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## **Beneficiary Pays: Forging Reciprocal Connections between Private Profit and Public Good in Hydraulic Reform in the Lower Yangzi Delta, 1520s-1640s**

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### **Abstract**

This article focuses on the “beneficiary-pays principle” in hydraulic discourse and the process through which it was put into practice from the 1520s to the 1640s in the Lower Yangzi Delta. It investigates the roles of the hydraulic reformist elite and like-minded officials in the formation of the new hydraulic order. It also demonstrates that the implementation of the beneficiary-pays principle was instrumental in redefining the division of responsibility between the government and the people and in building a reciprocal connection between the pursuit of private gain and the fulfillment of the public good. Furthermore, it shows that after the general application of this principle became a shared view, the government and the people used it to solve disputes and defend their rights. This article concludes that the new order was not achieved solely by coercion – policy deliberation and persuasion were also significant in the realization of the beneficiary-pays principle.

### **Résumé**

Cet article s'intéresse au principe suivant lequel les travaux doivent être “à charge du bénéficiaire” dans le discours hydraulique et à la manière dont il a été mis en pratique dans le bas Yangzi des années 1520 aux années 1640. Le rôle de l'élite réformiste et des

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fonctionnaires partageant les mêmes idées dans le domaine de l'hydraulique est examiné. L'article démontre que la mise en œuvre du principe en question a été importante pour la redéfinition du partage des responsabilités entre le gouvernement et la population et pour la mise en place d'une relation de réciprocité entre la poursuite des intérêts privés et celle du bien public. Il montre aussi qu'une fois acceptée par tous, l'application généralisée du principe a servi au gouvernement et aux particuliers à résoudre leurs conflits et à défendre leurs droits. En conclusion, l'ordre nouveau ainsi mis en place n'a pas été le résultat de la seule contrainte: le débat et la persuasion ont tenu une place significative dans la réalisation du principe "à charge du bénéficiaire".

### Keywords

beneficiary pays, hydraulic reform, Jiangnan, Lower Yangzi Delta, Ming dynasty, private profit, public good

While I was doing research on hydraulic reform in the Lower Yangzi Delta from the early sixteenth to the early seventeenth century, a Chinese term—*de li* 得利, "making profit"—constantly turned up in the sources. I realized later that it was used in a context that had three distinct features: (1) "profit" meant the benefit one could reap from hydraulic work; (2) this profit was usually understood in terms of one's own landed property; and (3) the concept of profit was employed in the discourse and in policy in order to allot responsibility for hydraulic work. I eventually came to the conclusion that the notion of *de li* in the context of hydraulic reform can be best described as the "beneficiary-pays" principle. It was adopted first by reformist members of the elite and later by like-minded officials as a key concept to determine the landlords' responsibility in proportion to the profit they could gain from water management: they were regarded as the beneficiaries of hydraulic works and were therefore required to shoulder the burden in the form of labor service or money payment. The present essay attempts to analyze in detail the emergence of the beneficiary-pays principle in hydraulic discourse and the process through which it was gradually put into practice during the mid- to late Ming.

As we shall see, the emergence and implementation of the beneficiary-pays principle was not a linear process. Negotiation and compromise were necessary to overcome the obstacles encountered by the reformists. One of the major obstacles was resistance from the local elite, both gentry and non-gentry landlords. As scholarship on *corvée*

reform in the mid- and late Ming has demonstrated, gentry and non-gentry landlords tended to maximize their private gain by evading their responsibility for labor service.<sup>1</sup> Thus, Hamashima Atsutoshi has provided a succinct narrative where he emphasizes the impact of absentee landownership on hydraulic maintenance beginning in the early sixteenth century, as landlords lost their interest in water management after they began moving from rural areas to cities and towns. Gentry exemption privileges made the situation worse by eroding the basis on which the government conscripted labor service.<sup>2</sup> Mark Elvin's earlier work also attributed the landlords' disengagement from public works like irrigation maintenance systems to their move to the towns.<sup>3</sup> These studies convincingly connect a change of social base—residence moving from countryside to towns and cities—with a change of attitude.

Still earlier, Miyazaki Ichisada's insightful study of Suzhou and Songjiang *shidafu* 士大夫, first published in 1954, offered an alternative perspective on the relationship between social base and attitude. The *shidafu* Miyazaki discussed resided in towns and cities, but he made a distinction among them between gentry-officials (*xianghuan* 鄉宦) and civilian "recluses" (*shiyin* 市隱).<sup>4</sup> According to Mori Masao, Miyazaki's distinction was made using two criteria: "whether they were officials or not," and "how much they were concerned with the interests of local society or the life of the people." Civilian recluses, who cared about the welfare of the people and thus had a certain "spiritual tie" with them, were the

<sup>1</sup> For example, Liang Fangzhong 梁方仲, *Mingdai liangzhang zhidu* 明代糧長制度 (Shanghai: Shanghai renmin chubanshe, 1957); Wu Dan'ge 伍丹戈, *Mingdai tudi zhidu he fuyi zhidu de fazhan* 明代土地制度和賦役制度的發展 (Fuzhou: Fujian renmin chubanshe, 1982); Tang Wenji 唐文基, *Mingdai fuyi zhidu shi* 明代賦役制度史 (Beijing: Zhongguo shehui kexue chubanshe, 1991). Regarding the same issue in the context of the decline of water management in the Ming, see Hamashima Atsutoshi 濱島敦俊, *Mindai Kōnan nōson shakai no kenkyū* 明代江南農村社會の研究 (Tokyo: Tōkyō daigaku shuppankai, 1982); Kawakatsu Mamoru 川勝守, *Chūgoku hōken kokka no shihai kōzō: Min Shin fueki seidoshi no kenkyū* 中国封建国家の支配構造——明清賦役制度史の研究 (Tokyo: Tōkyō daigaku shuppankai, 1980).

<sup>2</sup> Hamashima Atsutoshi, "The Organization of Water Control in the Kiangnan Delta in the Ming Period," *Acta Asiatica* 38 (1980): 69-92.

<sup>3</sup> Mark Elvin, *The Pattern of the Chinese Past* (Stanford: Stanford Univ. Press, 1973), 260-67.

<sup>4</sup> Miyazaki Ichisada 宮崎市定, "Mindai So-Shō chihō no shitafu to minshū" 明代蘇松地方の士大夫と民衆 (1954), in *Miyazaki Ichisada zenshū* 宮崎市定全集 (Tokyo: Iwanami shoten, 1992), v. 13, 3-39.

wielders of local criticism and local opinion. In other words, even if gentry-officials and civilian recluses shared the same social base, they could disagree because of their social status and their attitude toward “common interest” and the public good.<sup>5</sup> Miyazaki’s opposition between the attitudes of gentry-officials and civilian recluses may seem too rigid to be accepted without qualification,<sup>6</sup> but his emphasis on the heterogeneity of the local elite still deserves serious attention.

Recent work by Joanna Handlin Smith offers a revision of Miyazaki’s argument on two points. First, she persuasively shows that charity was not performed exclusively by so-called civilian recluses. Indeed, four of the five figures she discusses were gentry-officials according to Miyazaki’s definition, since they were degree-holders and had served in the bureaucracy. Second, Smith clearly confirms that there *was* heterogeneity among the local elite. While “[s]elf-interest and greed” still drove most people to “preserve their resources” and worked “against the forces of generosity and justice,”<sup>7</sup> some members of the local elite were willing to aid the needy. Furthermore, even those among the local elite who engaged in charitable activities “acted differently from their peers” in response to the “opportunities that social change had created.”<sup>8</sup> One of the most revealing discussions concerning the diverse opinions held within the local elite is the debate between Qi Biaoja 祁彪佳 (1602-1645) and some of his colleagues, including his mentor Liu Zongzhou 劉宗周 (1578-1645) and his close friend Ni Yuanlu 倪元璐 (1593-1644), with respect to the supply of grain for famine relief.<sup>9</sup> Smith’s study thus provides an important reminder: rather than explaining differences among the local elite in terms of social base or social status, it may be more fruitful to take their views seriously as criteria to divide them into separate groups. This reminder is especially helpful for the present article

<sup>5</sup> Mori Masao, “The Gentry in the Ming: An Outline of the Relations Between the *Shih-ta-fu* and Local Society,” *Acta Asiatica* 38 (1980): 35-36.

<sup>6</sup> For discussions of Miyazaki’s legacy, see Mori Masao, “The Gentry in the Ming”; Yue Chih-chia [Yu Zhijia] 于志嘉, “Ribei Ming-Qing shixuejie dui ‘shidafu yu minzhong’ wenti zhi yanjiu” 日本明清史學界對「士大夫與民眾」問題之研究, *Xin shixue* 4.4 (Dec. 1993): 141-75.

<sup>7</sup> Joanna Handlin Smith, *The Art of Doing Good: Charity in Late Ming China* (Berkeley: Univ. of California Press, 2009), 285.

<sup>8</sup> *Ibid.*, 10.

<sup>9</sup> *Ibid.*, 203-211.

because, even though the majority of the local elite held the view that their private interest would be maximized by avoiding their responsibility for hydraulic work, *some* among them were convinced that private interest could be ensured only once the public good had been achieved in water management. Those in the latter category upheld the beneficiary-pays principle and were willing to forgo their exemption privileges. Since they were instrumental to hydraulic reform in the Lower Yangzi Delta in the mid- and late Ming, I will call them in this article the “hydraulic reformers” among the elite.

In their view, government involvement was indispensable to the implementation of the beneficiary-pays principle. They therefore participated in policy-making by suggesting to the officials strategies to achieve a fair allotment of labor service and financial burden. The relationship between the hydraulic reformist elite and the officials, as this article will show, was complementary rather than antagonistic. The existing literature has already provided many cases in which collaboration between the local elite and government is manifest. Thus, in her recent work on late-Ming tax reform in Nanjing, Si-yen Fei elegantly depicts a scenario where urban residents took a series of actions with officials in the hope that fiscal justice could be restored.<sup>10</sup> For her part, Joanna Handlin Smith has a chapter entitled “aligning with officials” where she shows the ways the local elite used official authority to forward their own views of charity.<sup>11</sup> R. Bin Wong in his landmark book also emphasizes the “structural interchangeability of officials and elites,” referring to what he calls “a continuum between what is formally in official hands and what is in elite hands.”<sup>12</sup> The findings of the present article confirm what has already been demonstrated in the above works, though with some modifications. In the tax reform initiated by the Nanjing residents, the basic concern was to protect themselves from the government’s abusive corvée demands. To achieve this end, they supported the plan of replacing corvée with tax, which would set up “just criteria to measure financial capacity and a well-designed procedure impervious to malfeasance.” On the other

<sup>10</sup> Si-yen Fei, *Negotiating Urban Space: Urbanization and Late Ming Nanjing* (Cambridge, Mass.: Harvard Univ. Asia Center, 2009), 29-75.

<sup>11</sup> Smith, *The Art of Doing Good*, 193-219.

<sup>12</sup> R. Bin Wong, *China Transformed: Historical Change and the Limits of European Experience* (Ithaca: Cornell Univ. Press, 1997), 121.

hand, they stood up to “circumvent bureaucratic expansion.” In other words, in Nanjing urban residents had been troubled by the government, and in their view tax reform was the best solution because it could “formalize and publicize fiscal transaction between the state and the people” and thus give them autonomy from the government.<sup>13</sup> In contrast, in the eyes of the hydraulic reformers of the Lower Yangzi Delta the problem with the government was not its arbitrary orders for corvée but its inability to demand that landlords make due contributions. Retaining autonomy was not their main concern: rather, it was submitting all landlords to a system that embodied the beneficiary-pays principle. Thus, Wong has the following observation about the elite’s collaboration with the state:

Because elites and the state shared overlapping sets of interests, elites sometimes welcomed the delegation of state responsibilities to them. But elites were also oriented toward local society and could fend off the state either to defend the common people or more often to protect their own claims on resources and to control over local society.<sup>14</sup>

This description emphasizes the agency of the elite, enabling them to choose either to collaborate with officials or to challenge them. What is implied in this picture is the consistency of their interests, based on which they decided their relations with the state. Yet, the existence of the hydraulic reformers among the elite illustrates the diversity of their perceptions of interest. While some members were convinced that the more responsibilities they could evade, the more interest they would gain, others maintained a reciprocal relationship between private gain and public good, such that they were in the end willing to shoulder their duties. As I will argue, with different perceptions of interest and different understandings of how to achieve it, the hydraulic reformers established relations with officials that were different from those maintained by their peers.

