

# The Development of Payments for Ecosystem Services in China: Cutting Through the Cloud of Confusion Over China's Eco-Compensation

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## Summary

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Though Payments for Ecosystem Services (PES) was initially designed as a voluntary market-oriented mechanism, PES development in China became a top-down, government-driven process that is gradually evolving from centralized large-scale projects to decentralized smaller scale ones. Aside from the main objective of ecosystem conservation, poverty alleviation is often an additional important objective of PES. To improve the PES scheme in China, government needs to enhance administrative efficiency and promote multijurisdictional/sectoral cooperation and coordination; promote and develop more decentralized local initiatives and small-scale PES; cultivate a more favorable investment environment to attract greater participation of private actors; and encourage and support initiatives and legislation to ensure access to information and public participation leading to more rational, transparent, and informed PES decisionmaking.

Payments for Ecosystem Services (PES) as a promising conservation approach applied to internalize the environmental externalities has been introduced into China against the backdrop of serious environmental problems and the huge disparity between the East and West balance of trade accounts, the strong need for sustainability, and environmental justice. Having clarified its conceptual confusion, lessons will be drawn from this country's experience to date, and recommendations will be suggested to improve and complement the public PES practice in China. Specific attention will be paid to four areas: administrative efficiency and multijurisdictional/sectoral cooperation and coordination; more decentralized local initiatives and small-scaled PES; a more favourable investment environment to attract greater participation of private actors; and procedural arrangements that lead to more rational, transparent, and informed PES decisionmaking.

PES is a promising conservation approach applied to internalize the environmental externalities,<sup>1</sup> yet both theory and practice in this area are not quite matured worldwide. In light of the fierce controversy between environmental protection and economic development in China, combined with considerations based on huge economic imbalance and inequitable distribution of conservation responsibility between the eastern and western parts of China, PES is introduced as a complement to traditional conservation approaches, and poverty alleviation is considered as a side objective as well.

The development of PES in China began by the implementation of some large-scale, long-term PES schemes initiated by the central government to secure services for watershed protection, biodiversity protection, and natural landscape preservation. Examples often cited are: the Grain for Green Project; the Natural Forest Protection Program, and the Three-Norths Shelterbelt.<sup>2</sup> Along with the implementation of these schemes, many other pilot PES schemes (to a large extent focused on securing services for watershed protection) are launched or designed on a smaller scale by local governments. Some examples are the program between Beijing and Hebei Province on managing water quality and quantity for Beijing's Miyun and Guanting Reservoirs, the Dongtou County Water Conservation Area PES in Zhejiang Province, the Beijing-Tianjin Sandstorm Source Control Program, and the Lashihai Watershed PES scheme, to name but a few.<sup>3</sup>

1. PAYMENTS FOR ECOSYSTEM SERVICES: LEGAL AND INSTITUTIONAL FRAMEWORKS vii (Thomas Greiber ed., International Union for Conservation of Nature 2009).
2. See generally MICHAEL T. BENNETT, MARKETS FOR ECOSYSTEM SERVICES IN CHINA: AN EXPLORATION OF CHINA'S "ECO-COMPENSATION" AND OTHER MARKET-BASED ENVIRONMENTAL POLICIES 10 (2009), available at [http://www.katoombagroup.org/~forestr/publication\\_details.php?publicationID=2317](http://www.katoombagroup.org/~forestr/publication_details.php?publicationID=2317).
3. *Id.* at 18-9. The last case not been implemented yet.

Instead of using the term PES, a broad heading of “eco-compensation” is more generally referred to in China, which gives rise to widespread confusion over what it actually embodies. Currently, some general stipulations on eco-compensation can be found in the Water and Soil Conservation Act, the Water Pollution Control Act, the Forest Act, the Grassland Act, the Mineral Resources Act, and the Regulations on Restoring Farmland to Forest, etc. Based on practical experiences and the existing PES-related legislation, the Chinese government has made the development of eco-compensation mechanisms a priority, and China’s 11th Five-Year Guidelines (2006-2010) calls for the establishment of eco-compensation mechanisms.<sup>4</sup> In particular, China’s Ministry of Environmental Protection (MEP) issued Guiding Opinions on the Development of Eco-Compensation Pilot Work, which urges the development of eco-compensation pilots, and requires policymakers to speed up the pace of development of eco-compensation mechanisms, to develop intraregional and watershed-related eco-compensation mechanisms, and to resolve funding issues regarding conservation.<sup>5</sup> More relevantly, the MEP also encourages greater utilization of international funds and nongovernmental organization (NGO) conservation expertise.<sup>6</sup> In April 2010, the government finally launched a process to draft a specific regulation on eco-compensation.<sup>7</sup> As will be discussed later though, not all eco-compensation projects can be counted as PES. But relevant studies in this area are not yet sufficient. In order to clarify the concept of PES in China, one focus of this Article is to look through the complicated category of eco-compensation.

With the above background in mind, this Article will start by analyzing the theoretical foundation of this research. Then, based on PES-related legislation and practical experiences, the concept of PES in China will be clarified and the unique features of PES in China will be discussed. Finally, some recommendations will be given to facilitate further development of PES in China.

## I. PES in the Context of China

### A. Background Theories

The development of PES in China occurs against a specific economic and social backdrop. Since China adopted the reform and opening-up policy in late 1978, the burgeoning national economy has lifted millions of people out of poverty. Yet, this development is quite imbalanced. As conceived by Deng Xiaoping, who has been recognized as “the chief architect of China’s economic reforms and China’s socialist modernization,” the reform was to “allow some people and areas to get rich first and then when they get rich, they will move the whole society and the rest will follow.”<sup>8</sup> Thus, one direct result has been a differential in growth rates between coastal zones in the East and the more remote western areas contributing to a core-periphery or two-tier economy and society.<sup>9</sup>

During this process, numerous resources in the West, including natural resources, have been allocated to the East and values of ecosystem services (ES) provided by the West were ignored. Meanwhile, due to the massive exploitation of natural resources, agriculture expansion, and the increasing of industry, the environment in the West was not shielded from degradation. The widening gap between East and West finally led to the adoption of “Western Development Strategy” in 2000.<sup>10</sup> Having recognized the serious environmental situation in the West, environmental protection and conservation is viewed as a part of the strategy, and sustainable development is underscored. But going beyond the rhetoric has proved to be difficult. A decade after implementation, the overall trend of environmental deterioration has not been fundamentally averted, and in some cases has even gained momentum.<sup>11</sup>

The ecosystems in the western region of China include 171 types of forests, 85 types of meadows, and 49 types of deserts, as well as 21 different types of tundra, alpine cushion vegetation, and talus vegetation, which are vital to the whole country.<sup>12</sup> Moreover, many important rivers have their sources in this area. Most rivers in China flow from the West to the East, such as the Yangtze River, Huang River, Songhua River, Huai River, etc. The downstream

4. Zhonghua Renmin Gongheguo guo min jing ji he she hui fa zhan di shi wu ge wu nian gui hua gang yao [China’s Eleventh Five-Year Development Guidelines for National Economic and Social Development] (2006), [http://news.xinhuanet.com/misc/2006-03/16/content\\_4309517\\_11.htm](http://news.xinhuanet.com/misc/2006-03/16/content_4309517_11.htm); BENNETT, *supra* note 2, at 14.

5. Zhonghua Renmin Gongheguo huan jing bao hu bu [Ministry of Environmental Protection of the People’s Republic of China], Guan yu kai zhan sheng tai bu chang shi dian gong zuo de zhi dao yijian [Guiding Opinions on the Development of Eco-Compensation Pilot Work] (2007), [http://www.mep.gov.cn/gkml/zj/wj/200910/t20091022\\_172471.htm](http://www.mep.gov.cn/gkml/zj/wj/200910/t20091022_172471.htm); BENNETT, *supra* note 2, at 14. Michael Bennett views it as a part of the 11th Five-Year Guidelines, while in fact it comes from the Guiding Opinions on the Development of Eco-Compensation Pilot Work. The 11th Five-Year Guidelines only briefly mention the development of eco-compensation mechanisms.

6. *Id.*

7. Currently, the Chinese government is openly seeking advice on drafting this regulation, which will last until May 1, 2011. The drafting is led by the National Development and Reform Commission, and comments can be submitted on its website: [http://www.sdpc.gov.cn/wsxf/xbs\\_vote.jsp](http://www.sdpc.gov.cn/wsxf/xbs_vote.jsp).

8. DENG XIAOPING, Deng Xiaoping wen xuan (di san juan) [Selected Works of Deng Xiaoping (Volume III)] 116 (2007).

9. JAMIE MORGAN, ISSUES IN THE POLITICAL ECONOMY OF ECONOMIC TRANSITION IN THE PEOPLE’S REPUBLIC OF CHINA 17 (2006), *available at* [http://www.helsinki.fi/globalgovernance/research/muut%20dokumentit/Morgan\\_working\\_paper1.pdf](http://www.helsinki.fi/globalgovernance/research/muut%20dokumentit/Morgan_working_paper1.pdf).

10. “Western area” includes 12 provinces (some are autonomous regions and direct-controlled municipalities), namely Chongqing, Sichuan, Guizhou, Yunnan, Tibet, Shanxi, Gansu, Qinghai, Ningxia, Xinjiang, Inner Mongolia, Guangxi. It amounts to 68.8% of China’s total land area.

11. A classic description of China’s environmental situation is that “despite improvement in limited areas, the overall situation is still deteriorating.” See Hu Angang et al., Guo jia shi yi wu gui hua gang yao shi shi jin zhan ping gu bao gao [Evaluation and Assessment Report on the Implementation and Progress of the Outline of the National Eleventh Five-Year Plan] 8 Hong guan jing ji guan li [Macroeconomic Management] 13, 17 (2008).

12. ECOSYSTEMS AND HUMAN WELL-BEING: MULTISCALE ASSESSMENTS: FINDINGS OF THE SUB-GLOBAL ASSESSMENTS WORKING GROUP (MILLENNIUM ECOSYSTEM ASSESSMENT SERIES) 361 (Doris Capistrano et al. eds., 2005).

areas of these rivers are often more prosperous and mainly rely on the upper reaches in the West to regulate flows, control erosion and sedimentation, secure water quality, and maintain downstream habitat and recreation uses.<sup>13</sup>

In response to China's severe environmental problems and the huge disparity between the East and West balance of trade accounts, the strong need for sustainability and environmental justice underscores the need for the adoption of PES. The principles of sustainable development and environmental justice further characterize and shape the way in which the PES mechanism is perceived in China.

