest provider of services)	Very favourable (forest as a natural resource, biodiversity)
Financial resources	Important (but not oriented toward theme)	Limited (Support from NGO)	Limited (Support from international NGO)	Important (support from major funding agency - USAID, GTZ)	Fair (Support from international NGO)

Sources: authors based on stakeholders' interviews (2008-2009)

The environmentalist groups were of growing importance on the forestry theme since the second half of 80s. Many ecologists or environmentalist local associations, NGOs or

groups developed. They were involved in denunciation local environmental problem. In 1989, a network of these organisations was created, the conservationist federation of Costa Rica (*Federación Conservacionista de Costa Rica - FECON*). This network was fairly well structured and had alliances with some MIRENEM civil servants but their conflictive position limited the magnitude of the institutional alliances. Politically, they had developed a strong alliance with a fraction of PLN, but this fraction was in very minority position in the national assembly in 1995. They had good academic support but mainly from biologists and ecologists, that were losing audience in the scientific local debate in front of the development of ecological and environmental economics. If they benefited from support from international NGOs, their financial resources were limited. Finally, their main resource was the favourable public opinion, since the natural resources concern of Costa Rican citizens was developing due to mass media campaigns.

The agricultural sector was of the less power in the negotiation for 2 main reasons. Firstly, their representation as sector was conflictive due to strong opposition on agricultural agenda between representative of large enterprise and small farmers. Moreover, the small farmers groups were not united, which reduced their representation power. Secondly, the agricultural agenda was very loaded in the context of liberalization and the reduction of specific public support to agriculture. Thus, the mobilization of the agricultural sector representatives in the forestry agenda negotiation was limited. Only some representatives were mobilized by the forestry such as the MNC. Nevertheless, with limited resources and alliances, they were able to support JUNAFORCA positions, especially concerning agro forestry, but not to achieve a strong policy incidence.

We show that during the negotiation process of the more powerful groups was forestry sector due to alliances that gives them major organizational, institutional, political, technical and financial resources.

We showed in this section that, in the case of Costa Rican PESP, the policy steps were rapid from the agenda setting to the decision due to external constraints and internal compromises between leading actors in a context of dominance of one group of interest that had major negotiation and policy resources, the forestry sector. We also showed that the emergence of PESP was facilitated by an early problem setting on deforestation and the existence of forestry incentive instruments as well as consolidated forestry institutions and organisations.

4. The evolution of PESP and changing balance of power

In this section, we analyse the implementation of the PESP from its creation to the actual period. We especially analyse the evolution of the governance of this instrument with a focused on two dimensions: (1) the institutions and rules setting process (2) the modalities that informs on the purposes and orientations of the instrument.

4.1 PESP governance, the power of forestry sector

The 4th law of forestry adopted in 1996 set the ground to PESP with a minimum of detailed². However, it gives some critical orientations for the governance of the PESP that reflects the balance of power favourable to the forestry sectors in the mid 90s.

According to the law, the responsibility of the implementation of the PESP was done to an existing structure of forestry administration, the FONAFIFO. With the new law, this organisation gained more autonomy in financial and human resources management and the rule of composition of its direction board gives a majority representation to forestry representatives as among the 5 members of the board : 2 are representatives of private forestry sectors (one representative of small or medium forestry producers, an other from industry), and 3 are representatives of public administration (one representative of the ministry of the environment, one representative of agriculture and one representative of national bank system). This composition recognize a representation to small forestry farmers but, as the nomination of the representatives pass trough National Forestry Office (ONF)³, this representative is generally chosen in local organizations that are more in line with CCF than JUNAFORCA.

The rules of PESP is defined 2 documents: (1) an annual decree that define the modalities, the budget dedicated for each modalities, and the priorities zone and target, and (2) a manual of procedures that defined conditionality and administrative

² The PSE key principles are set by only 3 articles of the 4th forestry law: (1) the definition of environmental services (article 3/k), that define 4 environmental services; (2) the article 4 that gives to the National Fund for Forest-Financing (*Fondo Nacional de Financiamiento Forestal*, FONAFIFO) the responsibility for the management of administration of financial resources for PSE, and (3) the article 69 that define the source of funding: a third of selective tax on combustible.