Smith’s study also attaches much importance to the local elite’s ability to take initiatives. Relatively speaking, officials remained in a passive and responsive role in charitable works. In the hydraulic reforms that unfolded

<sup>13</sup>) Si-yen Fei, *Negotiating Urban Space*, 74-75.

<sup>14</sup>) Wong, *China Transformed*, 122.

from the 1520s to 1640s, however, the officials took a more proactive role. They developed budgetary and technological methods to support the beneficiary-pays principle with calculable measures for implementation. They made adjustments to the categories of waterways in order to work out a fair division of responsibility between the government and the people. They also negotiated with the local elite to reduce or revoke the latter's exemption privileges. In other words, officials did participate in the management of the disorder caused by an irresponsible local elite, and the new order was brought about by the reformist elite's advice along with the officials' intervention.

Speaking of state intervention in hydraulic matters, Pierre-Étienne Will has compared Hubei cases in Ming and Qing and found a "cyclical pattern" in each dynasty from development to recession through crisis.<sup>15</sup> At the beginning of the dynasty, large-scale state intervention aimed to restore hydraulic order and reconstruct hydraulic works; this restoration and reconstruction facilitated the development of private property, which generated such challenging conflicts between various forces and demands that the state could no longer fully control them; as a result, the state had to "maintain a minimum level of balance" and played the role of "an arbitrator amidst the contradictions."<sup>16</sup> As Will points out, these circumstances put the state in a "defensive, sometimes ambiguous" position and the state's "potential for action [was] quite limited."<sup>17</sup> Worse, in the next stage the state was "overcome by the difficulties" posed by social, demographic, and environmental change and eventually became fairly impotent.<sup>18</sup> Although this article will not venture into the demographic and environmental aspects of hydraulic reform, it confirms Will's point that in the second stage the state was faced with looming challenges to the imposition of policies that conformed with the general interest. Furthermore, it will emphasize the active participation of the hydraulic reformist elite in policy-making through providing officials with strategies and discourses that legitimized the state's intervention and its way

<sup>15</sup> Pierre-Étienne Will, "State Intervention in the Administration of a Hydraulic Infrastructure: The Example of Hubei Province in Late Imperial Times," in *The Scope of State Power in China*, ed. Stuart Schram (London and Hong Kong: School of Oriental and African Studies and Chinese Univ. of Hong Kong, 1985), 298.

<sup>16</sup> Ibid., 320.

<sup>17</sup> Ibid., 336.

<sup>18</sup> Ibid., 340-47.



of solving hydraulic problems. What is different from Will's description is the analysis of the collaboration between the officials and the hydraulic reformists: even in the early seventeenth century, toward the end of the Ming dynasty, the government was still capable of enforcing decisions to formulate a new order and achieve public good.

To summarize, I argue three main points in what follows. First, I seek to reveal the critical place of hydraulic reformers among the elite and the active role of like-minded officials in the formation of a new order in water management: the discussion will focus on how the elite formulated their view of the beneficiary-pays principle, how the officials developed the budgetary and technological methods to control hydraulic projects, and how both sides cooperated. Second, I will demonstrate that the implementation of the beneficiary-pays principle was instrumental in redefining the division of responsibility between the government and the people and in building a reciprocal connection between the pursuit of private gain and the fulfillment of the public good: to illustrate this point, negotiation for and enforcement of the institutional changes are the two issues to be investigated. And third, I will show that the new order, which included mobilization based on landownership, revocation of the gentry's exemption privileges, and a clear definition of the government's and people's responsibilities, gradually emerged over the period from the 1520s to the first decade of the seventeenth century. After the general application of this principle had become a shared view, the government used it to solve long-time disputes while the people used it to defend their rights against potential abuses. The article will conclude that the new order was not achieved solely by coercion—policy deliberation and persuasion also played major roles in the long journey toward the realization of the beneficiary-pays principle.

Before entering into details, however, a brief note on the socio-economic and environmental context is in order. Elvin has argued that in addition to landlord absenteeism, a geographically scattered pattern of landholding also contributed to the “withdrawal of landlords from involvement in water-management.”<sup>19</sup> These developments rendered

<sup>19</sup> Mark Elvin, “On Water Control and Management during the Ming and Ch'ing Periods: A Review Article,” *Ch'ing-shih wen-i* 3.3 (1975): 96. See also his “Market Towns and Waterways: The County of Shang-hai from 1480 to 1910,” in *The City in Late Imperial China*, ed. G. William Skinner (Stanford: Stanford Univ. Press, 1977), 460-61. Elvin dates



more difficult the continued use of the *lijia* 里甲 system for corvée purposes, as this system, which had been instituted in the early Ming, assumed people's fixed residence and a low level of land transactions. Landownership gradually emerged as the measure for levying labor service.<sup>20</sup> Even if landlords were absent from where their lands were located—because they had moved to towns and cities, or because their landholdings were scattered—conscripting labor service on the basis of landownership blocked their escape from corvée payment. The hydraulic reformers' concept of the beneficiary-pays principle—using landownership as the criterion to estimate the benefit one could reap from hydraulic works and calculating one's responsibility for those works accordingly—can be understood as tending in this direction. Furthermore, since this idea viewed landlords as connected to and thus responsible for their landed properties, wherever they were located, it also considered them as members of diverse communities. When the government institutionalized the beneficiary-pays principle, it did not incorporate landlords into the community from which they originated, or where they currently lived, but into all the communities to which they were considered as belonging in terms of landownership.<sup>21</sup>

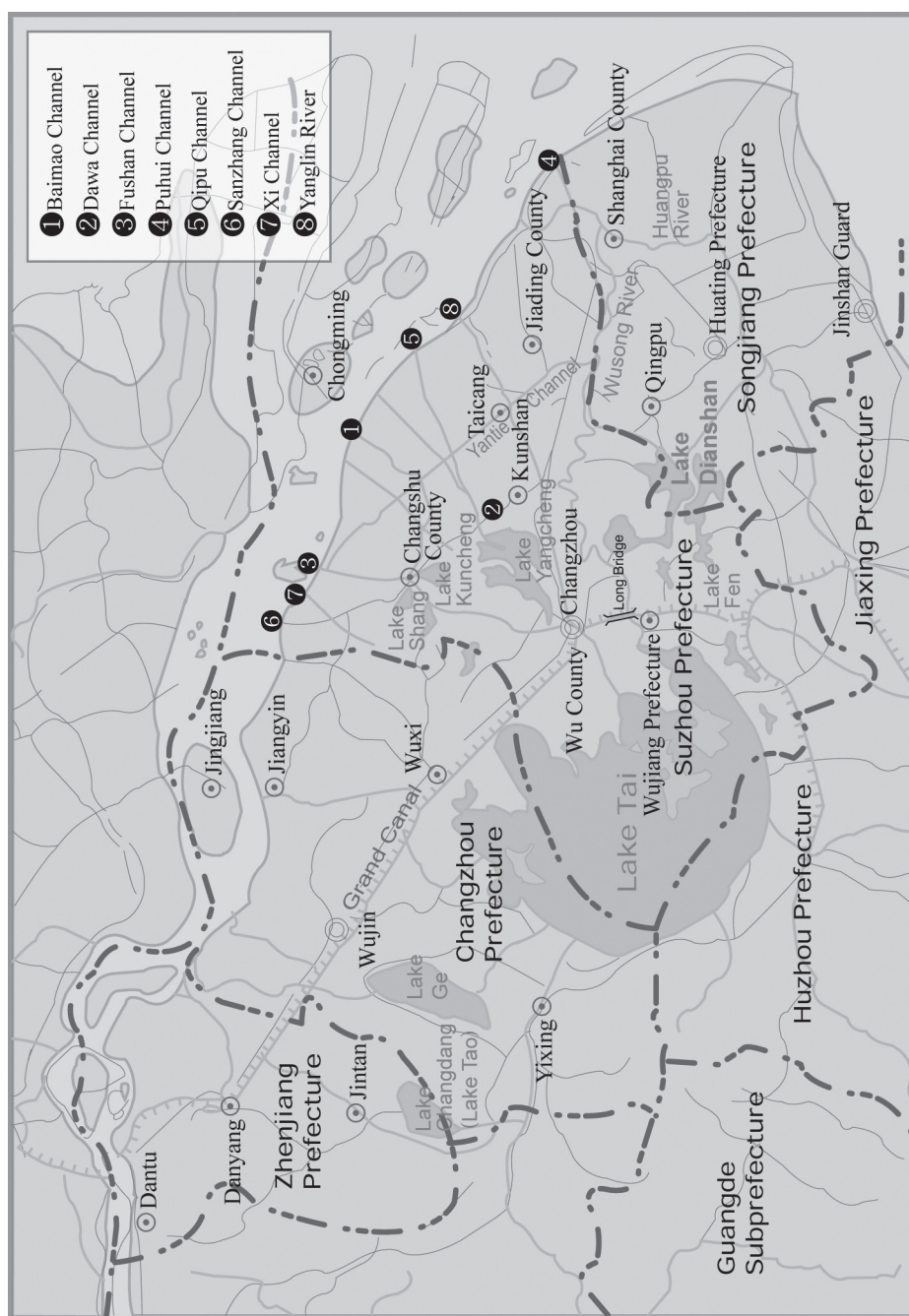
The environmental context in which the people discussed in this article lived or worked during the mid- and late Ming resulted from the interaction of previous hydrographic systems with irrigation and drainage techniques developed over the past centuries. A succinct description will suffice here. According to a series of studies by Wang Jian'ge, when the development of the Lower Yangzi Delta was started in the tenth

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these two developments to the seventeenth century, but according to Will they began earlier. See Pierre-Étienne Will, *Bureaucracy and Famine in Eighteenth-Century China*, tr. Elborg Forster (Stanford: Stanford Univ. Press, 1990), 316. Hamashima also dates these changes to the sixteenth century. See his "The Organization of Water Control in the Kiangnan Delta," 77. Based on the primary sources I have encountered, I believe Will's and Hamashima's observations better describe the situation of the Lower Yangzi Delta.

<sup>20</sup> The extensive literature on the Single Whip system provides clear discussions of this tendency. The best study in English is Ray Huang, *Taxation and Governmental Finance in Sixteenth-Century Ming China* (Cambridge: Cambridge Univ. Press, 1974), esp. 109-33.

<sup>21</sup> Hamashima has argued that state intervention reincorporated landlords into their communities, but he does not specify which communities. See *Mindai Kōnan nōson shakai no kenkyū*, 131-81, 425-35, and "The Organization of Water Control in the Kiangnan Delta," 82-89. My point here is to add clarification to his argument: as the reincorporation was not bound to residence, but to land location, landlords were reincorporated into all the communities where their lands were located.



The Hydrography of Jiangnan

century, spacious polders, wide channels, and large locks were constructed to take advantage of the extensive area provided with abundant irrigation water by Lake Tai 太湖, but at the same time they were threatened with flooding by that same lake. As time wore on, influential and wealthy families began to build smaller polders and open secondary channels for their own purposes. This caused silting and flooding, which gradually disrupted the functioning of the existing hydraulic system. In addition, demographic growth led to an increased demand for more arable lands. Consequently, at the beginning of the Ming dynasty the scene in the Lower Yangzi Delta was no longer characterized by several major waterways, large polders, and huge locks. Instead, there were relatively small polders and a network of waterways consisting of a large number of minor channels and narrow irrigation ditches.<sup>22</sup> According to Hamashima, as land reclamation kept on intensifying, toward the end of the fifteenth century there was little uncultivated land remaining. As a result, mobilization based on landownership became a more reasonable way to conscript labor service compared with other methods more suitable to circumstances before the area was fully developed.<sup>23</sup> It is against this socio-economic and environmental background that hydraulic reformers among the elite proposed the beneficiary-pays principle to address the corvée problems inherent in the water management challenges of their time.