For one thing, PES is viewed as an approach to deliver sustainability by providing economic incentives to internalize environmental externalities. It integrates the needs for environmental protection and economic development. Sustainable governance often involves two main approaches: the traditional regulatory method of command and control; and the use of economic or market-based instruments. The latter, including PES, is more effective than the former in regulating nonpoint sources of pollution.<sup>14</sup> Although initially PES was only created for the purpose of ecosystem conservation, its later evolution in developing countries shows that economic gain is not just viewed as an incentive for conservation, but also highlighted as a side objective of PES itself. In China, most poverty-stricken areas possess rich resources of ES.<sup>15</sup> Hence, the idea that participants can profit while helping to protect ecosystems seems quite appealing for countries like China. Even though there are doubts on setting poverty alleviation as an objective of PES and the link between ES and economic development has been proved to be troublesome in practice, PES does provide a promising avenue to achieve sustainability. Or at least, it could provide greater flexibility and adaptability in reconciling the dual goals of conservation and development.<sup>16</sup>

Another dimension of understanding PES can be gained from an environmental justice perspective. Broadly speaking, environmental justice refers to a political and social movement to address the disparate distribution of environmental harms and benefits in society, and to reform the processes of environmental decisionmaking, so that all affected communities have a right to meaningful participation.<sup>17</sup> On one hand, distributional inequality is highly relevant to externalities. In particular, positive externality arises when an action by an individual or a group confers

benefits to others but it is not reflected in market prices.<sup>18</sup> For example, if an upstream area was able to preserve a sound environment, the downstream area, as a "free rider," could enjoy the spillover advantages without shouldering a fair share of cost. Thus, the burden of environmental protection and the relevant costs are distributed unequally to the providers of the ES. As noted earlier, the providers of ES in China are often located in relatively poor areas, particularly in the West. The inequitable distribution of conservation costs impedes their right to development and in turn discourages long-term conservation behaviors. To solve this distributive injustice, it is necessary to internalize the positive environmental externalities by establishing appropriate prices on ES and giving financial incentives to the providers. On the other hand, PES could also contribute to procedural justice by providing a platform for the sellers (providers) and buyers of ES to communicate and negotiate. Hence, the providers have a better chance of securing their interests. Through this process, the information transparency and public participation could be better enhanced.

Therefore, in light of the needs for improving sustainability and environmental justice, it is crucial to develop PES in China. And the rationale mentioned above should have far-reaching impacts on PES legal frameworks.

## B. The Concept of PES

The incipient nature of PES often results in some conceptual confusion. This situation is further complicated during the process of adapting PES into various existing domestic legal and institutional frameworks. Particularly, the ambiguous definition of PES in China has led to troublesome confusion in both theory and practice. Since the legislation and practice will differ considerably depending upon the concrete definition of PES,<sup>19</sup> it is the concept of PES itself that needs to be clarified in the first place.

According to Sven Wunder,

a PES is a voluntary transaction where a well-defined ES (or a land-use likely to secure that service) is being "bought" by at least one ES buyer from at least one ES provider, if, and only if, the ES provider ensures that the service is provided on an ongoing basis (i.e. conditionality).<sup>20</sup>

This is what he referred to as the "pure PES" definition, as opposed to the notion that any "payment" somehow intended to promote "environmental services" could be PES.<sup>21</sup>

Although there are some merits in sticking with the concept of PES in a narrow sense,<sup>22</sup> overstressing the uniqueness of the "true PES" could restrict the development of

13. PAYMENTS FOR ECOSYSTEM SERVICES: LEGAL AND INSTITUTIONAL FRAMEWORKS, *supra* note 1, at 5.

14. SVEN WUNDER, PAYMENTS FOR ENVIRONMENTAL SERVICES: SOME NUTS AND BOLTS 1 (2005), available at [http://www.cifor.cgiar.org/publications/pdf\\_files/OccPapers/OP-42.pdf](http://www.cifor.cgiar.org/publications/pdf_files/OccPapers/OP-42.pdf).

15. WANG LIAN ET AL., A RESEARCH FRAMEWORK OF THE RELATIONSHIP BETWEEN PAYMENTS FOR ENVIRONMENTAL SERVICES AND POVERTY ALLEVIATION IN CHINA (2009).

16. SARA J. SCHERR ET AL., DEVELOPING FUTURE ECOSYSTEM SERVICE PAYMENTS IN CHINA: LESSONS LEARNED FROM INTERNATIONAL EXPERIENCE 64 (2006), available at <http://www.profor.info/profor/sites/profor.info/files/publication/ForestTrends-PES-China.pdf>.

17. Ke Jian, *Environmental Justice: Can an American Discourse Make Sense in Chinese Environmental Law?*, 24 TEMP. J. SCI. TECH. & ENVTL. L. 253, 254 (2005).

18. ULAGANATHAN SANKAR, ENVIRONMENTAL EXTERNALITIES, <http://coe.mse.ac.in/dp/envt-ext-sankar.pdf> (last visited Dec. 2, 2011).

19. PAYMENTS FOR ECOSYSTEM SERVICES: LEGAL AND INSTITUTIONAL FRAMEWORKS, *supra* note 1, at 6.

20. WUNDER, *supra* note 14, at 3.

21. WUNDER, *supra* note 14, at 5.

22. See WUNDER, *supra* note 14, at 3.



PES in specific contexts. In order to make it easier for PES to integrate with China's existing legal and institutional frameworks, it seems appropriate to allow some flexibility, as long as we keep in mind that

what makes a PES a PES is that in any payment arrangement those who pay are aware that they are paying for an ecosystem service that is valuable to them or to their constituencies—and those who receive the payments engage in meaningful and measurable activities to secure the sustainable supply of the ES in question.<sup>23</sup>

Some controversies underlying this definition still need to be addressed. From the buyer's perspective, PES requires the free rider (beneficiary) to shoulder a fair share of cost, by which the positive environmental externalities could be internalized, and thus contribute to distributive justice.<sup>24</sup> But there is another side of the story. In reality, PES is often introduced when there is no secured supply of ES. Therefore, when a new PES scheme commences, the buyer is more likely to be a victim of environment deterioration being ES providers rather than a beneficiary of ES. Thus, the "beneficiary pays" principle could actually be the "victim pays" principle.<sup>25</sup>

Although this awkward situation seems quite unfair at first glance, it should be noted that the responsibilities for environmental protection are not fairly distributed in the first place. Geographically, certain areas have to bear more of the burden of environmental conservation, which could hinder their ability to pursue economic gains. Simply focusing on one side of the equation would not contribute to a constructive solution. If the victim pays principle was taken to extremes and hence denies any payments to share the responsibility, environmental deterioration would continue unabated and only get worse. The beneficiary pays principle, however, is more in line with the requirements of environmental justice and could lead to a win-win solution. Moreover, even if the victim pays principle make sense at the beginning of a PES scheme, as long as the PES scheme is effective, those "victims" will eventually become beneficiaries and strive to maintain this position in the long run.

From the provider's perspective, another potential moral dilemma lies in the reality that PES mainly happens when there is some current or projected threat.<sup>26</sup> It means that people who already live in approximate harmony with nature, without any credible reason to endanger ES, nor facing any external threat, will have less chance to partici-

pate in a PES scheme.<sup>27</sup> But since they are still ES providers, not to mention that they actually performed well, is it fair not to pay them? Isn't this in contradiction with the nature of PES itself? As an explanation, James Salzman argues that "the key point to recognize is that we are not really paying for ES but, rather, for improvements in service provision."<sup>28</sup> While this insight clarifies the problem in a large extent, there is still another possibility, namely PES could be an economic rent for basically doing nothing.<sup>29</sup> Another clarification is based on a more practical consideration. Since the goal is to conserve ecosystems, priority concerns should be given to those actions that can lead to greater marginal improvements.<sup>30</sup>

As a mechanism in response to environmental problems, it is quite reasonable for PES to offer payments to avert the current or projected threat on ES. No instrument is perfect, and such priority difference underlying the PES does not necessarily mean that those people who are providing an acceptable level of ES should not get paid. In fact, such payments could be, at least in part, driven by the worthy objective of poverty alleviation, especially when government plays a key role in the PES scheme, to be discussed later in this Article. Moreover, other economic instruments could also be used to encourage environment-friendly behavior, such as ecosystem credits, that can be applied to landowners who have been good stewards in the past.<sup>31</sup>

### C. Confusions Over Eco-Compensation

In order to fully comprehend PES in the context of China, it is necessary to clarify the relationship between PES and the broad heading of eco-compensation. Eco-compensation can be understood in both the narrow and broad sense. In a narrow sense, eco-compensation can be viewed as being synonymous with PES.<sup>32</sup> In a broad sense, however, it is a mixture of economic instruments and arrangements that share the common goal of ecosystem conservation. An official definition was provided by the MEP in the Guiding Opinions on the Development of Eco-Compensation Pilot Work, which defined an eco-compensation mechanism as

a range of economic policies that utilize both administrative and market instruments to integrate the needs of environmental protection with economic interests. It aims at ecosystem conservation and promoting harmony between human and nature; and is based on the values of

23. PAYMENTS FOR ECOSYSTEM SERVICES: LEGAL AND INSTITUTIONAL FRAMEWORKS, *supra* note 1, at 6.

24. In China, this is often referred to as the "beneficiary pays principle" and it is viewed as one of the fundamental principles underlying the PES mechanism. See *infra* note 35.

25. Wunder mentioned that "being a so-called 'ES provider' often just means not being an environmental vandal." Under such circumstances, it seems that the PES mechanism requires the victim, instead of the polluter or destroyer, to pay for the environmental improvement measures. See WUNDER, *supra* note 14, at 22; James Salzman, *A Field of Green? The Past and Future of Ecosystem Services*, 21 J. LAND USE & ENVT'L. L. 133, 142-43 (2006).

26. WUNDER, *supra* note 14, at 21.

27. See WUNDER, *supra* note 14, at 22. In fact, Wunder argues that these people "will generally not qualify as PES recipients." This argument seems a little bit extreme.

28. Salzman, *supra* note 25, at 143.

29. WUNDER, *supra* note 14, at 8.

30. Salzman, *supra* note 25, at 144.

31. SARA J. SCHERR ET AL., *supra* note 16, at 45.

32. Zhongguo huan jing yu fa zhan guo ji he zuo wei yuan hui [China Council for International Cooperation on Environment and Development], Sheng tai bu chang ji zhi ke ti zu bao gao [Report on Taskforce on Eco-Compensation] (2008), available at [http://www.china.com.cn/tech/zhuanti/yyh/2008-02/26/content\\_10728024.htm](http://www.china.com.cn/tech/zhuanti/yyh/2008-02/26/content_10728024.htm).