³ The creation of the National Forestry Office ("*Oficina Nacional Forestal*" –ONF) is a product of the 4th forestry law – article 7. By law, the ONF is a non governmental public entity in charge of the development of the forestry sector. It is a dialogue and coordination forum for the forestry private sector. It is composed by representatives of small forestry producers, forestry and wood industries, wood traders, and environmentalist groups.

procedures of payment and control. This decree and the manual of procedure are prepared by FONAFIFO with a consultation of forestry representatives (ONF, college of agronomist – in which are represented the forestry engineer) and the SINAC. The final decree is proposed by the Ministry of Environment. Thus, if the decision system allows yearly evolution of the PESP according to new objective, the forestry sector plays an important role in the decision process in rule definitions of PESP.

4.1. Evolution of PESP modality, the change in balance of power

The analysis of PES modalities between 1997 and 2009 shows evolutions in the orientations of the PESP (figure 9). If the modalities of PESP in second half of the 90s reflected the domination of forestry interests groups, with the follow up of reforestation and management modalities, and the creation of new modality for plantation in 1998, three main changes can be identified in the early 2000s (1) the suppression of management modality, (2) the introduction of Agro-forestry system modality. These evolutions illustrate changes in the balance of power between interests groups.

The suppression of management modalities indicates a change in the balance of power between groups related to forestry theme. Firstly it marks the reduction of the power of forestry interest groups in the early 2000s. During the second half of 1990s, the CCF still maintain and strengthen its power, enlarging its memberships to reach 152 affiliates in 1999 and developing services to their members. This strength enables to develop a new modality, as the PES for plantation in 1998 and 1999. But, in 1999, the change of leading representatives of the CCF modified the dialogue climate between the different tendencies represented in the CCF (large forestry enterprise, wood sector, small and medium forestry producers). In the early 2000s, CCF experienced a rapid disaffiliation and reduction of its means. Although the ONF was developing activities, it has not developed the strength that the CCF had in the second half of the 90s. Thus, the strength of the forestry sector was globally declining in the early 2000s. Secondly, the suppression of management indicates the raise of environmentalist groups. In the late 90s, environmentalist groups realized with various experts an audit of the management practices in the OSA peninsula. They evidenced numerous mismanagements and organized a campaign in the mass media that affected the public opinion. This new balance of power between forestry interest and environmentalist groups led to a

reduction of the amount dedicated to management modality, then an administrative ban was decided in 2000 and, finally, with the change of government in 2002 that followed the election of Abel Pacheco, this unpopular and controversial management modality was definitively suppressed.

Figure 8: Evolution of Forestry instruments from 1990 to 2009



Source: adapted from FONAFIFO, various years

The development of PES Agro forestry modality indicates another change in the balance of power. In spite of the proposal from small farmer agricultural sector and JUNAFORCA in the 1995-1996, this modality was not included in the first set of PESP modalities in 1997. In the late 1990s, with the support of international cooperation, a committee including scholars from an international research centre on agro-forestry located in Costa Rica, the CATIE, developed arguments that showed the ES provided by Agroforestry system. With the support of JUNAFORCA and SINAC a proposal was raised to the FONAFIFO board to activate a PES modality for AFS. A payment for new planted tree in AFS was created in 2004. This illustrates the strengthening of the

interests groups of small farmers and small forestry farmers. The creation of this new modality was facilitated by 3 factors. With the change of government in 2002, a new Ministry of Environment, Carlos Manuel Rodriguez, was nominated. This ministry was nearer from environmentalist groups and administration. He wanted to enlarge the use of ES concept and orient payments according to ecosystems provision of ES. This position contrasted with the original use of ES concept in 1995, when ES concept was used as a justification to support forestry industry or develop new financing sources. Thus, he promoted the studies on ES measurement and was keen to support initiative that enables to orient payment to ecosystems that provide ES provision. The second facilitating factor was the involvement of the World Bank in the PESP. In 2001, a five project, named “*Ecomercado*”, was launched. This project funded by a loan facilitated the functioning of PES schemes since Fonafifo encountered difficulties to effectively receive from Ministry of Economy the percentage of oil tax decided by law. With the World Bank involvement, the attention on the role of PES on poverty alleviation was raising. As the Agro Forestry systems were mainly developed by small farmers, the creation of PES for agro forestry system was in line with this orientation.

We show that the 2 major changes of modality in the early 200s illustrate a change of balance of power with the raise of environmentalist and agricultural producer groups and an orientation toward more conservationists’ purposes and more participation of small farmers.

4.3. Emergence of new interest groups, toward new modalities

The last 5 years are marked by the emergence of new interests groups and reconfiguration of existing ones that is currently trying to reorient the PSEP and especially to enlarge the scope of PESP outside strictly forestry ecosystems. We identified 2 main processes of extension (1) extension to Agro Forestry System (AFS) as a whole and to silvo-pastoral system (2) extension to specific agricultural systems.