### The Rise of the Beneficiary-pays Principle in Early Sixteenth-Century Discourse

In a memorial of 1523, Zhou Fengming 周鳳鳴 (1489-1550) strongly advocated applying the beneficiary-pays principle to the mobilization

<sup>22</sup> Wang Jian'ge 王建革, "Song Yuan shiqi Wusong jiang yutian qu de gengzuo zhi yu nongtian jingguan" 宋元時期吳淞江圩田區的耕作制與農田景觀, *Gujin nongye* 2008.4: 30-41; "Jing bang fazhan yu Wusong jiang liuyu de yutian shuili (9-15 shiji)" 涇、浜發展與吳淞江流域的圩田水利 (9-15世紀), *Zhongguo lishi dili luncong* 24.2 (2009): 30-42; "Wusong jiang liuyu de bayan shengtai yu xiangcun shehui (10-16 shiji)" 吳淞江流域的壩堰生態與鄉村社會 (10-16世紀), *Shehui kexue* 2009.9: 124-35.

<sup>23</sup> Hamashima Atsutoshi 濱島敦俊, "Tudi kaifa yu keshang huodong: Mingdai zhongqi Jiangnan dizhu zhi touzi houdong" 土地開發與客商活動: 明代中期江南地主之投資活動, *Zhongyang yanjiuyuan di er jie guoji hanxue huiyi lunwen ji* 中央研究院第二屆國際漢學會議論文集 (Taipei: Academia Sinica, 1989), 101-21.

of labor for water management by building reciprocal connections between private profit and public responsibility. He proposed that “all the landlords of a polder benefiting [from hydraulic works] be mobilized based on the area of their land without consideration of whether they are gentry or commoners” (本圩有田得利人戶，不分官民，一體計畝起撥).<sup>24</sup> In his eyes, as long as one gained private profit from hydraulic works, one had to be considered as being responsible for it and be mobilized accordingly, without allowing for any exceptions. Zhou’s suggestion addressed a significant issue at that time: whether or not gentry were entitled to enjoy the exemption privilege when labor service was needed for hydraulic projects. His view, which offered an unequivocal answer, is important to note if one takes his social status into consideration. A Kunshan 崑山 native, he passed the *jinsshi* 進士 examination in 1514 and probably served as the director of the Bureau of Operations in the Ministry of War in 1523.<sup>25</sup> With his degree and official title, he was entitled to the exemption privilege. If his proposal were to be implemented, his own interests would be hurt. In other words, Zhou was a good example of a local gentry willing to forgo his privilege and participate in water management, and he should therefore be regarded as one of the hydraulic reformers among the elite.

Zhou did not reach this opinion by accident. He analyzed the reasons why hydraulic conditions had deteriorated and identified three problems: (1) “poor people have difficulties in continuing their work [on diking] whenever they are affected by floods” (小民一遭水澇，困於工力難繼); (2) “wealthy families possess too much land across farmland paths and have problems in maintaining the dikes thoroughly” (大戶田連阡陌，病於顧理不周); and (3) in circumstances where “poor people farm land for wealthy families, they do not consider the land as their own, and wealthy families only care about rents” (小民佃種大戶之田，謂

<sup>24</sup> Shen Qi 沈啓, *Wujiang shuikao* 吳江水考, *Siku quanshu cunmu congshu* 四庫全書存目叢書 edition [hereafter *SKCM*] (Ji'nan: Qilu shushe, 1995-1997), 5.9b. This is a reprint of a 1740 edition in five *juan*, with a preface by Shen Qi dated 1564. There seems to have been an earlier edition published in the Yongzheng reign (1723-1735). See *Siku quanshu zongmu* 四庫全書總目, ed. Ji Yun 紀昀 et al. [hereafter *SKZM*] (Taipei: Yiwen yinshu guan, 1979), 75.9a.

<sup>25</sup> He was promoted from director of the Ministry of War Bureau of Operations to assistant minister of the Court of Judicial Review in 1530. See *Ming Shizong shilu* 明世宗實錄, ed. Zhang Juzheng 張居正 (Taipei: Zhongyang yanjiuyuan lishi yuyan yanjiuso, 1984), 109.2a.

非己業，在大戶只圖收租).<sup>26</sup> Upon closer observation, the second and third problems were similar. Since, as Mao Jieqing 毛節卿 (fl. mid-sixteenth century) later pointed out, to farm one thousand *mu* 畝 of land a landlord needed to hire one hundred tenants,<sup>27</sup> it is obvious that wealthy families hardly farmed their lands by themselves. This situation could easily lead to Zhou's third problem. In other words, the root cause of both problems was unwillingness. The first problem was different, however. Poor people did not do the diking work, not because they were unwilling, but because they were unable to do it. In formulating a simultaneous solution to both issues—inherent unwillingness, and inability—Zhou was careful to make it fair. He said, “If apportionment of labor service is unfair, it will cause more trouble to the people.” He therefore defined the maintenance of polder dikes and minor channels as the responsibility of landlords regardless of their social status. One should also note that, if Zhou discussed the beneficiary-pays principle when focusing on the management of dikes and small channels, he did not abandon it when he moved on to discuss the management of larger works. The only difference between small and large construction was that the former would be done within the community and the latter would require the government to handle the distribution of money and mobilization of workers.<sup>28</sup>

Fairness was one of the crucial features of Zhou's solution, which addressed the problem of avoidance of responsibility on the part of

<sup>26</sup>) Shen Qi, *Wujiang shui kao*, 5.9a.

<sup>27</sup>) Zhang Guowei 張國維 (1594-1645), *Wuzhong shuili quan shu* 吳中水利全書, *Siku quanshu* 四庫全書 edition [hereafter SKQS] (Taipei: Taiwan shangwu yinshuguan, 1983), 22.68b. Zhang was Yingtian 應天 Grand Coordinator from 1634 to 1640. The National Central Library of Taiwan holds a copy of this 28-juan treatise with Zhang's 1636 preface and prefaces by Cai Maode's 蔡懋德 (1586-1644), dated 1637, and Chen Jiru's 陳繼儒 (1558-1639), dated 1638. All three prefaces as well as another one by Wan Ren 萬仁 (no date) are included in Zhang's collected works, *Zhang Zhongmin gong yiji* 張忠敏公遺集, *Siku weishoushu jikan* 四庫未收書輯刊 edition (Beijing: Beijing chubanshe, 2000). According to Cai, Chen, and Wan, Zhang's appointment was made amid concerns about food shortage for the army stationed along the northern borders: if the hydraulic conditions of the Lower Yangzi Delta were not well maintained, there would be no stable and sufficient agricultural production to feed the army. Zhang states that Cai, a Kunshan native and 1619 *jinshi*, was co-editor of the book and that Wan, the magistrate of Jiading county, had discussed the issues with him. The book was completed during Zhang's tenure as Yingtian Grand Coordinator. See Zhang Guowei, *Zhang Zhongmin gong yiji*, 5.3b-6b, Appendix 2.1a-8b.

<sup>28</sup>) Shen Qi, *Wujiang shui kao*, 5.9b.

wealthy and gentry landlords. According to Hamashima, “fragmentary landownership” (*huafen* 花分) was the means adopted by non-gentry landlords to manipulate the land registration system. They bribed the clerks in charge of registration to divide their land into smaller pieces and nominally assign each piece to poorer relatives. In this way there would be only small areas of land under the names of the real landlords. As such, their households would be classified into the bottom tier and they would seldom be called upon for labor service. As for gentry landlords, using their exemption privilege they could resort to “fraudulent trusteeship” (*guiji* 詭寄) to protect their relatives from being recruited. In this way, some non-gentry landlords could claim that their lands were owned by gentry landlords: with little under their name, they would be considered as belonging to the bottom tier of households.<sup>29</sup>

The alarming result of fragmentary landownership and fraudulent trusteeship was that the pool of landlords whom the government could mobilize for hydraulic work became significantly narrowed. The victims of these two sorts of manipulation were the landlords who had no connection with gentry landlords and insufficient resources to bribe the clerks. They were not necessarily poor, but their labor would be repeatedly requisitioned and the burden would inevitably become unbearable. Zhou Fengming’s proposal was to solve the problem in two ways. First, the effects of “fragmentary landownership” would be prevented by recruiting all landlords, regardless of the size of their holdings. Second, “fraudulent trusteeship” would be prohibited by revoking the gentry’s exemption privilege. The combined effect would be an expansion of the pool of landlords responsible for water management and a fair apportionment of responsibility.

In addition to fairness, another feature in Zhou’s proposal was the institutionalization of a unique view of proper landlord-community relations in terms of a generally applicable rule. By Zhou’s time, landlord-community relations in water management had become extremely complicated. On the one hand, evidence shows that landlords, including members of wealthy and gentry families, were taking advantage of their social status to dodge their responsibilities. In the words of Songjiang

<sup>29</sup>) Hamashima, *Meidai Kōnan nōson shakai no kenkyū*, 238-44. I follow Hamashima in translating *guiji* 詭寄 as “fraudulent trusteeship.” See the book’s English summary, 10.



松江 native Jin Zao 金藻 (fl. late-fifteenth century), by his time the wealthy and powerful made no contribution at all and only the poor and weak came forth to provide labor.<sup>30</sup> On the other hand, evidence also shows that there *were* some landlords who voluntarily organized their communities for flood abatement. For example, one Mr. Pan, who belonged to a noted late-fifteenth century family in Wu county 吳縣, led a local flood-abatement team, showing his fellows how to use pumps and pointing out the places where the dikes needed to be repaired.<sup>31</sup> In the early sixteenth century, Wei Jiao 魏校 (1483-1543), a Suzhou 蘇州 native and a 1505 *jinshi*, recorded that his brother had discussed plans for emergency situations and worked out solutions with local elders. He volunteered to be the first to shoulder the responsibility.<sup>32</sup>

This conflicting picture suggests that up to the early sixteenth century the local mechanisms in place no longer necessitated that landlords participate in hydraulic work. Their participation now depended on personal good will. Zhou Fengming must have found that the unpredictability of subjective volition could not ensure reasonable maintenance. It was therefore necessary to codify such voluntarism. Furthermore, his insistence on the necessity of converting the profit motive into responsibility based on the extent of owned lands—allowing for no exceptions—made such codification an objective and responsible solution. It was objective because a clear, calculable, and generally applicable measure (landownership) would be enforced; and it appealed to the landlords' sense of responsibility by conveying the message that, since hydraulic works benefit all those who possess land, wealthy and gentry landlords should be aware that the more land they own, the more benefit they will enjoy, and thus the more labor service they should provide for collective hydraulic work.

In insisting on the responsibility of his elite fellows—be they gentry or non-gentry landlords—with regard to hydraulic management, Zhou

<sup>30</sup> Gu Yanwu 顧炎武, *Tianxia jinguo libing shu* 天下郡國利病書, *Xuxiu siku quanshu* 續修四庫全書 edition [hereafter XXSK] (Shanghai: Shanghai guji chubanshe, 1997), 4.27a.

<sup>31</sup> Zhu Yunming 祝允明, *Huaxingtang ji* 懷星堂集 (SKQS), 23.4a-5a.

<sup>32</sup> Wei Jiao 魏校, *Zhuangqu yishu* 莊渠遺書 (SKQS), 8.21a. Wei Jiao was a surveillance vice commissioner (rank 4a) when Zhou Fengming submitted his memorial. See *Ming Wuzong shilu* 明武宗實錄, ed. Fei Hong 費宏 (Taipei: Zhongyang yanjiuyuan lishi yuyan yanjiuso, 1984), 193.2b-3a. Therefore, Wei's family could have enjoyed exemption privilege by "fraudulent trusteeship."



did not blame them because they were seeking profit. Rather, profit served as the foundation on which he based responsibility: private gain from water management was the very reason to mobilize landlords. Thus, putting forward private interest would achieve public good. And since social status did not protect anybody from the consequences of deteriorated hydraulic conditions—only good maintenance of hydraulic works could protect one's lands from natural disaster—achieving public good enhanced private interest. The reciprocal connection between public good and private interest formed the core of Zhou's proposal. Based on two corvée methods—mobilization based on landownership and revocation of exemption privileges—Zhou's reformist idea would help reintegrate landlords into the communities where their lands were located in an objectively defined and mutually benefiting relation.

Zhou's idea was not unprecedented. In 1518, Wu Yan 吳巖 (1476-1524) had submitted a memorial which likewise focused on the beneficiary-pays principle connecting private profit and public responsibility. He maintained that “since hydraulic management is conducted for field farming, the money should be collected according to the area of the fields” (水利為田而興，則財力亦必計田而出), and proposed that “all landlords, no matter whether they are gentry or commoners, pay one *wen* for every *mou* of land owned” (凡有田之家，不拘官民，每田一畝，科錢一文).<sup>33</sup> In other words, the two corvée methods that would eventually bring the beneficiary-pays principle into practice were already present in Wu's memorial. Furthermore, Wu posited an investment-profit connection between water management and agricultural production: since landlords would reap benefits from hydraulic work, they should pay for it. In his eyes, private interest and public good were reciprocal.