ES, costs of ecosystem conservation and opportunity costs of development.<sup>33</sup>

In other words, it is a highly diverse mosaic of initiatives and public programs that incorporate payments or market-based concepts into national, provincial, and municipal programs.<sup>34</sup>

With regard to what this phrase actually embodies, the answer can be discerned from one of the fundamental principles of PES set by the MEP, namely, “those who develop and exploit resources should also protect the environment; those who destroy the environment should repair it; those who benefit from it should subsidize it; and those who pollute should pay.”<sup>35</sup> This can be further summarized into two subcategories: on one hand, those who develop and exploit resources should internalize the environmental negative externalities generated by them, should be responsible for ecosystem restoration, and should pay for the consumption of environment carrying capacity. On the other hand, the beneficiaries should compensate the providers of ES appropriately.<sup>36</sup> The former actually includes both the polluter-pays principle and the destroyer pays principle. Since the polluter pays principle has been implemented worldwide and enjoys widespread support, the following discussion will focus on the destroyer pays principle and the beneficiary pays principle. It must be noted, however, that the polluter-pays principle is still highly relevant to PES, for this payment is an important source of PES funds.

## I. Destroyer Pays Principle

The destroyer pays principle is commonly used in China when discussing eco-compensation and has been reflected in legislation.<sup>37</sup> It requires destroyers to pay for behavior that causes damage to ecological habitat and natural resources.<sup>38</sup> It is quite similar to the polluter-pays principle, except that the latter applies in the area of pollution prevention. The destroyer pays principle is an extension of the polluter-pays principle in the area of conservation of natural resources. Logically, it recognizes the legitimacy of utilizing and to some extent even unavoidably destroying natural resources during burgeoning economic development in China. As a typical application, a mining company is obligated to pay for the restoration of ES that are degraded, damaged, or

destroyed by the mining activities.<sup>39</sup> Similar requirements are also found under the Water and Soil Conservation Act, according to which soil erosion control expenses are the responsibility of the enterprise or business unit that created the erosion.<sup>40</sup> In addition, developers, e.g., mining, infrastructure, and other construction projects, who must conduct their operations on land zoned as forest area are to be levied a “forest vegetation restoration fee.”<sup>41</sup> Literally speaking, the above fees are payments for ecosystem restoration, yet the cause of these payments is not because the company or business wants to “buy” a sustainable supply of certain ES, but because it is responsible for the ecosystem degradation and damage. Hence, what are internalized through this mechanism are not positive externalities, but negative ones. From this perspective, although there may be some merit in framing this economic mechanism within the broader term of eco-compensation, it should be distinguished from the concept of PES.

## 2. Beneficiary Pays Principle

The beneficiary pays principle is a fundamental rule underlying PES. In China, it is applied by various public PES schemes that involve direct payments from the government to individual and community-level suppliers of ES, as well as policies that develop frameworks of cooperation between various levels of government for the financing and sharing of costs of environmental protection and restoration.<sup>42</sup> In the latter situation, this principle is implemented at the administrative level and local governments as representatives of administrative districts are treated as parties of PES. In practice, the former is often relied on by the latter to raise funds. Public PES schemes can be found in the areas of transboundary river basin management, forest conservation, and grassland and wetland protection, aimed at securing and improving ES, such as preserving water quality and quantity, flood prevention, anti-desertification, control of erosion, and biodiversity protection.

Initially, public PES projects in China were driven by the central government in schemes such as the Grain for Green Project,<sup>43</sup> the Natural Forest Protection Program, and the Three-Norths Shelterbelt Program. Along with the implementation of these large-scale programs, the notion of eco-compensation has been recognized by specific legislation. Meanwhile, there are an increasing number of further examples at the local/regional levels. Therefore, it is relatively safe to conclude that PES in China is continuing

33. Zhonghua Renmin Gongheguo huan jing bao hu bu [Ministry of Environmental Protection of the People's Republic of China], *supra* note 5.

34. BENNETT, *supra* note 2, at 6. There are various interpretations on the precise meaning of eco-compensation; the following discussion will focus on those mechanisms that have received general recognition as belonging to the category.

35. Zhonghua Renmin Gongheguo huan jing bao hu bu [Ministry of Environmental Protection of the People's Republic of China], *supra* note 5; BENNETT, *supra* note 2, at 14.

36. Zhonghua Renmin Gongheguo huan jing bao hu bu [Ministry of Environmental Protection of the People's Republic of China], *supra* note 5.

37. *See infra* notes 39, 40, 41.

38. WANG JINNAN, EXPLORING AND DEVELOPING ENVIRONMENTAL ECONOMIC POLICIES FOR CHINA IN THE NEW ERA (2010), available at <http://www.caep.org.cn/english/paper/Review-on-Research-and-Practice-in-Environmental-Economic-Policies-in-China.pdf>.

39. Zhongguo huan jing yu fa zhan guo ji he zuo wei yuan hui [China Council for International Cooperation on Environment and Development], *supra* note 32.

40. Shui tu bao chi fa [Water and Soil Conservation Act] (promulgated by the Standing Comm. Nat'l People's Cong., June 29, 1991, effective June 29, 1991) art. 27 (P.R.C.); BENNETT, *supra* note 2, at 47.

41. Sen lin fa [Forest Act] (promulgated by the Standing Comm. Nat'l People's Cong., Apr. 29, 1998, effective July 1, 1998) art. 18 (P.R.C.); BENNETT, *supra* note 2, at 45.

42. BENNETT, *supra* note 2, at 8.

43. This program is also known in the English-language literature as Conversion of Cropland to Forests and Grassland or the Sloping Land Conversion Program.

to develop and that this trend is encouraging more institutionalized legal arrangements. The following discussion provides an overview of the relevant legislation and practical considerations. It should be noted that a PES project may be bundled with several ES, and the PES categories outlined here based on current legislation often overlap with each other.<sup>44</sup>

### a. Watershed PES

The provision and protection of watershed ecosystem services is by far the biggest driver of eco-compensation policy in China, and is where the majority of local innovations are occurring.<sup>45</sup> Yet, there is a dearth of comprehensive and coordinated regulations in this area. Although the Water Pollution Control Act only briefly addresses the watershed PES from a pollution control perspective, it nevertheless presents a general picture of watershed PES in China. According to Article 7 of this Act, “the state shall, by means of fiscal transfer payments or others, establish eco-compensation mechanisms to preserve aquifers and other drinking water sources, reserve areas and upper reaches of rivers, lakes and reservoirs.”<sup>46</sup>

Given the incipient nature of eco-compensation, this clause remains quite general and ambiguous. It could include both direct payments from the government to individual and community-level suppliers of ES, as well as cost-sharing and the financing of environmental protection and restoration measures among various levels of government. In addition, it remains open for eco-compensation projects to be initiated and funded either through the central government or by local governments. Moreover, the policy thrust seems to encourage the establishment of eco-compensation mechanisms under any circumstances as part of river basin management, in circumstances that are not always warranted, since PES may not in many situations be the better choice. What is more worrisome, however, is how to design and implement PES in the face of existing problematic river basin management frameworks characterized as fragmentation, poor coordination among governments, and varied expertise in water management issues.

In practice, the following examples reflect the current state of watershed PES in China:

To begin with, some public PES schemes only deal with cost-sharing and the financing of environmental protection and restoration among various levels of government.

Typical cases are the Jiulong River and Min River Watershed PES Projects in Fujian Province, which have been identified as two of the six earliest pilot projects of eco-compensation in China.<sup>47</sup> They involve fiscal transfers for watershed management costs, with the annual funds of Renminbi (RMB) 28 and 35 million, respectively.<sup>48</sup> The funding source is threefold: cross-district fiscal transfers from the downstream city of Xiamen to Zhangzhou and Longyan in the upper reaches of the Jiulong River, as well as from the downstream city of Fuzhou to the cities of Nanping and Sanming in the upper reaches of Min River. These upstream cities also contribute to around one-third or less of the total fund, and the Fujian Provincial Environmental Protection Department (formerly the Fujian Provincial Environmental Protection Bureau) earmarked RMB 8<sup>49</sup> and 15 million, respectively, for the projects.<sup>50</sup>

In light of these developments, the Provincial Committee of Environmental Protection and a joint conference on river basin management were used to facilitate cooperation and coordination among relevant local governments.<sup>51</sup> Moreover, these projects are also combined with other forest-related PES projects and guided by a more comprehensive provincial ecosystem policy.<sup>52</sup> As a result, 89.5% and 95.6% of the surface water from these two rivers was able to meet the Grade I-III National Surface Water Quality Standards in 2006, up from 84.3% and 83%, respectively, in 2004.<sup>53</sup>

Other programs, however, show a mixture of both direct payments from the government to individual and community-level suppliers of ES, as well as cost-sharing and financing among governments. This is represented by the Huai River, Hai River, and Xiaoqing River Watersheds PES Projects in Shandong Province, that mainly aim at improving water quality for the South-North Water Transfer Project.<sup>54</sup>

44. PES is often studied based on the types of services, including provisioning services, regulating services, supporting services, and cultural services. But it is kind of difficult to use this classification to guide studies on China's public PES schemes and relevant practices. This is partly because the public PES projects are initiated by the government, which is restricted by administrative competence, and it is often not in line with the above classification. Besides, PES in China frequently happens as a main feature or component of a broader, comprehensive ecosystem policy. Hence, a PES project is more likely to be bundled with several ES. Yet, it is prudent and beneficial to keep this classification in mind during research and practice.

45. BENNETT, *supra* note 2, at 7.

46. Shui wu ran fang zhi fa [Water Pollution Control Act] (promulgated by the Standing Comm. Nat'l People's Cong., Feb. 28, 2008, effective June 1, 2008) art. 7 (P.R.C.).

47. Huang Dongfeng et al., Min jiang, jiulong jiang deng liu yu sheng tai bu chang ji zhi de jian li yu shi jian [Development and Practice of Eco-Compensation Mechanism in Min River and Jiulong River] 29 Nong ye huan jing ke xue xue bao [Journal of Agro-Environment Science] 324, 326 (2010). The Jiulong River Project started in 2003 and ended in 2007, while the duration for the Min River Case was from 2005 to 2010.