The first trend of extension to new ecosystems is toward ecosystem with tree. The first one consists in the promotion of a new modality of PES for Café Agroforestry ecosystem. In 2007, an initiative of coffee organization representative of small coffee producer, COOCAFE, jointly with the CATIE, developed a study to analyse the ES

provision of Coffee AFS. This study evidenced the reduction of coffee area and a important change of land use from coffee AFS to other land use such as urbanization or pineapple production, which provide much less ES to the society than AFS. A consortium between CATIE, COOCAFE, and the national coffee institute (ICAFE), elaborated a proposal of new PES mechanism for AFS that propose a payment not only for the new trees planted in AFS, but for the whole area (coffee based AFS) as an ecosystem, arguing that it could be assimilate to protection modality. A dialogue and negotiation process has been developed with FONAFIFO in order to recognize the ES provided by AFS. A new PES modality could be created if the consortium finds new financial resources to finance this new modality. The second trend consists in the development of PES schemes for silvo-pastoral ecosystem. In 2007, the framework of a GEF funded project, CATIE scholars developed measurement methodology to evaluate ES provision of silvo-pastoral ecosystem and tested funding mechanisms based on the monitoring of the evolution of ES provision. This experience enables to initiate a dialogue with FONAFIFO around the creation of new modalities.

A second to trends consist in the extension to some specific agricultural ecosystems. A first initiative is the recognition of the provision of ES by agricultural organic production in the law of promotion of organic production (law # 8542) in 2006. This initiative came from the organic producers' movement of Costa Rica (*Movimiento of Agricultura Organica de Costa Rica - MAOCO*) that jointly with the MAG formulated this law. This legal recognition opens the possibility to explore new mechanisms and new modalities of PSE. A second initiative is the recognition of SE provided by Integrated Farming. This initiative is promoted by the MAG that is actually developing documents to evaluate the provision of ES by integrated farm in order to developed PES mechanisms.

Facing numerous solicitations to enlarge the PESP, the forestry group tends to maintain the predominance of the tools towards forestry support. The first resistance concerns the possible dilution of the available funds to extend the payment to new ecosystem, and argue that PESP was created to support forestry. More recently, they also argue for a reactivation of the management and plantation support. The main argument is that Costa Rica is now importing wood while forest area represent nowadays of around 51% of the national territory. More over, in line with latest international negotiation on Climate Change, the forestry scholars argue that carbon sequestration is nowadays more urgent

than storage, and that tree plantation is more efficient for carbon sequestration than forest conservation.

In this section, we showed that the initial architecture and governance rules of the program reflected the existing balance of power between various stakeholders of different sectors (forestry, agricultural, environmental) and that the current evolution of the governance of the programs illustrates tensions between different interests groups.

Conclusion

The study shows that prior to the adoption 4th forestry law, which creates PESP in Costa Rica, four key factors for policy change were presents: (1) a problem clearly defined and largely acknowledged – the reduction of forest cover, (2) specific public institutions and incentives programs dealing with the issue of forest area reduction, (3) consolidated organizations representing of the forestry stakeholders interests from grassroots to national level, (4) new ideas in term of representation of the forest (considering not only as a mere producer of material commodity – wood- but also as a provider of various services for the society) and support schemes. It shows that the policy sequences were rapids from the agenda setting to the policy decision due to a specific external new constraints (the prohibition of existing support mechanisms to forestry sector in line with OMC negotiation), new opportunity due to development of international environmental congress, and an internal compromises between concerned stakeholders under the dominance of one group of interests, the forestry sectors, that had more negotiation resources and alliances. If, the governance of the PESP reflected the balance of power between various stakeholders of different involved sectors (forestry, agricultural, environmental) in the mid-90, the evolution of PESP illustrates changes in the balance of power between interests groups due to reduction of forestry sector representation and reorganization and strengthening of agricultural and environmental representatives.

Even PESP has 13 years of implementation; PESP is facing some issues as the development and diversification of financing sources, the control of transaction costs, the fine-tuning of payment according to ES provision,... To deal with theses issues, a further analysis of actual perceptions of principal stakeholders and their objectives is needed to build some new consensual solutions.

Finally, the analysis of the policy process that led to the creation of the PESP in Costa Rica shows that institutionalization of PES mechanism depends more on the creation of policy windows in an existing balance of power between different stakeholders than the foreseen effectiveness of the policy instruments. It argues for the development of further analysis of stakeholders' interests and political background to foster and enforce PES mechanisms as well as the setting of flexible institutions that may be able to adapt to evolution of the local stakeholders' interests.

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