Wu's family background helps us understand how his idea represented a distinct view on the part of hydraulic reformers among the local elite as far as landlord-community relations were concerned. Wu submitted his memorial in his capacity of Chief Supervising Secretary (rank 7a) at the Office of Scrutiny for Works at a time when a large hydraulic project overseen by Minister of Works Li Chongsi 李充嗣 (1462-1528) was under discussion. As Wu's position was pertinent to government-supervised public works, it is understandable that he should participate in

<sup>33</sup>) Zhang Guowei, *Wuzhong shuili quan shu*, 14.27a.

policy-making. But it is also important to note that he came from a well-to-do gentry family of Wujiang 吳江 county. His father Wu Hong 吳洪 (1448-1525) was a 1475 *jinsbi* and had retired in 1510 as Nanjing Minister of Justice (rank 2a).<sup>34</sup> His brother Wu Shan 吳山 (1470-1524) passed the *jinsbi* examination in 1508, the same year as Wu Yan. Wu Shan had just been promoted Shandong surveillance vice commissioner (rank 4a), in 1517.<sup>35</sup> With such strong gentry background, the Wus were legally entitled to exemption privileges. Furthermore, had they followed the example of other gentry and resorted to “fraudulent trusteeship,” they could have put more landlords under the umbrella of exemption. Yet Wu Yan did not abuse the power of his official position and provide self-serving advice. On the contrary, he proposed that gentry families give up their privilege for the purpose of the public good. The reasoning behind his attitude was fundamentally different from the one behind the attitude held by members of the elite who saw that the best way to maximize their interests was to reduce their expenditure on hydraulic management and increase their rental income.<sup>36</sup> In Wu’s view, good hydraulic management was in the landlords’ best interest; but without sufficient funding it would not happen. By this logic, the local gentry’s exemption privilege, which made raising sufficient funds difficult, had to be revoked in order to “accumulate a huge sum with a vast number of small amounts” (積少成多) and “easily achieve [proper hydraulic management] at minimum cost to the people” (眾輕易舉).<sup>37</sup> In other words, he did not consider the revocation as a sacrifice. Rather, he was convinced that, together with mobilization based on landownership, privilege cancellation was the proper way to form a mutually beneficial landlord-community relationship, which in turn would yield gains with higher certainty for landlords.

<sup>34</sup> *Wujiang xianzhi* (Qianlong edition) (乾隆) 吳江縣志, ed. Chen Xiang 陳纘 (rpt. Taipei: Chengwen chubanshe, 1975), 27.10a. Wu Hong was forced to retirement by the eunuch Liu Jin 劉瑾. Since no crime was put forward for his retirement, he was not deprived of exemption privileges. For the year of his retirement, see Tan Qian 談遷, *Guo que* 國權 (Taipei: Dingwen shuju, 1978), 189.

<sup>35</sup> *Wujiang xianzhi*, 27.16b.

<sup>36</sup> Hamashima’s study well analyzes the ways these landowners avoided their responsibilities. See his *Mindai Kōnan nōson shakai no kenkyū*, 90-106, 225-45.

<sup>37</sup> Zhang Guowei, *Wuzhong shuili quan shu*, 14.27a.

To appreciate their significance, one must put the views of Wu Yan and Zhou Fengming in historical perspective. To begin with, the “mobilization based on landownership” method had been sporadically put into practice in the fifteenth century; therefore, it was not a novelty in the sixteenth century.<sup>38</sup> What distinguished Wu’s and Zhou’s proposals was their discourse on the beneficiary-pays principle, which enriched the method with the notion of a reciprocal relation between private profit and public good, providing in turn the government with a justification to call upon landlords.

Then, some scholars have convincingly demonstrated that the pursuit of profit was not necessarily considered morally corrupt in the late Ming: merchants confidently defended their profit-seeking practices and interactions between scholars and merchants flourished.<sup>39</sup> While existing scholarship tends to emphasize that these are late-Ming phenomena, Wu’s and Zhou’s positive attitude toward private gain shows that the gradual recovery of the Suzhou economy beginning in the mid-fifteenth century had already found a reflection in the elite’s discourse on public responsibility by the beginning of the sixteenth century.<sup>40</sup> One should also note that Wu’s and Zhou’s efforts to establish the connection between

<sup>38</sup>) Hamashima, *Mindai Kōnan nōson shakai no kenkyū*, 142-159, discusses this method in detail.

<sup>39</sup>) See, for example, Liu Kwang-ching [Liu Guangjing] 劉廣京, “Houxu: Jinshi zhidu yu shangren” 後序——近世制度與商人, in Yu Yingshi 余英時, *Zhongguo jinshi zongjiao lunli yu shangren jingshen* 中國近世宗教倫理與商人精神 (Taipei: Lianjing chubanshe, 1987), Appendix, 25-53; Timothy Brook, “Profit and righteousness in Chinese economic culture,” in *Culture and Economy: The Shaping of Capitalism in Eastern Asia*, ed. Timothy Brook and Hy V. Luong (Ann Arbor: Univ. of Michigan Press, 1997), 27-44; Richard John Lufrano, *Honorable Merchants: Commerce and Self-cultivation in Late Imperial China* (Honolulu: Univ. of Hawai’i Press, 1997); Yu Yingshi, “Shi shang hudong yu ruxue zhuanxiang: Ming Qing shehui shi yu sixiang shi zhi yi mianxiang” 士商互動與儒學轉向——明清社會史與思想史之一面相, in *Jinshi Zhongguo zhi chuantong yu tuibian: Liu Guangjing yuanshi qishiwu sui zhushou lunwen ji* 近世中國之傳統與蛻變——劉廣京院士七十五歲祝壽論文集 (Taipei: Zhongyang yanjiuyuan jindaishi yanjiuso, 1998), 3-52.

<sup>40</sup>) For the mid-fifteenth century economic recovery in Suzhou, see Michael Marmé, *Suzhou: Where the Goods of All the Provinces Converge* (Stanford: Stanford Univ. Press, 2003), 108-53. The scholarship on market towns also provides supportive evidence. See Fan Shuzhi 樊樹志, *Ming Qing Jiangnan shizhen tanwei* 明清江南市鎮探微 (Shanghai: Fudan daxue chubanshe, 1990), esp. 66-87; Liu Shih-chi [Liu Shiji] 劉石吉, *Ming Qing shidai Jiangnan shizhen yanjiu* 明清時代江南市鎮研究 (Beijing: Zhongguo shehui kexue chubanshe, 1987), esp. 157; Chen Xuewen 陳學文, *Zhongguo fengjian wanqi de shangpin jingji* 中國封建晚期的商品經濟 (Changsha: Hunan renmin chubanshe, 1989), esp. 175-89.

private gain and public responsibility were different from Lu Ji's 陸楫 (1515-1552) "discourse against sumptuary regulations" (*Jin she bian* 禁奢辨).<sup>41</sup> Lu's main idea was as follows: because the consumption of wealthy families would create job opportunities for poor people, sumptuary regulations that constrained wealthy families from spending could not serve the poor people's interest. Lu maintained that the market would regulate the relationship between the wealthy and the poor. He did not try to appeal to wealthy people's sense of responsibility, however. In other words, even though Wu and Zhou may also have formed their views under the influence of commercial development, their approach was more community-oriented than market-oriented.

Lastly, some scholars have attributed the change of attitude toward private interest to the intellectual movement led by followers of Wang Yangming 王陽明 (1472-1529), which was critical of Cheng-Zhu Neo-Confucianism.<sup>42</sup> Yet it would have been impossible for Wu and Zhou, who were Wang's contemporaries, to take inspiration from such post-Wang thinkers. Still, scholars have shown that Suzhou literati had little interest in Neo-Confucianism,<sup>43</sup> and Wu's and Zhou's creative use of

<sup>41</sup> For detailed discussion of this text and of its significance, see Lin Li-yueh [Lin Liyue] 林麗月, "Wan Ming 'chong she' sixiang yulun" 晚明「崇奢」思想隅論, *Guoli Taiwan shifan daxue lishi xuebao* 19 (1991): 1-20; id., "Lu Ji (1515-1552) chongshe sixiang zaitan: jianlun jinnian Ming Qing jingji sixiang shi yanjiu de jige wenti" 陸楫 (1515-1552) 崇奢思想再探——兼論近年明清經濟思想史研究的幾個問題, *Xin shixue* 5:1 (1994): 131-53; Chen Kuo-tung [Chen Guodong] 陳國棟, "Youguan Lu Ji 'Jin she bian' zhi yanjiu suo sheji de xueli wenti: kua xuemen de yijian" 有關陸楫「禁奢辨」之研究所涉及的學理問題——跨學門的意見, *Xin shixue* 5.2 (1994): 159-79; Chao Xiaohong 鈔曉鴻, "Jin ershi nian lai youguan Ming Qing 'shemi' zhi feng yanjiu shuping" 近二十年來有關明清「奢靡」之風研究述評, *Zhongguoshi yanjiu dongtai* 2001.10: 9-20.

<sup>42</sup> For example, Wm. Theodore de Bary, "Individualism and Humanitarianism in Late Ming Thought," in *Self and Society in Ming Thought*, ed. Wm. Theodore de Bary (New York: Columbia Univ. Press, 1970), 145-248; Mizoguchi Yūzō 溝口雄三, *Chūgoku zen kindai shisō no kusetsu to tenkai* 中國前近代思想の屈折と展開 (Tōkyō: Tōkyō daigaku shuppankai, 1980), esp. 217-61; Joanna F. Handlin, *Action in Late Ming Thought: The Reorientation of Lü K'un and Other Scholar-Officials* (Berkeley: Univ. of California Press, 1983), esp. 103-42; Cheng Yi-fan [Cheng Yifan] 程一凡, "Gu Yanwu de sili guan" 顧炎武的私利觀, in *Jinshi Zhongguo jingshi sixiang yantaohui lunwen ji* 近世中國經世思想研討會論文集 (Taipei: Zhongyang yanjiuyuan jindaishi yanjiuso, 1984), 81-104, 663-76; Wang Kuo-liang [Wang Guoliang] 王國良, *Ming Qing shiqi ruxue hexin jiazhi de zhuanhuan* 明清時期儒學核心價值的轉換 (Hefei: Anhui daxue chubanshe, 2002), esp. 222-35.

<sup>43</sup> For example, Jian Jinsong 簡錦松, *Mingdai wenxue piping yanjiu* 明代文學批評研究 (Taipei: Xuesheng shuju, 1989), 85-183; Li Cho-ying [Li Zhuoying] 李卓穎, "Difangxing yu kua difangxing: cong 'ziyou chuantong' zhi lunhu yu shijian kan Suzhou zaidi wenhua

“profit” to address the issue of private interest and public good may well indicate their disillusion with Cheng-Zhu Neo-Confucian discourse, which drew a sharp and irreconcilable line between profit and righteousness.

In addition to their intellectual and cultural implications, the significance of Wu’s and Zhou’s views also touches upon their statecraft ideas. Both authors took advantage of the trend toward monetization of corvée, which had set in in the early fifteenth century, to help the government secure necessary funds.<sup>44</sup> Their willingness to stabilize financial resources by transferring the burden onto the people, including themselves, was in continuity with the efforts of local hydraulic specialists in the late fifteenth century.<sup>45</sup> They maintained that an active government, not existing social mechanisms, had to be part of the solution for deteriorated conditions. As such, they hoped to clear up any problems caused by financial shortages. Furthermore, their lack of confidence in available social mechanisms was also demonstrated in their request to institutionalize proper landlord-community relations. However, in contrast to their counterparts in the late fifteenth century, Wu and Zhou had no confidence that the financial burdens could be completely transferred to the people.<sup>46</sup> Their modest advice was to hold the government responsible for bearing the burden *to some degree*, even though they agreed that the

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yu lixue zhi jinghe” 地方性與跨地方性—從「子游傳統」之論述與實踐看蘇州在地文化與理學之競合, *Zhongyang yanjiuyuan lishi yuyan yanjiuso jikan*, 82.2 (2011): 325-98.