48. BENNETT, *supra* note 2, at 18.

49. The fund was raised from RMB 4 million to 8 million since 2005.

50. BENNETT, *supra* note 2, at 20, 22.

51. Huang Dongfeng et al., *supra* note 47.

52. The Fujian Provincial Government has highlighted environmental protection and ecosystem conservation as a priority area. In particular, policies aimed at pollution prevention, improving rural environmental quality, developing environmental-friendly industry, and changing industrial structures could have a profound impact on the implementation of these PES projects. Huan jing bao hu bu yu fu jian sheng ren min zheng fu qian shu he zuo xie yi [Cooperation Agreement Signed Between Ministry of Environmental Protection and the Fujian Provincial Government] (2010), [http://www.zhb.gov.cn/zhxx/hjyw/201004/t20100415\\_188214.htm](http://www.zhb.gov.cn/zhxx/hjyw/201004/t20100415_188214.htm).

53. Yi liu yu sheng tai bu chang wei tu po kou, tan suo jian li zhi wu jian pai shi chang ji zhi [The Development of Payments for Watershed Services], [http://czzz.mof.gov.cn/zhongguocaizhengzazhishe\\_daohanglanmu/zhongguocaizhengzazhishe\\_kanwudaodu/zhongguocaizhengzazhishe\\_zhongguocaizheng/2010nian/3446/346/201003/t20100324\\_279542.html](http://czzz.mof.gov.cn/zhongguocaizhengzazhishe_daohanglanmu/zhongguocaizhengzazhishe_kanwudaodu/zhongguocaizhengzazhishe_zhongguocaizheng/2010nian/3446/346/201003/t20100324_279542.html) (last visited Dec. 8, 2011).

54. BENNETT, *supra* note 2, at 25. The South-North Water Transfer Project is a multi-decade infrastructure project of China to better utilize water resources available to China. The main thrust is to divert water from the Yangtze River



Funding is jointly raised by the participating cities and counties according to their total amount of sewage emissions and other pollutant indexes. In addition, the provincial government also contributes to the fund with no less than city/county-level contributions, and loans from the World Bank and foreign governments are used as well.<sup>55</sup> Direct payments are made to farmers for two years to convert key areas of farmland and aquaculture operations back to wetland along the river, and 50% of the water pollution management fees or 50% of the industry's pollution cost reductions can be reimbursed for industries that satisfy pollution standards and participate in the "Deep Management" or "Further Improve Industry" Projects.<sup>56</sup>

Furthermore, some public PES schemes mainly focus on direct payments, such as the Dongtou County Water Conservation Area PES in Zhejiang Province. The economic boom in the region has put freshwater supply under threat. In response, a PES scheme was developed to pay farmers and business owners to cease land use activities (including cropping, horticultural, husbandry, mining, and construction) that have detrimental impacts on two key reservoirs.<sup>57</sup> Funding for the program comes from a County Financial Bureau special fund of RMB 200 000, 50% of basic water fees that are centralized for use by the County Financial Bureau, 10% of county water resource fees, and 30% of per-ton water pollution management fees.<sup>58</sup>

Finally, different from the projects referred to above, the Lashihai Watershed PES Project (not yet implemented) is driven primarily by international organizations (Conservation International and the World Bank) and expertise.<sup>59</sup> Aimed at restoring water quality and maintaining biodiversity, this pilot project is to consist of special fees charged to tourists (beneficiaries in this case) for visiting Lijiang (old city) and the Lashihai Nature Reserve, to be used to compensate upper watershed farmers adjacent to or near Lashi Lake for changing their land use practices.<sup>60</sup>

So far, there are no successful transprovincial examples on watershed PES in China. All of the recorded cases are confined to one provincial jurisdiction. There are, however, efforts being made on developing a PES project to preserve headwaters of the Dong River in Jiangxi Province, a key source of drinking water for Hong Kong. An agreement on watershed PES has already been signed by the Jiangxi Provincial Government and other stakeholders, according to which, the Guangdong Provincial Government will

pay RMB 150 million annually to the Jiangxi Provincial Government from 2005 to 2025 to compensate for both the costs and concurrent losses of Jiangxi Province attributed to preserving the headwaters of the Dong River.<sup>61</sup> As of the date of writing, however, this Agreement has not been implemented. In 2009, the Jiangxi Provincial Development and Reform Commission approached the central government for more support and coordination, and the outcome of these negotiations remains to be seen.<sup>62</sup>

## b. Forest-Related PES

The forest resource is crucial to watershed protection and soil conservation, for approximately 80.1% of total public benefit forests in China is watershed- or soil-conservation-related.<sup>63</sup> While forest-related PES could be subject to other legislation based on the services provided, these PES programs are also regulated by the Forest Law and relevant regulations. Fundamentally, the forest eco-compensation fund is established at both central and local level, and shall be earmarked for nurturing, conservation, and management of "public benefit" forests.<sup>64</sup> Meanwhile, it is stipulated that those who manage and protect public benefit forests have the right to receive compensation.<sup>65</sup> The above requirements appear to target the preservation of all ES that can be derived from the forest.

The forest eco-compensation fund operates at both central and provincial levels. The former is used for conservation of national-level key public benefit forest area, while the latter is applied to provincial-level public benefit forest area.<sup>66</sup> The payments made through this funding mechanism provide pivotal financial support and incentives to relevant governments, communities, and individuals to improve and secure ES in forest area. In view of the fact that 72.1% of total public benefit forest area is located in the western region,<sup>67</sup> it seems reasonable that the central

to the Yellow River and Hai River. More information is available at [http://en.wikipedia.org/wiki/South%E2%80%93North\\_Water\\_Transfer\\_Project](http://en.wikipedia.org/wiki/South%E2%80%93North_Water_Transfer_Project).

55. BENNETT, *supra* note 2, at 25.

56. *Id.* at 26.

57. *Id.* at 19, 24. This program was initiated in 2005 and revised in 2007.

58. BENNETT, *supra* note 2, at 24; Dong tou xian shui yuan bao hu qu sheng tai bu chang shi xing ban fa (shi xing) [Dongtou County Water Resource Protected Area Eco-Compensation Implementation Measures (Try Out)] (June 6, 2008), <http://www.66dt.com/system/2008/06/06/010233437.shtml>. The funding statistics are based on the 2007 plan.

59. BENNETT, *supra* note 2, at 28. Bennett misspelled "Lashihai" as "Laishihai."

60. *Id.*; ALESSANDRA SGOBBI ET AL., STUDY ON PAYMENT FOR ECOLOGICAL AND ENVIRONMENTAL SERVICES IN CHINA: A PILOT STUDY ON PAYMENT FOR ECOLOGICAL AND ENVIRONMENTAL SERVICES IN LASHIHAI NATURE RESERVE, CHINA 11 (2006).

61. The Hong Kong government already agreed to pay the Guangdong Provincial Government RMB 100 million annually. But Jiangxi Province was left out of the deal, despite the fact that Dong River actually originates from there.

62. Li Zhongfeng, Liu yu sheng tai bu chang jian nan po ti [Uneasy First Steps Towards Payments for Watershed Services in China] (2010), [http://www.cfen.com.cn/web/cjb/2010-07/17/content\\_648053.htm](http://www.cfen.com.cn/web/cjb/2010-07/17/content_648053.htm).

63. Headwater forests make up 4.8%, forests along watersheds make up 23.6%, wetlands and reservoirs make up 5.1%, desertified areas suffering from severe soil erosion make up 46.6%. Guo jia lin ye ju fa zhan ji hua yu zi jin guan li si, guo jia lin ye ju sen lin zi yuan guan li xiao yi bu chang zheng ce diao yan bao gao [Survey Research Report on Regional Forest Ecosystem Compensation Policies] (2008), <http://www.gdf.gov.cn/index.php?controller=front&action=view&id=10004826>; BENNETT, *supra* note 2, at 36.

64. Sen lin fa [Forest Act] (promulgated by the Standing Comm. Nat'l People's Cong., Apr. 29, 1998, effective July 1, 1998) art. 8 (P.R.C.).

65. Sen lin fa shi shi tiao li [Regulations on Implementation of Forest Law] (promulgated by the St. Council, Jan. 29, 2000, effective Jan. 29, 2000) art. 15 (P.R.C.).

66. BENNETT, *supra* note 2, at 34.

67. Department of Resources and Forestry Administration and Department of Economic Development Research Centre & State Forestry Administration (SFA), *supra* note 63.

forest eco-compensation fund could at least have some potential in delivering sustainability in the West and internalizing positive externalities. Unfortunately, this funding mechanism has been criticized for providing compensation payments that are too low. The central government recently raised the annual payments to those who manage and protect public benefit forests from RMB 5 to RMB 10 per mu (μ) (1,800 meters per hectare (m/ha)). Whether this new standard will generate enough incentive to improve performance is still highly doubtful. It is therefore suggested that the forest eco-compensation fund needs be combined with other PES projects and environmental policies.

Despite the ineffectiveness of the current forest eco-compensation fund, another large-scale project is worth mentioning here. The Natural Forest Protection Program (NFPP) was initiated in 1998 in response to major floods in the upper and middle Yangtze River watershed and the Songhua and Nen Rivers in northeast China that were attributed to, or exacerbated by, over-logging in state forest areas.<sup>68</sup> The total targeted forest area is 1.023 billion mu (68.2 million ha), of which 846 million mu (56.4 million ha) is designated as natural forest area.<sup>69</sup> The 2000-2010 plan has the ultimate aim of restructuring the state forest sector to place greater emphasis on economic and environmental sustainability of forest resource management, both for timber production and ecological conservation.<sup>70</sup> To implement these goals, the NFPP stipulates the payment of subsidies by the central government to participating bureaus and local forest authorities for various environmental and social tasks.<sup>71</sup> The total program budget for 2000-2010 is RMB 96.2 billion, of which the central government will provide RMB 78.4 billion.<sup>72</sup>

Compared with the vibrant watershed PES practices at the local level, the forest-related PES remains highly centralized, and the development in this area is a clear top-down process. However, the above PES mechanisms still serve as a foundation of forest conservation in China, and the lack of initiatives in this area could be improved by other PES programs that also highlight the ES provided by forests.

### c. PES Relevant to Soil Erosion Prevention and Anti-Desertification

The serious problems of soil erosion and desertification are two of the major concerns that underlie the development of PES in China. Along with implementation of the Grain for Green Project and the Three-Norths Shelterbelt Program, certain incentive arrangements are set out in legislation.

For example, according to Article 23 of the Water and Soil Conservation Act, “the state shall encourage the agricultural collective economic organizations and farm-

ers in soil erosion areas to engage in soil conservation and rehabilitation, in return, supportive measures on funding, energy, food and taxes shall be provided by governments.”<sup>73</sup>

In addition, the Anti-Desertification Law stipulates that local governments at various levels located in desertified areas may organize the local agricultural collective economic organizations and their members to take collective measures on rehabilitation of the desertified land on a voluntary basis. The money and labor invested by the participants could be converted into shares or capital funds for the rehabilitation projects, or be compensated by other means.<sup>74</sup> Meanwhile, it allows for local governments to provide subsidies or tax incentives to units, private organizations, and individuals that engage in activities to help control or reverse desertification.<sup>75</sup> It is further provided that reasonable compensation should be given to those who have effectively managed desertification on land area that is subsequently enrolled into national or provincial conservation areas.<sup>76</sup>

In order to tackle severe soil erosion and flooding, the Grain for Green Project was initiated to help restore ecological balance in the western region by turning low-yielding farmland back into forest and grassland.<sup>77</sup> It involves a total budget of RMB 337 billion (of which RMB 130.1 billion has been spent during 2000-2006) and involves 139 million mu (9.27 million ha) of cropland and afforests 205 million mu (13.67 million ha) of wasteland.

This program has been institutionalized by the Regulations on Restoring Farmland to Forest.<sup>78</sup> Driven by the government, planning is crucial to identify the farmlands that are subject to the project. An overall project plan is made by the central government, complemented by plans at the provincial level.<sup>79</sup> Detailed arrangements are based on the planning process and contents.<sup>80</sup> Yet, during this process, relevant information disclosure and public participation are not mentioned at all. Having identified the area to be covered by the project, local governments will sign contracts with the land management contractors who are assigned the task of restoring farmland to forest.<sup>81</sup> The contract shall specify the objective and scope, rights and obligations, payment structure, and duration. Ground rules for

68. BENNETT, *supra* note 2, at 43.

69. *Id.* at 10.

70. *Id.* at 43.

71. *Id.* at 44.

72. *Id.*

73. Shui tu bao chi fa [Water and Soil Conservation Act] (promulgated by the Standing Comm. Nat'l People's Cong., June 29, 1991, effective June 29, 1991) art. 23 (P.R.C.).

74. Fang sha zhi sha fa [Anti-Desertification Law] (promulgated by the Standing Comm. Nat'l People's Cong., Aug. 31, 2001, effective Jan. 1, 2002) art. 31 (P.R.C.).

75. *Id.* art. 33; BENNETT, *supra* note 2, at 41.

76. Fang sha zhi sha fa [Anti-Desertification Law] (promulgated by the Standing Comm. Nat'l People's Cong., Aug. 31, 2001, effective Jan. 1, 2002) art. 35 (P.R.C.); BENNETT, *supra* note 2, at 41.

77. People's Daily, *Grain-for-Green Project Takes Off in West China* (2000), [http://english.peopledaily.com.cn/english/200004/17/eng20000417\\_39061.html](http://english.peopledaily.com.cn/english/200004/17/eng20000417_39061.html).

78. The regulation here only addresses the former one. The restoration of farmland into grassland is regulated by the Grassland Act.

79. Tui geng huan lin tiao li [Regulations on Restoring Farmland to Forest] (promulgated by the St. Council, Dec. 6, 2002, effective Jan. 20, 2003) art. 13 (P.R.C.).

80. *Id.* ch. 2.

81. *Id.* art. 24.



these contract issues, together with monitoring and evaluation requirements are set by the Regulations. It should be noted that information disclosure is required during the process, including information on the scope of the project, tree species for afforestation, survival rate, and the details about the usage of funds and allocation of subsidies.<sup>82</sup> With regard to incentives, farmers can receive subsidies in the form of grain and money and can enjoy tax reduction or exemption.<sup>83</sup> And local governments that participate in the project can receive subsidies for the decrease in agriculture tax revenue due to natural disasters.<sup>84</sup>

In addition, local governments should also enhance agricultural infrastructure, increase investment, ameliorate soil, and improve land fertility, so that yield can be increased to meet the local demands for grain in the long run.<sup>85</sup> Moreover, governments shall strengthen the rural energy supply by developing biogas, small-scaled hydropower, solar energy, and wind energy, etc.<sup>86</sup> Also, rural industrial structures should be adjusted to increase incomes and promote economic development in the region.<sup>87</sup> This provision, however, falls short of dealing with sustainability of the development, which could lead to new environmental threats. In addition, ecological immigration is recognized as a possible result of the project, and subsidies should be provided to the immigrants.<sup>88</sup>

The Three-Norths Shelterbelt Program was launched in 1978 and aims to control desertification in north China (the Three-Norths means northwest, north-central, and northeast China) via a large-scale, long-term afforestation drive to create a protective forest belt.<sup>89</sup> It involves payments to individuals or communities for afforestation work, as well as some agroforestry activities.<sup>90</sup> National investment is the primary source of funding, while other social investments, donations, and international cooperation are also encouraged. Besides direct monetary payment, tax benefits and credit support are provided as well.<sup>91</sup> Moreover, some local anti-desertification PES projects are carried out to complement other national projects, such as the Beijing-Tianjin Sandstorm Source Control Program.<sup>92</sup>

#### d. PES Relevant to Natural Reserve/ Biodiversity

The creation of natural reserves is crucial to biodiversity conservation, and economic incentives have been introduced to support habitats and ecosystems. Currently, the development of eco-compensation for natural reserves has lagged behind PES practices in other areas. Consid-

ering the lack of legal support and the fledgling practices on PES in this area, there is an urgent need to accelerate the development of eco-compensation for natural reserves in China.<sup>93</sup>

Although China has enacted the Wildlife Protection Act and Regulations on Natural Reserves, there is no clear policy on eco-compensation for biodiversity. Relevant practices at the local level contribute to the promulgation of some lower level regulations, but difficulties still exist on developing a rule or policy that is applicable to the whole nation.<sup>94</sup>

Most natural reserves in China are struggling with insufficient funding.<sup>95</sup> PES schemes could provide an additional avenue to improve investment and diversify funding sources. Current initiatives in this area still show a reliance on government funding. For example, eco-compensation for natural reserves in Fujian Province depends on eco-compensation funds earmarked by central and provincial government and compensation fees paid by those impairing or destroying biodiversity and habitats, as well as by those benefiting from biodiversity conservation.<sup>96</sup> Meanwhile, attempts to seek financial support from international organizations, NGOs, and other projects should not be overlooked, such as the Lashihai PES Project referred to earlier, that also targets maintaining biodiversity in the Lashihai Natural Reserve.<sup>97</sup> Although the Chinese government is exploring a standard evaluation system to measure the conservation costs,<sup>98</sup> the problems of underestimating and underfunding means that there is a high risk that the government may not be able to provide enough incentives to improve the situation.

Another vital issue is how to compensate. Cash, in-kind payments, and preferential policies all sound constructive and attractive.<sup>99</sup> But realizing the goals of poverty alleviation and shifting the structure of local economies requires significant adjustment tailored to local conditions and likely requires strong support outside the PES project itself. Moreover, the low efficiency of natural reserve management in China could have negative impacts on the process.

#### D. Features of PES in China

Based on the above experiences, the following key features of PES in China can be identified:

82. *Id.* art. 46.

83. *Id.* ch. 4.

84. *Id.* art. 49.

85. *Id.* art. 51.

86. *Id.* art. 52.

87. *Id.* art. 53.

88. *Id.* art. 54.

89. BENNETT, *supra* note 2, at 41.

90. BENNETT, *supra* note 2, at 35.

91. BENNETT, *supra* note 2, at 42.

92. BENNETT, *supra* note 2, at 42-3.

93. Zhonghua Renmin Gongheguo huan jing bao hu bu [Ministry of Environmental Protection of the People's Republic of China], *supra* note 5.

94. *Id.*

95. Nian shou rub u zu liang yi yuan, zhongguo zi ran bao hu qu pu bian "jiong po" [Less Than RMB 20 Million Annual Investment: Most Natural Reserves in China Facing Money Problem] (2006), [http://www.china.com.cn/news/txt/2006-11/14/content\\_7355515.htm](http://www.china.com.cn/news/txt/2006-11/14/content_7355515.htm).

96. Chen Chuanming et al., Fu jian sheng zi ran bao hu qu sheng tai bu chang ji zhi chu tan [Study on Eco-Compensation for Natural Reserves in Fujian Province] (2010) 1 Heilongjiang nong ye ke xue [Heilongjiang Agricultural Sciences] 52, 53.

97. See §B(2)(b)(i).

98. Zhonghua Renmin Gongheguo huan jing bao hu bu [Ministry of Environmental Protection of the People's Republic of China], *supra* note 5.

99. *See id.*

To begin with, PES in China is mainly driven by government, instead of the market. PES is defined in the strictest and narrowest sense by Wunder, and it is clearly market-based. Such PES projects usually take place on a local level as a voluntary transaction and more likely to be a small-scale scheme,<sup>100</sup> whereas the notion of PES was initially introduced in China as a main feature or component of a countrywide ecosystem policy.<sup>101</sup> Considering the background mentioned at the beginning of this Article, PES projects like the NFPP and the Grain for Green Program were initiated by the central government. Both schemes are renowned for their ambitious goals, massive scales, huge payments, and potentially enormous impacts.<sup>102</sup> Along with the implementation of the projects initiated by the central government, the focus on regional PES projects has been gradually increased, particularly watershed PES. Instead of private entities, however, it is the local governments that are mainly involved in PES projects at this level. Therefore, PES development in China can be characterized as a top-down, government-driven process that is gradually evolving from centralized, large-scale projects to decentralized, smaller scale ones.

In addition, not only does PES in China aim at ecosystem conservation, it is often intended for poverty alleviation. While the western region plays a crucial role in safeguarding China's ecosystems, there is still widespread poverty. To promote sustainability in this region, politicians and scholars have been seeking new instruments that are able to simultaneously increase incomes and conserve the environment. As a result, the potential positive impacts of PES on poverty reduction are encouraged and set as a side objective of PES mechanisms. These dual objectives do make PES more appealing to poverty-stricken areas, although they remain difficult to realize in practical terms.

In order to maximize the benefits to the poor while at the same time securing the environment conservation target, care should be taken in the design phase with respect to such things as the scale of project, duration, participation by the poor, and mode of payment. Without proper design and implementation, PES might well have adverse impacts on poverty reduction, as is the case with some of the current projects.