<sup>44</sup> Wu’s attitude toward “monetization of corvée” can be clearly seen in his conversion of land area into amounts of silver. Zhou’s adoption of this development is implied in his insistence that the workers have to be paid. See Shen Qi, *Wujiang shuikao*, 5.9b. Several scholars have offered solid analyses of the process of monetizing corvée in the Ming dynasty. See Liang Fangzhong, “Lun Mingdai lijia fa he junyao fa de guanxi” 論明代里甲法和均徭法的關係, in his *Liang Fangzhong jingji lunwen ji* 梁方仲經濟史論文集 (Beijing: Zhonghua shuju, 1989), 577-603; Tang Wenji 唐文基, “Mingdai de junyao fa” 明代的均徭法, *Pingzhun xuekan* 4.2 (1989): 575-608; Ray Huang, *Taxation and Governmental Finance in Sixteenth Century Ming China* (Cambridge: Cambridge Univ. Press, 1974), 109-18; Iwami Hiroshi 岩見宏, *Mindai yōeki seido no kenkyū* 明代徭役制度の研究 (Kyoto: Dōhōsha, 1986), 157-80.

<sup>45</sup> For a discussion of the efforts of local hydraulic specialists in this direction, see Cho-ying Li, “Contending Strategies, Collaboration among Local Specialists and Officials, and Hydraulic Reform in the Late-Fifteenth-century Lower Yangzi Delta,” *East Asia Science, Technology and Society* 4.2 (2010): 229-53.

<sup>46</sup> For local specialists’ view on this issue, see Cho-ying Li, “Contending strategies,” 243-46.

people should be the primary payers and that the government should only play a supplementary role when needed.<sup>47</sup>

With Wu's and Zhou's voicing of these convictions, we can conclude that, for the elite aspiring to hydraulic reform in the early sixteenth century, the beneficiary-pays principle—whose concrete expressions included mobilization based on landownership, definition of the people as the primary payers, division between the government and the people, and the revocation of gentry exemption privileges—had become a normative concept. Although the realization of this concept in practice would have to go through a series of concrete policy-making and project-implementing steps, it served as a basic platform from which officials could justify the reforms they intended to carry out.

### **The Beneficiary-pays Principle in Action in the Sixteenth-Century: Implementation and Modifications in Policy-Making**

With the advice of the hydraulic reformist elite at hand, sixteenth-century officials in charge of water management still had to devise the best strategies to bring the beneficiary-pays principle into practice. The people's ability to shoulder the demands in funds and labor as well as the gentry's resistance were among the factors that put constraints on available options. The limits inherent in the beneficiary-pays principle—the hydraulic works and the area that benefited from them had to be closely connected geographically—were another factor that officials had to consider. Precedents set by the group of officials who first incorporated the principle into their policies also provided their successors with both possibilities and limits. For these reasons, the realization of the beneficiary-pays principle underwent a long journey in the course of the sixteenth century, during which individual elements of Wu Yan's and Zhou Fengming's propositions were selectively adopted. In the process, the division of responsibility between the government and the people, the nature of landlord-community relations, and the connection between private profit and public good that were involved in the principle were constantly redefined and modified. All these redefinitions and

<sup>47</sup> See Zhang Guowei, *Wuzhong shuili quanshu* 14.27b; Shen Qi, *Wujiang shuikao* 5.9b.



modifications contributed to the clearer mode of operation in water management that finally emerged in the late sixteenth century.

*Li Chongsi's Administration: Two Modes of Partial Application of the Beneficiary-pays Principle*

Li Chongsi was the first official sent by the central government in the sixteenth century to take charge of water management in the Lower Yangzi Delta. His appointment as grand coordinator, a position he held between 1518 and 1523, resulted from local requests for a high-ranking official to improve conditions after repeated floods during the previous years.<sup>48</sup> Li's plan was ambitious. He intended to launch a broad project that would have a number of waterways dredged and many dams and locks constructed. To fund his project, however, Li did not take Wu Yan's advice that people should be the primary payers as part of his original plan. He appealed to the central government in 1519 for permission to use transit and salt taxes to cover the expenditure of "roughly more than one hundred thousand taels of silver." If this sum were not enough, he would extract money from prefectural and county treasuries: people would be called upon only as a last resort.<sup>49</sup> But Li's proposal was not approved, and he was left with no other choice but turning to the prefectures and counties within his jurisdiction to secure sufficient funds.<sup>50</sup> In order to make ends meet, he adopted another strategy: he narrowed the scope of the project to be funded through government agency, raising only enough money to dredge the Wusong River 吳淞江 and the Baimao Channel 白茆港. All other hydraulic projects, as Gu Dingchen 顧鼎臣 (1473-1540) noted, were not to be funded because they only served local interests.<sup>51</sup> This move significantly reduced public expenditures.<sup>52</sup> Besides, even though the beneficiary-pays principle

<sup>48</sup> Feng Rubi 馮汝弼 and Deng Fu 鄧輔, *Changshu xianzhi (Jiajing edition)* (嘉靖) 常熟縣志 (Beijing: Shumu wenxian, 1997), 4.16a.

<sup>49</sup> Shen Qi, *Wujiang shuikao*, 4.44a-b.

<sup>50</sup> Zhang Guowei, *Wuzhong shuili quanshu*, 14.34b. His itemized report upon completion of the project lists no funds received from the Customs or salt distribution commissioners, a proof that he did not receive financial support from the central government.

<sup>51</sup> Gu Dingchen 顧鼎臣, *Gu Wenkang sanji* 顧文康三集 (SKCM), 3.11b. The original text reads as follows: 凡此皆就地興徒，因軍民所利，弗予備直。Gu was a Kunshan native who obtained first place in the 1505 *jinshe* examination.

<sup>52</sup> The Wusong project cost 14,895.9 taels and the Baimao project, 29,935.1 taels. The total came to 50,323.9 taels after adding the costs of office, lock, and dam building, 5,492.9 taels



was not Li's first choice, in the end it did help him achieve his revised goal.

After making these decisions, Li entrusted the dredging of the Wusong River to Yan Ruhuan 顏如環 (fl. 1520s), a vice director at the Ministry of Works, and the dredging of the Baimao Channel to Lin Wenpei 林文沛 (fl. 1520s), a secretary at the same Ministry. He gave Yan and Lin some latitude to choose the means of bringing the beneficiary-pays principle to their assigned tasks. And they indeed formulated two different modes of application.

For Yan's project, Li only set a general rule: "Since all of Suzhou and Songjiang prefectures enjoy the benefits of the Wusong River, the burden should be shouldered by both prefectures' subordinate sub-prefectures and counties" (吳淞江利歸蘇松二府，其工役之費，則分派二府所屬州縣).<sup>53</sup> In formulating his policy, Yan asked prefects and magistrates for advice. Although he had a clear idea of what he wanted to do, he gave them three options to consider. The first option was taken from a precedent that mobilized people based on landownership: for every twenty *mu* of land, the landlord would have to provide one worker. He immediately pointed out an obvious shortcoming: it would require large landlords to produce hundreds or even thousands of workers, which in his view was unrealistic. The second option was also derived from another precedent. It demanded thirty to sixty workers from every 110 households—that is, from every *li* 里. But Yan also quickly commented that this method could be easily manipulated: the *de facto* labor providers would always be poor families, while the wealthy families who enjoyed most of the benefit would hardly respond to the call. His third option was to raise the fees by adding an extra amount of grain to the current grain tax or by collecting extra fees according to the area of land under cultivation. He asserted that this would be fair, since the poor would get

in all. This was only about a half of what Li had requested. See Zhang Guowei, *Wuzhong shuili quanshu*, 15.52a, 55a and 56a. The fact that dikes and minor waterways were excluded from the list of funded works is best shown when comparing the plan for the Baimao project and the report of its completion. It was said in the plan that the government would "consider how much it could reasonably pay" for the work on dikes and minor waterways; but in the report there is no mention of any payment, though the numbers and lengths of the dikes and minor waterways that were effectively repaired are recorded in detail. See *Wuzhong shuili quanshu*, 15.46a-b and 56a-b.

<sup>53</sup>) Ibid., 14.34b.

paid for their labor, and the wealthy would be excused from their corvée service by paying the fees.<sup>54</sup>

The implication of Yan's method was twofold. First, he did not mention prefectural or county treasuries, but only discussed the ways of collecting fees from the people. In other words, after Li Chongsi's request for money had been rejected by the central government, Yan went directly to the people to raise the necessary funds without trying to put his hands in the pockets of local governments. Second, he noted that collecting extra fees was not his own idea, but had been brought to his attention by a certain "opinion-holder" (*yizhe* 議者).<sup>55</sup> His preference for this method drew him close to Wu Yan's suggestion, mentioned above: all landlords would have to pay "one *wen* for every *mou* of owned land." In turn, Wu's opinion was realized in Yan's policy, since they shared the idea that the more land one possessed, the more one would benefit from water management, and hence the more one should contribute. This is a good example of how local hydraulic reformers and officials worked together to achieve fairness and serve the public good.

Other members of the reformist elite also offered advice. For example, Gu Qing 顧清 (1460-1528), a Huating 華亭 native and a 1493 *jinshi*, wrote a letter to Li Chongsi to point out how much of a burden landlords would have to endure if the number of workers to be mobilized was to be calculated on the basis of landownership. He wrote he had heard the ratio would be one worker for every thirty *mu*. By this measure, Gu pointed out, more than 100,000 workers would have to be recruited from Songjiang prefecture. He did not think the dredging projects required so many people. Neither did he believe that people suffering from the consequences of flooding could stand such heavy corvée.<sup>56</sup>

<sup>54</sup> Ibid., 15.42b-43a. Some indication of how the extra fees were collected is required here. To collect the fees according to the area of owned lands was certainly a landownership-related method. Such was also the case with collecting them in the form of an additional tax, since landowners paid taxes on the basis of the land they owned. For instance, in the Zhengde reign (1506-21) the landowners of Wu County 吳縣 were responsible for paying 0.344 *shi* of grain as tax for every *mu* of land they owned. See Wang Ao 王鏊, *Gusu zhi* 姑蘇志 (SKQS), 15.9b. The differences between these two methods and their respective advantages have been analyzed by Liang Fangzhong, *Liang Fangzhong jingjishi lunwen ji*, 62-65.

<sup>55</sup> Zhang Guowei, *Wuzhong shuili quanshu*, 15.42b-43a.

<sup>56</sup> Gu Qing 顧清, *Dongjiang jiacang ji* 東江家藏集 (SKQS), 39.5a-b. Yan Ruhuan was in charge of Songjiang, of some other prefectures, and of some counties of Suzhou. Li Wenpei

Since Yan's note to the prefects and magistrates did not mention this ratio (his ratio was "one worker for every twenty *mu*"), it is likely that a lighter ratio was brought up for discussion in the process of policy-making. Comparing the numbers of workers used for the Wusong project with the area of land in Suzhou and Songjiang will help us calculate the ratio that was used in practice. According to Yan's final report, there were 43,078 workers.<sup>57</sup> Based on two contemporary local gazetteers, the area of taxable land was about 9,500,000 *mu* in Suzhou and 4,700,000 *mu* in Songjiang.<sup>58</sup> Even if some lands were exempted from corvée, the ratio would not be heavier than one worker per three hundred *mou*, or only 10 percent of the ratio used in the precedent Yan was referring to and 6.7 percent of the ratio that Gu reported he had heard about. This remarkable reduction would have effectively eased the landlords' resistance to mobilization based on landownership.<sup>59</sup> In other words, local gentry input made Yan's plan more sensible to local conditions. This input in turn helped him implement the beneficiary-pays principle that Li Chongsi had set as a guiding principle for him.

Besides the Wusong River, Yan also supervised the dredging of minor channels and the building of dikes. He clearly proclaimed that these works were the responsibility of "each and every household who would benefit" (各得利人戶) and did not involve himself in their funding.<sup>60</sup> Thus it can be seen that the beneficiary-pays principle was applied throughout his plan, including large and small hydraulic projects. In this sense, he basically followed Wu Yan's concept that the people were to be the primary payers in water management. The division between

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had nothing to do with Songjiang. Therefore, Gu's opinion is more relevant to Yan's than to Lin's project.

<sup>57</sup> Zhang Guowei, *Wuzhong shuili quanshu*, 15.52a.

<sup>58</sup> Wang Ao, *Gusu zhi*, 15.4b-5a; Chen Wei 陳威, Gu Qing 顧清, *Songjiang fuzhi* (Zhengde edition) (正德) 松江府志 (*SKCM*), 7.29a-30a.