In many poverty stricken areas, it is very hard to find a suitable way to develop sustainably due to geographical limits, poor infrastructure, and the lack of expertise and necessary skills, etc. Even if these impediments did not exist, economic restructuring often takes a relatively long time, and the precise role PES can play during this process is a challenging issue. Nonetheless, it is argued that even though PES alone may not be able to break the vicious

circle of poverty, it could at least provide additional opportunities to deal with it.

Before exploring the potential of PES on poverty alleviation, however, it should be acknowledged that although poverty is certainly an obstacle to sustainable development and it is commendable for combining environmental protection with poverty concerns, *ecosystem conservation is still the main objective of PES*. This must be kept in mind to avoid a tendency to rely too heavily on PES to tackle poverty issues.

Lastly, since PES is predominantly driven by government in China, payments are usually made through fiscal transfers and based on taxes and subsidies.<sup>103</sup> Aside from cash, in-kind payments of technical and training support are also common. Moreover, incentives are also set in the form of policies, which can facilitate sustainable development in a macro sense. The detailed payment structure needs to be tailored in specific contexts. With regard to the cash and non-cash payments, an ancient Chinese proverb states: "Give a man a fish and you will feed him for a day. Teach a man to fish and you will feed him for a lifetime."

Although the teaching-to-fish strategy seems ideal, it is difficult to make it work in practice.<sup>104</sup> But it is worth mentioning that governments are making efforts at exploring more sustainable ways to lift local people out of poverty, such as ecotourism and ecoagriculture. Despite the right motivation, however, many public PES projects in China fall short of generating sufficient incentives. But it is doubtful that such PES could really foster sustainable development in the long run. The reliance on government does not mean that public PES can succeed without adhering to fundamental market discipline. As an economic mechanism, incentives are at the very core of PES.<sup>105</sup> Therefore, it is crucial for those responsible for designing PES in China to explore a proper payment structure and to ensure the stability and diversity of funding sources.

## II. Major Problems and Solutions

An analysis of the strengths and deficiencies of public PES projects that are primarily government-driven will provide some insight on how to improve the effectiveness of PES in China.

### A. Public PES: Pros and Cons

As noted earlier, the PES development in China is a top-down government-driven process that is gradually evolving from centralized, large-scale projects to decentralized smaller scale ones. It is the government that is playing the pivotal role in both initiating and encouraging PES. The dominance of public PES can be explained as follows:

100. See INA PORRAS ET AL., ALL THAT GLITTERS: A REVIEW OF PAYMENTS FOR WATERSHED SERVICES IN DEVELOPING COUNTRIES 23 (2008), <http://pubs.iied.org/pdfs/13542IIED.pdf>.

101. See PAYMENTS FOR ECOSYSTEM SERVICES: LEGAL AND INSTITUTIONAL FRAMEWORKS, *supra* note 1, at 7.

102. Liu Jianguo et al., *Ecological and Socioeconomic Effects of China's Policies for Ecosystem Services* (2008) 28 PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA 9477, 9477.

103. Zhongguo huan jing yu fa zhan guo ji he zuo wei yuan hui [China Council for International Cooperation on Environment and Development], *supra* note 32.

104. WUNDER, *supra* note 14, at 20.

105. *Id.* at 7.

Firstly, the Chinese government traditionally plays a prominent role in resolving transboundary environmental issues. For example, governmental coordination, mediation, and conciliation, rather than through any judicial adjudication, is the primary approach of settling transboundary water disputes.<sup>106</sup> Under these circumstances, government-driven PES appears more synchronized with the existing legal and institutional frameworks. In addition, given the fact that most ES are public goods and state-owned in China, the government involvement in PES is almost inevitable. Moreover, the investment climate for private PES so far is not well-developed. The transformation of China from a rule by law state to one governed by the rule of law is still underway in China, and the deficiencies in legislation and legal practices increase the risks for private sectors to participate in self-organized PES.

Without sufficient legal support, it is much more difficult to establish trust in a private PES scheme in China. In contrast, the government's credibility could offer more certainty and reliability to public PES. Furthermore, private-sector participants often lack the necessary knowledge and internal capacity to effectively plan and manage PES.<sup>107</sup> Finally, PES in China is functioning in a more macro sense, often in support of the countrywide or sub-regional ecosystem policy and is further complicated by concerns with respect to poverty alleviation and balancing economic development in the East and West. Since private PES cannot fully support all these functions, governments are required to take the initiative to develop PES.

This government-driven feature could bring new strength to the development of PES, but in practice, it also gives rise to some fundamental difficulties and challenges, two of which will be highlighted here. On the one hand, PES as an economic mechanism is designed to complement the traditional command-and-control approach to environmental protection and conservation. In many cases, however, the PES in China is itself functioning in a command-and-control manner. Reliance on the existing administrative system often undermines the efficiency and effectiveness of PES. The problematic river basin management framework in China has long been criticized on the basis of fragmentation, poor coordination among governments, and uneven performance of regulatory agencies and resource sectors,<sup>108</sup> and management of forest and natural reserves has also been criticized for poor efficiency due to institutional problems, lack of training, and underfunding. Hence, the public PES programs in China often suffer from bureaucracies and high transaction costs, especially in the case of large centralized projects.

On the other hand, public PES is more likely to have difficulty generating enough incentives. PES projects are

often initiated as a response to the countrywide or sub-regional ecosystem policies. During both the design and implementation process, the ES providers often fail to effectively negotiate to ensure adequate benefits and to protect their interests. Furthermore, as pressure mounts on governments to curtail spending and cut budget deficits, their ability to invest adequately in PES is called into question. In fact, the Chinese government has long been criticized for the lack of proper funding for PES projects involving natural reserves, forests, and other environmental conservation areas. Hence, there is a high risk that the "compensation" provided under the PES project would not be enough to effectively engage the ES providers in ecosystem conservation or to generate sufficient momentum to maintain and increase environmental friendly behavior over the long term.

For example, although the Grain for Green Project has accomplished notable positive outcomes in terms of environment conservation,<sup>109</sup> it is argued that the fiscal transfer made by the central government is neither sufficient nor certain in practice and fails to cover the relevant costs and revenue losses of local governments that participate in the project, and further exacerbates the financial pressure on them<sup>110</sup> and does not provide enough compensation for the farmers involved. The national compensation standard is not flexible enough to cope with local living standard variations and in many circumstances, the compensation does not allow the farmers to break even.<sup>111</sup> It should also be noted that a long-term mechanism for securing farmers' livelihoods has not yet been established.<sup>112</sup> Whether this project could contribute to poverty alleviation or at the very least maintain the local revenue and living standard is questionable, which leads to serious concerns about the sustainability of the project. Similar and in some cases more serious problems are also prevalent in many other public PES programs in China.

## B. Recommendations for Improvement

In light of the current PES practice and relevant legal and institutional frameworks in China, it seems certain that government will continue to be heavily involved in the PES schemes.<sup>113</sup> Under such circumstances, the following key areas need to be addressed to increase the efficiency and effectiveness of PES.

106. KE JIAN, RELIEF FOR VICTIMS OF ENVIRONMENTAL POLLUTION IN THE CONTEXT OF TRANS-BOUNDARY WATER MANAGEMENT IN CHINA 14 (2009).

107. SARA J. SCHERR ET AL., *supra* note 16, at 52.

108. Transboundary river basin management often involves numerous local governments along the river and is further complicated by uneven performance among regulatory agencies and sectors, such as environment, irrigation, forests, health and sanitation, land use and land planning, mining, and energy.

109. According to the statistics from the Grain for Green Project Management Office, 27.66 million hectares of cropland and wasteland have been turned back into forest in China from 1999 to 2009. See <http://gb.cri.cn/27824/2010/08/18/110s2959410.htm>.

110. Liu Yan & Zhou Qingxing, Tui geng huan lin zheng ce de ji li ji zhi que xian [The Incentive Mechanism Deficiencies of the Grain for Green Policy] 15(5) Zhongguo ren kou zi yuan yu huan jing [China Population, Resources and Environment] 104, 105 (2005).

111. *Id.* at 105-06.

112. The State Council of the PRC, Guo wu yuan guan yu wan shan tui geng huan lin zheng ce de tong zhi [The Notification of the State Council on Improving the Grain for Green Policy] (2007), [http://www.gov.cn/zwggk/2007-08/14/content\\_716617.htm](http://www.gov.cn/zwggk/2007-08/14/content_716617.htm).

113. ALESSANDRA SGOBBI ET AL., *supra* note 60, at 11.



## I. Institutional Support

Public PES relies on administrative agencies to operate. Therefore, it is important for the government to enhance administrative efficiency, to better rationalize relevant administrative structures to reduce overlapping administrative purview,<sup>114</sup> and to promote cooperation and coordination among different agencies. This is especially true with regard to watershed PES, which often involves cooperation among local governments along the river and coordination among different sectors, such as environment, irrigation, forests, health and sanitation, land use and land planning, mining, and energy.<sup>115</sup> Other public PES projects often fall under control of several departments as well. However, the refinement of the administrative structure is a long process and relies on some profound changes of the legal and institutional frameworks in China. It is recognized that the PES system in China will still have to function in the face of numerous structural restrictions in the near future.

To mitigate negative impacts, multijurisdictional and multisectoral dialogue needs to be encouraged and strengthened, both through formal platforms as well as informal channels, so as to facilitate the pooling of resources and expertise, the coordination of effort, and the sharing of responsibility.<sup>116</sup> So far, mechanisms like joint conference, information-sharing, and administrative coordination as a form of alternative dispute resolution have been introduced in the context of transboundary river basin management, and some coordinating agencies are established. Despite the incipient nature of those arrangements, developments in this area could set the stage for better design and implementation of PES.

Moreover, PES itself could also serve as a useful platform to foster better cooperation and coordination among governments and agencies. In practice, some institutions are developed to facilitate the implementation of PES projects, such as the Grain for Green Project Management Office and the Office of Prevention and Control of Desertification. On a smaller scale, the Jiulong River and Min River Watershed PES Projects promote the development of the joint conference mechanism on river basin management in Fujian Province and the Environmental Protection Committee founded at the provincial level. Corresponding agencies are established at the municipal level as well.<sup>117</sup> Furthermore, it is proposed that the Ecological Resources Management Committee, with the task to coordinate and oversee conservation affairs in the Lashihai Nature Reserve, be established to ensure that extension services reach local farmers, that funds and fees are collected, and compensation properly disbursed.<sup>118</sup>

More clearly demarcated responsibilities and well-developed platforms for multijurisdictional and multisec-

toral cooperation could profoundly benefit public PES. Although improvement in this area is a gradual process, more effort needs to be directed to these areas of reform.