<sup>59</sup> It should be noted that Hamashima reads Gu's opinion as that of a large landowner resisting the "mobilization based on landownership" method. See Hamashima, *Mindai Kōnan nōson shakai no kenkyū*, 145. Though Hamashima's findings on the resistance of large landowners to this method are in general convincing, in this specific case I think Gu's opinion demonstrates the existence of certain gentry landlords who actually supported it. In fact, Gu did not say he had a problem with it: he was simply reluctant to agree to the ratio (照田起夫之數). From this point of view, his was the advice of a local elite that intended to make the application of the method realistic.

<sup>60</sup> Zhang Guowei, *Wuzhong shuili quanshu*, 15.53a-b.

people and government was maintained in a special way: officials raised funds only for the large waterways and left the others to be taken care of by the population, even though in the end all the money came from the latter. Mobilization based on landownership—be it in the form of extra fees or of labor service—was also at work. But one crucial piece was missing from Yan's administration: he was silent on the issue of revocation of the gentry exemption privilege. This suggests that even though there were at that time hydraulic reformers among the local elite, like Wu Yan and Gu Qing, the potential resistance of gentry landlords was too great for Yan to decide to engage the problem.

Nor did Lin Wenpei—Yan's colleague and Li Chongsi's other subordinate—choose to confront such resistance. Except for this shared attitude, however, Lin's project functioned differently from Yan's in several respects. One major difference was that Li Chongsi did not order Lin to use the beneficiary-pays principle to mobilize people. He was sensible to the fact that in Suzhou prefecture the Baimao Channel flowed through only one county, Changshu 常熟. It was difficult either to have its dredging done by workers from that single county or to legitimately apply the beneficiary-pays principle to recruit people from other counties and prefectures as well. After commenting that this project was a “labor intensive” one, Li decided that “Suzhou will take up two [fifths], Changzhou and Songjiang one [fifth] each, and Jiading and Huzhou one [fifth] in collaboration” (蘇州當任其二，常州、松江分任其一，嘉興、湖州則協任其一). He also specified that, Changshu being closest to the Baimao Channel, it would absorb half of Suzhou's assignment.<sup>61</sup> The inapplicability of the beneficiary-pays principle in this case corresponds to one of its important features: the designated infrastructure must have a direct relation to the people whose land can be justifiably identified as benefiting from it. There was to be a close connection between the locations of the infrastructure (be it a dike, a channel, or a river) and the places from which workers could be recruited.

Fundraising presented similar problems. As it was impossible to rely on one sole county for the entire expenditure, the “dredger-men funds” 導河夫銀 practice, which had been devised in the late fifteenth century

<sup>61</sup> Zhang Guowei, *Wuzhong shuili quanshu*, 14.34b.

and then temporarily abolished, was reactivated.<sup>62</sup> According to Cai Qian 蔡乾 (fl.1520s), the government resumed collection of these fees from Suzhou and Changzhou, largely congruent with Lin's assigned area, in 1520.<sup>63</sup> Since this re-installment occurred directly after Li's proposal had been rejected and immediately before the dredging was conducted, it is reasonable to conclude that it was intended mainly for the dredging of the Baimao Channel.<sup>64</sup> The fees were collected by extracting six taels of silver from every *li*.<sup>65</sup> This method ensured that Lin could easily secure sufficient money for his project.<sup>66</sup>

Despite the difference between Lin's and Yan's administrations, the two were in accord concerning projects smaller than the Baimao Channel. All waterways were dredged by "those who benefited from them" (得利人夫).<sup>67</sup> Dikes were likewise repaired by "the households who benefited from them" (得利之家), and people were mobilized "according to the area of their lands" (照田出夫).<sup>68</sup> On closer analysis, it seems clear that none of these mobilization drives for small-scale construction were

<sup>62</sup> This institution required that every 110 households (i.e., one *li*) provide one worker for hydraulic management every year. In fact, the 110 households did not actually provide a worker; rather, by a special conversion rate set in the late fifteenth century, they had to submit six taels of silver to the government. The collected funds would then be used in regular maintenance of hydraulic works. For the invention of this method, see Cho-ying Li, "Contending strategies," 243-46. It was abolished in 1501. See Zhang Guowei, *Wuzhong shuili quanshu*, 18.50a.

<sup>63</sup> Shen Qi, *Wujiang shuikao*, 5.12b. For Lin's assigned area, see Zhang Guowei, *Wujiang shuili quanshu*, 15.54a.

<sup>64</sup> For the dates of the submission of Li's memorial and of the beginning of the Baimao project, see Zhang Guowei, *Wuzhong shuili quanshu*, 14.30b and 35b.

<sup>65</sup> Li Chongsi noted that the central government had approved supervising secretary Chai Qi's 柴奇 (1470-1524) suggestion on this rate. See Shen Qi, *Wujiang shuikao*, 4.43b-44a. Chai's memorial is found in his *Fu'an yigao* 黻菴遺稿 (SKCM), 8.1a-5a, esp. 4b.

<sup>66</sup> The total cost of the project was 29,935 taels. See Zhang Guowei, *Wuzhong shuili quanshu*, 15.55a. The fees collected from Suzhou—excluding Chongming and Jiading Counties, which were not in Lin's jurisdiction—must have amounted to 17,868 taels, since in the Zhengde reign there was a total 2,978 *li* in the other six counties of Suzhou (Wang Ao, *Gusu zhi*, 7.6a-8b). The number of *li* in Changzhou Prefecture is unclear. A figure of about 2,000 *li* could have produced enough fees to make the total. Even if there were fewer *li*, Chai's advice was that the gap could be filled by advance collection for the next one or two years. See Shen Qi, *Wujiang shuikao*, 4.44a.

<sup>67</sup> Zhang Guowei, *Wuzhong shuili quanshu*, 15.55b-56b.

<sup>68</sup> Ibid., 15.46b. It should be noted that, even though Lin had planned to rely upon both dredging fees and a certain portion of the government budget for dike building, according to his final report he eventually did not have to do so; see 15.57a.

cross-prefectural—they recruited people from at most three counties.<sup>69</sup> In this way, the applicability of the beneficiary-pays principle in terms of direct connection between the work and the people it would benefit was reinforced.

While Lin and Yan agreed on the necessity of the division of responsibility between the government and people and on the fact that the people should be the primary payers for the work, and while both men kept silent on the issue of the gentry's exemption privileges, they still diverged on one crucial point. Unlike Yan, who basically applied the beneficiary-pays principle and mobilization based on landownership to his entire project, Lin only applied them to smaller projects. Table 1 summarizes their similarities and differences:

Table 1: Two modes of operation under Li Chongsi's administration

	Application of the beneficiary-pays principle	Mobilization based on landownership	People as the primary payers	Division between the government and people	Revocation of gentry's exemption privileges
Yan Ruhuan	Yes	Yes	Yes	Yes	No
Li Wenpei	Limited to small works	Limited to small works	Yes	Yes	No

Table 1 also merits discussion from the perspective of the advice given by Wu Yan and Zhou Fengming. It certainly shows that Yan Ruhuan met the reformist elite's expectations more fully. What must retain our attention, however, is that Zhou submitted the memorial in which he reiterated the necessity of revoking gentry exemption privileges in 1523, the same year that Li Chongsi's administration ended. This suggests that Zhou, who held the same view as Wu Yan and was convinced that such revocation was essential to a successful reform, did not want to see Li's administration become a precedent. On the other hand, if one analyzes Yan's and Lin's decisions from an official point of view, there was more than just the potential threat of gentry resistance. They ignored the hydraulic reformers' call for the revocation of gentry exemption privileges because they were confident that by levying extra fees on non-exempt

<sup>69</sup>) More precisely, for the dredging of three lakes that bordered on three different counties. See *ibid.*, 15.55b.

lands they could manage to achieve good water management without radical change to the *status quo*. As a result, they did not proceed in the direction to which Wu Yan had pointed: institutionalizing a proper landlord-community relation through a generally applicable rule. Under the present circumstances, the hydraulic reformist elite's normative concepts could only be partially realized.

### *The Legacy of Li Chongsi's Administration in the Mid-Sixteenth Century*

Partial realization of the beneficiary-pays principle as defined by Wu Yan and Zhou Fengming continued after Li Chongsi's administration, both in the discourse of most hydraulic elite reformers and in actual official hydraulic projects. For example, when in 1525 Cai Qian oversaw in his capacity as assistant surveillance commissioner a maintenance project that concerned a number of small channels, ditches, and polder dikes, he mobilized "those households who would benefit" (得利人戶).<sup>70</sup> In 1530, Zhu Gun 朱袞 (1479-1565), a director at the Ministry of Works, set rules to "mobilize people based on landownership" (論田出夫) for regular maintenance of small waterways and polder dikes.<sup>71</sup> In the mid-1530s Taicang 太倉 Vice Magistrate Wang Pin 王聘 (fl. 1520s-1580s) supervised the dredging of the Yanglin Channel 楊林河 by mobilizing people based on landownership.<sup>72</sup> In a final example, Salt-control Censor

<sup>70</sup> Ibid., 15.61a.

<sup>71</sup> Ibid., 15.63b-64a.

<sup>72</sup> Wang Qi 王圻 (fl. late sixteenth century-early seventeenth century), *Dongwu shuili kao* 東吳水利考 (SKCM), 10B.24a-b. I follow Hamashima's dating of this event (*Mindai Kōnan nōson shakai no kenkyū*, 148-49). However, I differ with his opinion that Wang's project was never implemented. Although no evidence in local gazetteers suggests implementation, there is no obvious reason to dismiss the validity of Wang Qi's text referring to Wang Pin's project. Furthermore, Mao Jieqing gave concrete details of the project and recorded that "no one complained about" Wang's work. Mao also uses "once again" (*fu* 復) when referring to the dredging of this same waterway at a later time (*Dongwu shuili kao*, 10B.24b). For all these reasons I am convinced the project was realized under Wang's supervision. Regarding the *Dongwu shuili kao*, we may note that this ten-juan treatise has an undated preface signed by Zhang Zongheng 張宗衡 (fl. early seventeenth century) in his capacity as Songjiang prefect, a position he held from 1621 to 1623. See *Songjiang fuzhi* (Jiaqing edition) (嘉慶) 松江府志 (XXSK), 36.17b. Zhang's preface describes how Wang Qi set out to write his book amid the flooding and drought that afflicted the two decades from 1588-1608. Indeed, the 1607 drought and the 1608 floods are mentioned in the last document (*Dongwu shuili kao*, 10A.40a). In other words, the book must have been completed sometime between 1608 and 1623.



Wei Yuankang 蔚元康 (fl. 1560s-1570s) clearly stated that the beneficiary-pays principle would be combined with mobilization based on landownership to secure sufficient labor for his dredging project of 1567.<sup>73</sup> All of these projects, which covered a limited local area, adopted the beneficiary-pays principle and used landownership as the measure of *corvée*. However, they were all silent on gentry exemption privileges: the only exception is Wang Pin, but his decision was to tolerate them.<sup>74</sup> In short, by the mid-sixteenth century, officials constantly resorted to the beneficiary-pays principle in local water management and considered it normal to recruit workers according to landownership for the purpose of public good while leaving gentry exemption privileges intact.

On the local elite side, the reformist voice seemed to fade away. The only implicit exception is found in a 1566 memorial by Ling Yunyi 凌雲翼 (fl. 1540s-1580s). Ling came from a Taicang gentry family. His brother, Ling Ruzhi 凌汝志 (fl. 1540s-1550s), obtained the *juren* 舉人 degree in 1543, the same year as Ling Yunyi, and both had become *jinsshi* by 1550.<sup>75</sup> Ling Yunyi was an administration vice commissioner, rank 3b, when he submitted his memorial. He did not specify whether the gentry exemption privilege should be revoked, but evidence suggests that he did not endorse its validity either. First, when discussing levying taxes on sandbank lands to raise more money for hydraulic management, he included gentry and non-gentry owners alike.<sup>76</sup> Second, he ignored the existence of landlords who would go to any length to evade their duties and portrayed the contemporary situation as if all landlords were “happy to make financial contributions and physically participate” in hydraulic works as long as there was good official leadership. They felt this way, he explained, because “the benefits and damages were close to themselves” (利害切身).<sup>77</sup> His selective representation of landlords’ attitudes implies a perspective close to those of Wu Yan and Zhou Fengming: they all saw that the consequences of hydraulic management would affect all landlords without exception. Gentry landlords, therefore, should take part in hydraulic works.

<sup>73</sup> Zhang Guowei, *Wuzhong shuili quanshu*, 25.68a-69b.

<sup>74</sup> Wang Qi, *Dongwu shuili kao*, 10B.24b.

<sup>75</sup> Wang Zushe 王祖畬, *Taicang zhou Zhenyang xian zhi* (Xuantong edition) (宣統) 太倉州鎮洋縣志 (rpt. Nanjing: Jiangsu guji chubanshe, 1991), 18.42a-b.

<sup>76</sup> Zhang Guowei, *Wuzhong shuili quanshu*, 14.62a-b.

<sup>77</sup> *Ibid.*, 14.61a.

Except for Ling's memorial, the common sixteenth-century opinion after Wu Yan and Zhou Fengming was that gentry exemption privileges *were* acceptable. However, some authors differed from officials like Cai Qian, Zhu Gun, Wang Pin, and Wei Yuankang by specifying two points: (1) the funds should be raised by collecting fees from the landlords who benefited from hydraulic works, and (2) the labor should be secured by recruiting the poor. On the issue of financial resources, Xue Shangzhi 薛尚質 (n.d.), who completed a series of essays on waterway management in Changshu in 1551, maintained that "if the extraction [of money] from people is for the purpose of the people, they will be happy to provide it without delay" (利民取民，民樂供而不後), and that "for every *mu* of land, one hundredth of a tael should be collected" (歲畝加銀一分). On the issue of labor service, Xue recommended hiring poor people and explained that the strong point of this method was "having the wealthy pay the money and the poor provide the labor" (富人出財，貧人出力).<sup>78</sup> Similarly, Mao Jieqing noted that for the maintenance of dikes and minor channels, landlords should pay their tenants for the labor they performed on their behalf.<sup>79</sup> Xue and Mao obviously took their cue from Yan Ruhuan, whose preferred method was "the wealthy provide the money and the poor provide the labor" (富家出錢，貧民出力).

In a very particular sense, Xue's and Mao's idea of dividing responsibility between the wealthy and the poor in terms of money and labor echoed Wu Yan's and Zhou Fengming's expectations for re-integrating local landlords back into their communities. Landlords could no longer be content with collecting rents without contributing to hydraulic work. They had a responsibility for public good and had to fulfill it by connecting with the poor in the communities where they owned land

<sup>78</sup> Xue Shangzhi 薛尚質, *Changshu shuilun* 常熟水論 (Shanghai: Shanghai shangwu chubanshe, 1936), 10, 11.

<sup>79</sup> Zhang Guowei, *Wuzhong shuili quanshu*, 22.67a-b. The text provides information permitting to date Mao's idea. Mao mentions the Jiajing 嘉靖 Emperor's posthumous title (22.66a) but does not say anything about Hai Rui's 海瑞 1570 project. Therefore, his text must have been written between 1567 and 1569. Mao was most likely a Taicang native, because he discusses a number of Taicang waterways. He had been a recognized hydraulic specialist since the 1520s. When Li Chongsi was in charge, Subprefectural magistrate Liang Gu 梁穀 had consulted with him to respond to Li's inquiries into the hydraulic situation (*Wuzhong shuili quanshu*, 22.71a-b).

through the payment mechanism underpinned by the beneficiary-pays principle. Still, by compromising and letting gentry landlords walk away from this demand, Xue and Mao supported the continuation of Li Chongsi's policy, which allowed the burden to fall disproportionately on non-gentry landlords. In other words, when considering both the theoretical discourse and actual government-supervised projects in the mid-sixteenth century, the original idea of Wu and Zhou, which generally defined all the people as the primary payers of water management, was adapted and, as a result, non-gentry landlords became the main payers.

*Lü Guangxun's Administration: Budgetary and Technological Modifications*

In the mid-sixteenth century context, Lü Guangxun's 呂光洵 (1518-1580) initiatives merit particularly close attention. Lü was an investigating censor when he was put in charge of hydraulic management in 1544. His position was different from Li Chongsi's in two ways: his rank was much lower (7a vs. 3a), and his tenure was much shorter (two years vs. six years). However, his area of responsibility was not smaller by any means: both Li and Lü were entrusted with the supervision of hydraulic works in the whole of South Zhili 南直隸. This large jurisdiction also distinguished Lü from officials such as Cai Qian, Zhu Gun, Wang Pin, and Wei Yuankang, whose efforts had been limited to the county level. With less administrative authority, more limited time, and a broad area to deal with, it was hard for Lü to fulfill his task properly; his burden was also increased by the fact that many people suffered from food shortages due to consecutive years of flooding.<sup>80</sup>

<sup>80</sup> See Lü Guangxun 呂光洵, "Sanwu shuili zouyi" 三吳水利奏議, 1a, in his *Sanwu shuili tukao* 三吳水利圖考 (1561; rpt. Beijing: Zhonghua quanguo tushuguan wenxian suowei fuzhi zhongxin, 1999). According to Huangfu Fang's 皇甫汭 (n.d.) preface, dated 1561, the draft had been completed by Lü Guangxun in 1544. It was composed of Lü's memorials and of the maps and documents he had collected. Lü left before the work could be published. Afterwards, the maps were stored in the prefectural library and the other materials were kept in his private study. Only after Wang Daoxing 王道行 (fl. second half of the sixteenth century) had come to the area as Suzhou prefect (1559-1562) and found that Lü's work was extremely useful for hydraulic management was the draft printed. For his part, Huangfu expressed the opinion that drainage should be considered as the focus of good maintenance.

To address these challenges Lü decided to extract money from the prefectural and county treasuries. He explained that since the “dredger men fees” had been used by officials for other purposes, it was reasonable to move money the other way around within the prefectural and county governments.<sup>81</sup> Doing so he could quickly secure the funds without double-charging the people. His decision regarding labor service was to set the beneficiary-pays principle as his guiding rule, but he put it into practice in a way different from mobilization based on landownership. The principle used to determine from how broad an area people were to be recruited was: “people are to be called on to work if a waterway benefits their place” (其所役之人，各因其水之所利，隨地而用之).<sup>82</sup> Yet he did not recruit all the people who fell within this category. Rather, he intended to hire those who were without food.<sup>83</sup> In other words, his main concern was to use governmental funds to relieve the poor.

Lü's method deviated from those of Li Chongsi's two assistants and others within Li's legacy. He used governmental funds instead of making the people the primary payers. In the eyes of such local literati as Xue Shangzhi and Mao Jieqing, who voiced their opinions later, his strategy could not be satisfactory because, even though it paid attention to the poor, it did not aim to integrate the wealthy back into their communities since it did not adopt the “wealthy provide money and poor provide labor” approach. In terms of work for relief, the connection was between the government and the poor exclusively. As a result, Lü did not respond to the expectation of an institutional re-integration of landlords into their communities, since private profit and public good remained unrelated. Nevertheless, he did share with both officials and local literati—except radical reformists like Wu Yan, Zhou Fengming, or Ling Yunyi—the view that gentry exemption privileges should remain as they were.

Lü also made crucial decisions on how to advance the technologies developed during Li Chongsi's administration for enhanced budgetary control. Before his time, there had been two ways of dredging waterways under official supervision. The first was to focus on the length of the

<sup>81</sup>) Lü Guangxun, “Sanwu shuili gong ji yi” 三吳水利工計議, 9a-b, in his *Sanwu shuili tukao*.

<sup>82</sup>) Lü Guangxun, “Sanwu shuili zouyi,” 10a.

<sup>83</sup>) Ibid., 6a-b, 10a.

waterway. For example, in 1471 Assistant Surveillance Commissioner Wu Bin 吳珣 (n.d.) ordered that the Wusong River be dredged on a length of 17,061 *zhang* 丈 (about 50 km), which would require the mobilization of 68,245 workers.<sup>84</sup> In 1530, Zhu Gun likewise established guidelines for estimating dredging projects which were based largely on length.<sup>85</sup> The second method, which emerged with Yan Ruhuan's project, emphasized that planning must take account of width and depth as well.<sup>86</sup> With three-dimensional measuring, the quantity of earth to be removed could be accurately calculated in terms of *fang* 方 (cubic *zhang*). Then the volume of earth could be converted into the number of workers necessary to move it. The conversion was effected through an intermediate unit called *gong* 工 (work unit).<sup>87</sup>

There are crucial differences between these two methods. The former certainly could not match the latter in effectiveness: without setting a standard for width and depth, the sandbanks along the rivers and the silt in riverbeds could not be consistently removed to ensure the steady drainage of a waterway. In other words, the effectiveness of a given dredging project could not be guaranteed. Likewise, from the perspective of budget-control the second method was unquestionably superior: given precise information about how much work was to be done, officials could form a clear idea of how many workers would have to be hired and how many days would be needed to complete the project. Finally, adding in the wage factor (*gongshi yin* 工食銀, lit. "silver for salaries"), one could easily obtain a clear budget estimate including total labor costs. In fact, Yan Ruhuan did use the formula "one cubic *zhang* = twenty work units = 0.5 tael of silver."<sup>88</sup> Indeed, the emergence of this new method in Yan's project was not accidental. As discussed earlier, as Li Chongsi's assistant Yan was the first official to put the reformist benefi-

<sup>84</sup>) Zhang Guowei, *Wuzhong shuili quanshu*, 15.17a.

<sup>85</sup>) Ibid., 15.65a.

<sup>86</sup>) Ibid., 15.51b-52a. I agree with Hamashima's view that the first project to include an estimation of the width and depth in its calculations was Yan Ruhuan's Wusong dredging project. See *Mindai Kōnan nōson shakai no kenkyū*, 139.

<sup>87</sup>) See Lü's explanation of this gauging process in his "Sanwu shuili gong ji yi," 1a. The definition of a *fang* as a cubic *zhang* is unambiguous (四面深闊各一丈，名曰一方). There existed a different definition in the Qing: see Will, *Bureaucracy and Famine*, 262-63, esp. n. 97.

<sup>88</sup>) Lü Guangxun, "Sanwu shuili gong ji yi," 1b, quoting Yan's formula as precedent.

ciary-pays principle into practice, and his application of it was broad and general. Yan's invention of the cubic *zhang*/work unit/payment formula gave the principle a calculable basis upon which to realize it. While "profit" seemed simply a concept in the reformist elite's discourse, Yan's formula made it possible to define it in budgetary terms.

Lü Guangxu followed Yan's path but pushed one step farther. He referred first to a measure used in private construction: one cubic *zhang* required eight work units to complete and cost 0.2 tael of silver. He took this as an excuse for reducing spending. He admitted that public work was certainly more difficult than private work—as shown in Yan's formula, one cubic *zhang* of public work required the input of twenty work units, or 2.5 times what private work required. But he contended that Yan's formula was too generous. He proposed that the payment for public work be only double that for private work: in his eyes, 0.4 tael for one cubic *zhang* would be appropriate.<sup>89</sup> In other words, his formula was "one cubic *zhang* = sixteen work units = 0.4 tael." Furthermore, since Lü specified that one cubic *zhang* equaled the amount of work that two men could do in eight days, or four men in four days, it is obvious that one work unit was what a man could do in one day.<sup>90</sup> Therefore, if a man worked for one day, he would be paid one fortieth of a tael of silver, or 2.5 *fen* 分.

Lü did put his revised formula into practice. He conducted a thorough survey of all the waterways in his jurisdiction and compiled a long list with full information on their condition, including whether they needed to be dredged, what was their length, width, and depth, how much earth had to be moved, how many work units were needed, and how much silver was required for payment.<sup>91</sup> Upon closer inspection, however, it appears that Lü did not stick systematically to his formula. For instance, for the Shan Channel 山涇 in Changshu, the earth to be removed was 14,901 cubic *zhang*, there were 178,812 work units, and the total

<sup>89</sup>) Ibid., 1a-2b.