## 2. Centralization Versus Decentralization

So far, the management of PES projects and corresponding activities in China are still highly centralized. Most projects on forest conservation, soil erosion prevention, and anti-desertification are initiated by the central government.

The national government is both the designer and central manager of centralized PES. Projects like the Grain for Green Project, the Three-Norths Shelterbelt Program, and the Natural Forest Protection Program are all initiated in response to national priorities and countrywide policy. Given the serious environment problems facing China and the economic imbalance between the East and West, it is necessary for the central government to take some measures in a holistic way. These projects cover a large geographical area and involve a great number of local governments, individuals, and community-based organizations. For large-scale projects like this, it seems unavoidable that the central government will play a prominent role in the process. Otherwise, it would be very difficult to agree on any common efforts or to perform coordinated movements.

Despite all good intentions, the centralized projects have proved to be problematic in practice. To begin with, the sheer scale of the projects would inevitably raise difficulties in the design stage. It is highly doubtful, if not impossible, that the proposal can be tailored to various local situations. It often fails to consider and respond appropriately to regional and local problems.<sup>119</sup> In practice, there are many examples where the standardized criteria and procedures are not suitable to local circumstances. Moreover, centralized projects often lack the flexibility and sensitivity to react in a timely manner to the problems revealed in implementation. In addition, it is more difficult to collect abundant information or to secure the effective participation of stakeholders in PES project formulation and decisionmaking.<sup>120</sup> On the contrary, decentralized PES could allow local governments to take the initiative to actively work on regional and local environment concerns and could serve as a better platform in the context of stakeholders participation. Local planning, based on local circumstances, will help to identify the best strategies for ES protection and identify where PES schemes can play a useful role relative to other solutions.<sup>121</sup>

Interestingly, watershed PES practices in China have been more decentralized from the beginning. Due to the controversial nature of transboundary river issues, the ongoing watershed PES programs all happen within one province. Obviously, transmunicipal river issues are less complicated than the transprovincial ones. The experiences

114. SARA J. SCHERR ET AL., *supra* note 16, at 58.

115. See PAYMENTS FOR ECOSYSTEM SERVICES: LEGAL AND INSTITUTIONAL FRAMEWORKS, *supra* note 1, at 42.

116. *Id.* at 58, 64.

117. Huang Dongfeng et al., *supra* note 47.

118. ALESSANDRA SGOBBI ET AL., *supra* note 60, at 60.

119. PAYMENTS FOR ECOSYSTEM SERVICES: LEGAL AND INSTITUTIONAL FRAMEWORKS, *supra* note 1, at 42.

120. *Id.* at 42.

121. SARA J. SCHERR ET AL., *supra* note 16, at 58.

also show that decentralized projects often need support from high-level political and administrative institutions. For example, the Fujian Provincial Government plays an important role in the design and implementation of the Jiulong River and Min River Watershed PES Projects, by providing guidance and institutional support, coordinating municipal governments, and contributing to fundraising. Moreover, the Jiangxi Provincial Government, which signed an agreement on the Dong River PES Project with the Guangdong Provincial Government, is also seeking support and coordination from the central government to put the agreement into force.<sup>122</sup>

In conclusion, although central policy often implicitly makes allowances for variations in local interpretation and implementation, greater local consultation and decision-making in environmental initiatives should be explicitly encouraged and accelerated.<sup>123</sup> Regional PES programs could serve as a complement to help reach the goal set by the centralized projects. It is therefore likely that the more decentralized, local initiatives and small-scaled PES projects will comprise the most vibrant area of PES development in China. However, the experience to date on decentralized PES projects also confirm the significance of support from higher levels of government, including the central government. It is also important that the central and provincial governments should not neglect their responsibilities with respect to fostering innovation, linking ES buyers and sellers, enabling the flow of information and expertise, reducing financial risk, and enforcing laws and contracts.<sup>124</sup> There remains, however, a risk that the higher levels of government could take advantage to force the local authorities to accept a PES agreement involuntarily.

### 3. The Participation of Private Actors

As a government-driven process, the development of PES in China has been criticized for too heavily relying on state finances, which has difficulty in providing sustainable and abundant funding due to the lack of enough investment and inadequate funds for environmental protection, including mounting pressure on government to curtail spending and cut budget deficits. Moreover, the failure of generating sufficient incentives can also be attributed to the fact that many PES programs in China are still functioning under command-and-control regulatory measures instead of proceeding on the basis of voluntary market-based transactions. In addition, top-down direction further hinders the active participation of civil society and the private sector.

Although it is argued that the government will continue to be heavily involved in PES,<sup>125</sup> it is suggested that future development in this area should include more market-based arrangements to help identify the needs of PES, better evaluate incentives, diversify funding sources, and

encourage more vibrant local practices and innovations. To ensure progress in this area, it is crucial to engage more of the private sector in the existing and future projects. Studies and experience to date have revealed some potential private buyers of ES, from the agriculture sector, hydropower companies, the construction sector, the food and beverages sector, municipal water users, the pharmaceutical sector, and energy companies.<sup>126</sup>

Private engagement in PES will depend on a variety of factors; however, the following three key reasons are often cited when the private sector is forced to do so by regulation or the pending threat of regulation in the (near) future. PES payments deliver a satisfactory return on their investment, i.e., a business benefit, or payments are made for charity or philanthropic reasons, i.e., donations.<sup>127</sup> Currently, the private sector is more likely to be motivated by the first and third factors, especially when they are under legal requirements to generate offsets. The second driving force, however, is much more difficult to justify in practice. In China, the market for ES is so embryonic that most in the private sector lack the awareness of the role and value of ES to their business, and hesitate to participate in PES due to unclear evidence of financial benefits, the daunting challenges of aggregating buyers to achieve ES at the necessary scale, lack of internal capacity to plan and manage PES, and lack of clear, publicly endorsed mechanisms for PES.<sup>128</sup>

In order to encourage the participation of the private sector, efforts should be made to reduce investment risk by creating a more favorable investment climate through introducing or strengthening regulations, fixing problems with current regulatory policies, stricter enforcement of environmental laws, more secure tenure rights and water use rights, qualifying risks and benefits, reinforced monitoring and ecosystem performance evaluation,<sup>129</sup> and increasing the transparency of fund administration. Moreover, strategies like providing cost-reduction opportunities for investing in ES rather than later cleanups, including PES as part of deals structured with local communities, i.e., requirements could be included in the relevant permitting process, and offering lower interest rates or easier access to loans for companies that invest in ES will serve to provide the necessary catalyst to private sector engagement in PES.<sup>130</sup> Meanwhile, since buyers are not monolithic and each industry and/or type of ES is different in terms of the barriers and motivations for its particular market actors, it is necessary to conduct sector-specific analyses to understand buyer needs across industries.<sup>131</sup>

122. See *supra* note 61.

123. SARA J. SCHERR ET AL., *supra* note 16, at 64.

124. *Id.* at 60.

125. ALESSANDRA SGOBBI ET AL., *supra* note 60, at 11.

126. SARA J. SCHERR ET AL., *supra* note 16, at 53.

127. IVO MULDER ET AL., PRIVATE SECTOR DEMAND IN MARKETS FOR ECOSYSTEM SERVICES: PRELIMINARY FINDINGS 2 (2006). The report is adapted from the full report submitted to the UNDP-GEF project: Institutionalizing Payments for Ecosystem Services—Supplement IV Mobilizing Private Sector Buyers of Ecosystem Services.

128. SARA J. SCHERR ET AL., *supra* note 16, at 33.

129. *Id.* at 52.

130. *Id.* at 52-53.

131. *Id.* at 53.

Government will be required to play a constructive support role in creating and maintaining an enabling environment for private actors' transactions.<sup>132</sup> As a means to encourage participation from the private sector, the government must proactively promote an incremental transition from fully public to public-private partnerships and private initiatives in a way that make sense in the Chinese context.<sup>133</sup> But we should bear in mind that private sector involvement cannot alone shoulder the burden of conservation; it is the government that should play a prominent role in the protection of public goods, such as habitat conservation and watershed protection.<sup>134</sup>

#### 4. Procedural Requirements

In order to improve the effectiveness of PES, attention should also be paid to procedural justice, especially the requirements on access to information and public participation. As a means to foster transparency and engage civil society, these procedure rules could contribute to more rational, transparent, and informed PES decision-making. Moreover, they could give the ES providers more strength to actively claim and secure their benefits and interests, especially under public PES projects. In addition, a transparent and democratic PES process could attract more participation of the private sector. More importantly, through easy access to information and effective public engagement, trust and understanding can become better established and maintained among stakeholders, which is fundamental to the long-term success and sustainability of PES programs.<sup>135</sup>

The right of access to information, as a prerequisite of public participation, has been left out of legislation in China for a long time. A breakthrough finally took place in 2008, when the Regulations on Government Information Disclosure were released to enhance the public's right of access to information and to increase information transparency.<sup>136</sup> Government is obligated to actively disseminate certain information and to provide accessible information when requested by the public.<sup>137</sup> As required by the regulation, information concerns vital interests of citizens, legal persons, or other organizations, and information that needs to be known by the public or requires further public participation shall be actively disseminated.<sup>138</sup> More specifically, information on national/regional planning and relevant policies, poverty alleviation policies and measures, and the title, cause, and criterion of administrative fees are highlighted as parts of the key areas of information disclo-

sure.<sup>139</sup> The regulation also provides some remedies ranging from administrative measures to judicial remedies.<sup>140</sup> But the provision on judicial remedies is quite general. By the end of 2009, the Supreme Court of China openly sought advice on a detailed judicial interpretation with regard to providing judicial remedies for the right of access to information.<sup>141</sup> This was considered a significant milestone in the area of public disclosure.

The implementation of the regulation, however, is far from satisfactory. The Report on Chinese Administration Transparency 2009, done by the Centre for Public Participation Studies and Supports of Peking University, concludes that based on the marking system developed by the Centre, less than one-half of the provincial governments scored more than 60% in implementation. And the compliance situation is quite imbalanced across the country.<sup>142</sup>

In particular, the access to information during a PES process needs to be further enhanced. On the brighter side, some centralized projects utilize websites to post and share information, such as the Grain for Green Project and the Three-Norths Shelterbelt Program.<sup>143</sup> This is quite commendable in terms of information exchange among governments and information dissemination for the general public, but whether such modes of information disclosure will reach millions of participants in the rural area is doubtful. Moreover, the amount of information is quite massive due to the large scale of the centralized projects, which increase the difficulties with respect to effective information disclosure. More localized arrangements on information dissemination should be instituted in the future. In addition, the content of information should shift the focus from what has been already done to detailed information on how to implement the project, such as what kinds of trees will be used for restoration, who is entitled to compensation, how to distribute compensation, and the utilization of project funds. It is notable that the Regulations on Restoring Farmland to Forest have explicitly required the villages and towns that are subject to the project to establish public notification systems to disclose information on the scope of the project, tree species for afforestation, survival rates, and the details about the utilization of funds and allocation of subsidies.<sup>144</sup> However, compliance with this provision needs further improvement.

With regard to more decentralized projects, however, the mechanisms for access to information seem to be neglected in many cases, especially those involving cost-sharing and financing among governments. More often than not, atten-

132. ALESSANDRA SGOBBI ET AL., *supra* note 60, at 11.

133. SARA J. SCHERR ET AL., *supra* note 16, at 63.

134. *Id.* at 49.

135. PAYMENTS FOR ECOSYSTEM SERVICES: LEGAL AND INSTITUTIONAL FRAMEWORKS, *supra* note 1, at 5, 64.

136. Zheng fu xin xi gong kai tiao li [The Regulations on Government Information Disclosure] (promulgated by the St. Council, Jan. 1, 2007, effective May 1, 2008) art. 1 (P.R.C.).

137. *Id.* art. 9-13.

138. *Id.* art. 9.

139. *Id.* art. 10.

140. *Id.* arts. 29-35.

141. The full text is available from <http://www.chinacourt.org/public/detail.php?id=379436>.

142. CENTRE FOR PUBLIC PARTICIPATION STUDIES AND SUPPORTS, THE REPORT ON CHINESE ADMINISTRATION TRANSPARENCY 2009 (ABSTRACT), [http://www.cppss.cn/news\\_body.asp?id=808](http://www.cppss.cn/news_body.asp?id=808) (last visited Jan. 30, 2011).

143. The websites are (in Chinese): <http://tghl.forestry.gov.cn/> (the Grain for Green Project), <http://www.tnforestry.cn/> (the Three-Norths Shelterbelt Program).

144. Tui geng huan lin tiao li [Regulations on Restoring Farmland to Forest] (promulgated by the St. Council, Dec. 6, 2002, effective Jan. 20, 2003) art. 46 (P.R.C.).



tion will not be paid to information disclosure during the design and implementation stages of the projects. Hence, the transparency of projects, especially the utilization of funds, is still relatively opaque. Limited information can be found regarding to the implementation of decentralized watershed PES projects mentioned above. This situation could profoundly affect trust among stakeholders and adversely affect the engagement of the private sector.

Public participation, on the other hand, ensures that relevant stakeholders are involved and offers them the opportunity to participate in decisionmaking in a meaningful way.<sup>145</sup> In particular, the effective engagement of stakeholders from poor areas could certainly contribute to the design of the project to better protect their interests. Broad participation provides those making decisions with important information about the needs and concerns of relevant stakeholders and may also introduce new and creative ideas for program design.<sup>146</sup>

Before analyzing public participation in PES, it is prudent to consider how it is currently applied in China. So far, public participation has been tolerated in areas like law/regulation-making, administrative decisionmaking, environment impact assessment, etc. Although it is in the process of development, public participation is still quite immature in China. According to the model known as Arnstein's Ladder, which shows the spectrum of participation opportunities, participation could range from mere notification to consultation and even joint decisionmaking power.<sup>147</sup> In China, notification, questionnaires, and stakeholder meetings are the most frequently used participatory tools. Yet, in many cases they are treated as a mere formality and do not have a real impact on decisionmaking. It is quite difficult to move participation beyond mere consultation into a real functional and interactive mechanism. In addition, public participation in China is once again a top-down process. It is often initiated by government, instead of by the public themselves. The public awareness on environmental issues still needs to be further improved, and there is a long way to go to change the inherently passive participation nature of the Chinese people.

Public participation is even less-developed with respect to PES. It was not applied during the design of many centralized projects. Then, although there were some studies on engaging the public during the implementation of these projects,<sup>148</sup> formal arrangements have not been made in practice. By and large, experience at the local level confirms a failure to embrace public participation as well. An exception was the Lashihai Watershed PES Project (not yet being implemented) that did try to engage the public in the design process. Primarily driven by international

organizations and expertise, questionnaires were used to collect information on visitors' preferences with respect to the quality of their experience in either the old tourist city of Lijiang or the Lashihai Nature Reserve, and to assign an economic value to the identified ES.<sup>149</sup> Yet participation at this level is still quite simple and unsophisticated, and farmers, as the ES providers, were not involved in the process.

The following recommendations are suggested in order to improve the access to information and public participation in PES in China:

To begin with, it is suggested that future regulations on eco-compensation should include some general provisions on access to information and public participation to at least provide some legal certainty and guidance in this area.

It is recommended that proposed projects be planned on a smaller and more manageable scale, where it will be easier and more cost-effective to achieve appropriate transparency and effective participation.<sup>150</sup> For the existing centralized projects, more localized arrangements should be made to disseminate information, and more flexibility at the local level should be allowed during the implementation to facilitate the participation process.

Thirdly, suitable platforms should be explored for information dissemination and for the public to express their opinions. This can be further combined with the arrangements made for multijurisdictional and multisectoral cooperation among governments, such as the well-established mechanism of joint conference.

Moreover, in order to give the public an effective voice during the PES process, it is necessary to enhance participation capacity. This may not only involve awareness raising, confidence building, and education, but also the provision of economic resources needed to facilitate participation and the establishment of good and transparent sources of information. It has to be recognized that simply creating participatory opportunities will do nothing for the public, especially the poor, unless their capacity to participate is enhanced.<sup>151</sup> The significance of NGOs should also be recognized. The growth of environmental NGOs is currently the largest sector of China's civil society.<sup>152</sup> They could serve as an effective watchdog, and their social resources are quite valuable. With proper PES training, especially to those who already working closely with local communities, NGOs could help collect and disseminate information more effectively and raise the voice of the vulnerable groups during the PES process.

Last but not least, the effectiveness of information disclosure and public participation during a PES process still relies on an overall improvement toward a more democratic atmosphere and a more transparent and open government,

145. PAYMENTS FOR ECOSYSTEM SERVICES: LEGAL AND INSTITUTIONAL FRAMEWORKS, *supra* note 1, at 64.

146. *Id.*

147. Sherry R. Arnstein, *A Ladder of Citizen Participation* 35(4) J. AM. INST. PLANNERS 216 (1969).

148. See Liu Yongqing & Zhang Meilan, *Tui geng huan lin gong cheng zhong gong zhong can yu jian du guan li de zuo yong tan xi* [Public Participation in the Grain for Green Project] (2008) 13 *Xian dai nong ye ke ji* [Modern Agricultural Technology] 349.

149. ALESSANDRA SGOBBI ET AL., *supra* note 60, at 28.

150. PAYMENTS FOR ECOSYSTEM SERVICES: LEGAL AND INSTITUTIONAL FRAMEWORKS, *supra* note 1, at 66.

151. GLOBAL WATER PARTNERSHIP (GWP) TECHNICAL ADVISORY COMMITTEE (TAC), INTEGRATED WATER RESOURCES MANAGEMENT, [www.gwpcacena.net/en/pdf/tec04.pdf](http://www.gwpcacena.net/en/pdf/tec04.pdf) (last visited Dec. 2, 2011).

152. KE JIAN, *supra* note 106, at 37.

especially a strong, transparent, and participative local governance structure. To this end, the ongoing rural election reforms have the potential to better protect the democratic rights of farmers and promote village democracy,<sup>153</sup> which could cultivate more active and bottom-up participation.

### III. Concluding Remarks

In light of China's severe environmental problems and the huge economic imbalance between the East and West, the strong need for sustainability and environmental justice requires the adoption of PES processes and principles. Although it was initially designed as a voluntary market-oriented mechanism, PES development in China became a top-down government-driven process that is gradually evolving from centralized large-scale projects to decentralized smaller scale ones. Aside from the main objective of ecosystem conservation, poverty alleviation is often an additional important objective to be considered.

PES is often referred to as eco-compensation in China, which in turn leads to some confusion in terminology. In a narrow sense, eco-compensation can be used as a synonym of PES.<sup>154</sup> In a broad sense, however, it is a mixture of economic instruments and arrangements that share a common goal on ecosystem conservation. Other than PES, which is based on the beneficiary pays principle, it also incorporates the polluter-pays principle and destroyer pays principle.

The provision and protection of watershed ecosystem services is by far the biggest driver of eco-compensation policy in China, and is where most local innovations are occurring.<sup>155</sup> PES in China, however, also targets forest conservation, biodiversity conservation, soil erosion prevention, and the prevention of desertification.

Various lessons can be drawn from this country's experience to date. Considering China's unique legal and institutional frameworks, it seems that government will continue to be heavily involved in the PES schemes.<sup>156</sup> Although there are many practical reasons and merits in the government playing a significant role, it must at the same time be recognized that public PES in China is also suffering from poor design, bureaucracies, high transaction costs, lack of proper incentives, and financial unsustainability.

With regard to future development in this area, recommendations are suggested in four particular areas: (i) the need to enhance administrative efficiency and promote multijurisdictional/sectoral cooperation and coordination; (ii) the need to promote and develop more decentralized local initiatives and small-scale PES; (iii) the need to cultivate a more favorable investment environment to attract greater participation of private actors; and (iv) to encourage and support initiatives and legislation to ensure access to information and public participation leading to more rational, transparent, and informed PES decisionmaking.

Incentives are at the very core of PES,<sup>157</sup> and the reliance on government does not mean that public PES can succeed without adhering to fundamental market principles and discipline. In the case of China, it is not only crucial to achieving environmental goals, but also important in terms of contributing to local livelihoods. Although PES alone may not be able to break the vicious circle of poverty, it could at least give more strength and opportunities to deal with it.

Policymakers should encourage more pilot projects in this area. Through the long process of trial and error, a wealth of local and national experience is created upon which to build capacity and a more promising future for PES in China.

153. See SARA J. SCHERR ET AL., *supra* note 16, at 60.

154. Zhongguo huan jing yu fa zhan guo ji he zuo wei yuan hui [China Council for International Cooperation on Environment and Development], *supra* note 32.

155. BENNETT, *supra* note 2, at 7.

156. ALESSANDRA SGOBBI ET AL., *supra* note 60, at 11.

157. WUNDER, *supra* note 14, at 7.