<sup>90</sup>) Ibid., 7b. The text reads as follows: 每方派夫二名則以八日為限；每方派夫四名則以四日為限。

<sup>91</sup>) Lü did on-site investigations by himself. See He Liangjun 何良俊, *Siyoushai congshuo* 四友齋叢說 (Beijing: Zhonghua shuju, 1997), 121. Evidence shows that Lü did put his plan into practice. See, for example, Qian Lucan 錢陸燾, *Changshu xianzhi* (Kangxi edition) (康熙) 常熟縣志 (rpt. Nanjing: Jiangsu guji chubanshe, 1991), 6.21b; Chen Xiang, *Wujiang xianzhi* (Qianlong edition), 41.12b.

payment was 4,470.3 taels. This means that twelve work units were invested to remove one cubic *zhang* of earth, on which only 0.3 tael was spent. The Qipu Channel 七浦塘 was similar. But for the Baimao Channel, one cubic *zhang* cost 0.5 tael for twenty work units.<sup>92</sup> In other words, Lü was flexible about the conversion between cubic *zhang* and work units—adjustment could be made according to the difficulty of the work. What he really insisted upon was the value of one tenth of a tael: it must be fixed at four work units. Table 2 shows the particulars of the several formulas:

Table 2: Formulas for the conversion of cubic *zhang*, work unit, and payment

		cubic <i>zhang</i>	Work units	taels of silver
Yan Ruhuan	fixed rate	1	20	0.5
Lü Guangxun	fixed rate	1	16	0.4
	flexible rate	1	12	0.3
Private work	fixed rate	1	8	0.2

With his fixed rate and his flexible case-by-case approach, Lü had convenient tools not only to estimate a construction project, but also to allot money for individual works. It would have not been possible for him to do so without the precedent set by Yan Ruhuan, who had already well embodied the spirit of the beneficiary-pays principle.

Lü's survey of his jurisdiction's waterways also helped him redefine the division of responsibility between the government and people. Before his time, the government would only raise funds for large projects, leaving the smaller ones to the people. Lü invented an intermediate category. He held that even though some waterways were by definition the people's responsibility, they could not be maintained satisfactorily by the people alone. Among waterways he therefore inserted a category called "those which the government will consider assisting in their repair and dredging" (官量助修濬) between the categories of "those which the people will repair and dredge" (民自修濬) and "those for which the government will conduct the repair and dredging" (官為修濬).<sup>93</sup> Apparently, these three categories simply reinforced the existing division of responsibility

<sup>92</sup>) Lü Guangxun, "Sanwu shuili kao" 三吳水利考, 16a, in his *Sanwu shuili tukao*.

<sup>93</sup>) See, for example, *ibid.*, 16b.



between government and people: the government was to find a way to secure the funds for large projects. As discussed before, however, Lü's strategy to fulfill the government's responsibility significantly differed from Yan's: while the latter raised the necessary funds by collecting fees from the people, Lü assembled money from the prefectural and county governments. He could no longer transfer this kind of burden to the people in the name of the beneficiary-pays principle by means of extra fees like Yan Ruhuan had done. Neither could he collect the "dredger men fees" which Lin Wenpei had used. Since the government became the payer for large projects, Lü's stance on the applicability of the beneficiary-pays principle was also clear: it had to be narrowed to the intermediate and lower categories of hydraulic objects. Table 3 summarizes their differences:

Table 3: Comparisons among Yan Ruhuan, Lin Wenpei, and Lu Guangxun

	Application of the beneficiary-pays principle	Mobilization based on landownership	People as the primary payers	Division between the government and people	Revocation of gentry exemption privileges
Yan Ruhuan	Yes	Yes	Yes	Yes <sup>b</sup>	No
Lin Wenpei	Limited to small works	Limited to small works	Yes	Yes <sup>c</sup>	No
Lü Guangxun	Limited to small and medium works	No/unclear <sup>a</sup>	Limited to small and medium works	Yes <sup>d</sup>	No

Notes:

<sup>a</sup> Work for relief in large-scale works; unclear in small- and medium-scale works

<sup>b</sup> Government collects extra fees from the people by landownership

<sup>c</sup> Government collects dredgers men fees by the *lijia* 里甲 system

<sup>d</sup> Government uses governmental funds

Furthermore, Lü's three categories, which were based on thorough surveys, made all local waterways visible to the government such that they became manageable objects. They also gave the government full control over the local situation, including knowledge of where and how much the government would have to invest in resources in order to help people achieve the desired goal. In other words, a deeper penetration into local society was a by-product of Lü's budgetary-technological modifications

to the Li Chongsi legacy. This would inevitably lead officials to confront the gentry landlords, since “profit” had become a meaningful, calculable, and budget-wise way to define the relationship between the government and people as well as between the landlords and their communities.

*Lin Yingxun's Deviation from Li Chongsi's Legacy: The Confrontation with the Gentry and the Re-division of Responsibility between the Government and People*

Investigating Censor Lin Yingxun 林應訓 (fl.1570s-1580s) was appointed as regional hydraulic official in 1576—his jurisdiction included Suzhou, Songjiang, Changzhou, and Zhenjiang 鎮江 prefectures. He basically followed what Lü Guangxun had laid out but made a significant deviation from Li Chongsi's legacy by taking up the challenge of revoking gentry exemption privileges. Lin took the path paved by Lü in several respects: (1) the government paid for the dredging of major waterways; (2) the rate of payment was set at 0.1 tael for four work units;<sup>94</sup> and (3) the three-category division of waterworks was resorted to. Since the government funded projects concerning the Wusong River and other large channels like the Baimao, the beneficiary-pays principle did not apply there.<sup>95</sup> On the other hand, Lin had waterways belonging to the intermediate category dredged cooperatively by the government and people. For example, after the central government had turned down his request for 30,610 taels to dredge the Puhui Channel 蒲匯塘, he worked with his assis-

<sup>94</sup> This can be inferred from the information provided. For example, to dredge a portion of the Wusong River in Songjiang cost 45,739 taels for 114,348 cubic *zhang*. See Zhang Neiyun 張內蘊 and Zhou Dashao 周大韶, *Sanwu shuikao* 三吳水考 (SKQS), 11.9b-10a. Assuming one cubic *zhang* requires sixteen work units to complete, the total comes to 1,829,568 units. At 0.1 tael for every four units, the total cost will be 45739.2 taels, almost exactly the figure given in the source. According to SKZM (69.15b-16a), Zhang Neiyun, a government student (*shengyuan*) from Wujiang, and Zhou Dashao, a National University student (*jiansheng*) from Huating, are the real authors of the 16-juan *Sanwu shuikao*, even though Xu Shi's 徐氏 (1519-1581) and Liu Feng's 劉鳳 (fl.1540s-1580s) prefaces attribute it to Lin Yingxun. Xu's preface (dated 1580) gives the title as *Shuili tushuo* 水利圖說, but both Liu and Huangfu Fang 皇甫汴 refer to it as *Sanwu shuikao* in their prefaces (dated 1581 and 1582 respectively), suggesting that the title was changed after the completion of the book. All three prefaces praise Lin for his concentration on unobstructed drainage and orderly and comprehensive method of dredging waterways and repairing dikes, as reflected in the book.

<sup>95</sup> Zhang Neiyun and Zhou Dashao, *Sanwu shuikao*, 11.12b-13a.

tants to make adjustments to his original plan and find other sources of funding.<sup>96</sup> He eventually secured about 18,810 taels from two different sources—fines and income from selling confiscated land (14,200 taels, or 46.39%), and governmental funds (4,607 taels, or 15.05%)—amounting to no more than seventy percent of what had been originally proposed. But Lin decided to ignore the shortfall and adopted the principle of “mobilization based on landownership” to recruit people from several counties, arguing that this was “to use people’s services for the people’s benefit” (以利民之事而用民之力).<sup>97</sup> He also divided responsibility for dredging several waterways to the tune of “seventy percent government dredging and thirty percent people’s labor” (官濬七分，民力三分).<sup>98</sup> He thus provided Lü Guangxun’s intermediate category with a clearer definition of the division between government and people. As for small waterways, they were all to be taken care of by the population.<sup>99</sup> In other words, the beneficiary-pays principle was only applied to small- and medium-scale works. Even though Lin showed flexibility when confronting difficulties that required resorting to the “work for relief” method, he did not change the crucial place of the beneficiary-pays principle in his hydraulic management.<sup>100</sup>

<sup>96</sup> Ibid., 11.24a-b, 25a, and 28b.

<sup>97</sup> Ibid., 11.36b-37a.

<sup>98</sup> Ibid., 12.68b.

<sup>99</sup> Ibid., 11.10b, 12b.

<sup>100</sup> Lin used “work for relief” for his Sanzhang Channel 三丈浦, Dawa Channel 大瓦浦, and Heng Channel 橫塘 projects in 1579. See *Sanwu shuikao*, 12.59b and 71a-b. The choice was not arbitrary: between this set of projects and the ones of the preceding year several floods had occurred in early 1579. In the aftermath of the floods, Lin submitted a series of memorials for famine relief. See *Sanwu shuikao*, 12.38a-57b. The dredging of the Sanzhang, Dawa, and Heng Channels was part of the flood abatement effort, and Lin argued that it was reasonable to have people work for relief in these projects. His decision was not made solely because of the floods, however: timing was also a decisive factor. The Sanzhang, Dawa, and Heng projects came after Lin had finished with the Puhui project in 1578 and with the Baimao project earlier in 1579. For the Puhui project, people had been mobilized on the basis of landownership, while for the Baimao project sandbank lands had been taxed. See *Sanwu shuikao*, 11.36a and 13.62a. Had he adopted the beneficiary-pays principle and the method of mobilization based on landownership for the Sanzhang, Dawa and Heng projects, Lin would have imposed a double burden on the people. This was because (1) the areas from which people had to be mobilized to work on the Puhui project and on the Dawa and Heng projects overlapped considerably (they included Shanghai 上海, Huating, and Qingpu 青浦 counties), and (2) the Baimao and Sanzhang Channels were both located in Changshu

In adopting the three categories defined by Lü Guangxun, Lin already moved away from the Li Chongsi legacy. However, what sharply distinguished him from his predecessors in the sixteenth century was his decision to revoke gentry exemption privileges. As stated before, investigating the three categories helped officials go deeper into local society and acquire better knowledge of actual situations. In this context, Lin was eventually led to confront gentry landlords who did not share the views of Wu Yan, Zhou Fengming, or Gu Qing, and had been left alone by Yan Ruhuan, Lin Wenpei, and Lü Guangxun. One of Lin's "Six Rules on Managing the Fields," which addressed the issue of labor service for local works, drives the point home:

Although the length and width of ditches, creeks, and dikes vary from one village to another, all of them have been set up for the fields of particular polders ... [1] The water [brought by one particular ditch] benefits the fields of one particular polder; therefore, [the maintenance work] should be demanded from the landlords of this same polder. Every county should immediately order the channel administrators to report the length of dikes and surrounding ditches of each polder, the area of land inside, the number of *mu* owned by each landlord, and the length of dikes for which each landlord is responsible. [2] Whether one is official or citizen, gentry or commoner, should not be taken into consideration; labor service is calculated after landownership and [each landowner] must provide the work individually. [3] If their lands border the dike for one *zhang*, they must repair one *zhang* of dike ... The same applies to the dredging of waterways. Households on each side of the waterway should be responsible for half of the work. In the case of dikes along the outlet of a waterway, which are [too difficult] for one household to maintain, people should cooperatively provide labor according to the land they own ... [4] In the case of gentry-owned lands, it is required that the landlord provide food and the tenants provide labor; they will be paid per work unit...

各鄉溝洫圩岸，雖有長短廣狹不齊，然不過為一圩之田而設也。……〔1〕此水利此圩之田，則當役此圩有田之戶矣。各縣即令塘長備開某圩週圍若干丈，外環溝洫若干丈，圩內之田若干畝，某人得業若干畝，共該圍岸若干丈。〔2〕不論官民士庶，隨田起役，各自施工。〔3〕如田橫濶一丈者，築岸一丈……。開河亦然。對河兩家各開其半，溝頭岸側，非一家所能辦者，計

county: had he taxed the sandbank lands for the Sanzhang project, they would have been taxed twice in the same year. See *Sanwu shuikao*, 11.24b and 12.68b. What distinguished Lin Yingxun from Lü Guangxun, despite the similarities, is that while Lü simply employed the "work for relief" method without seeking an alternative first, Lin made it clear that the beneficiary-pays principle was the top priority in his water management.

畝出夫，衆共協力。……〔4〕鄉宦之田，須是田主出食，佃戶出力，計工給發……。<sup>101</sup>

In his first point, Lin makes a clear connection between the benefits enjoyed by landlords and the labor service they have to provide. In so doing, he applies the beneficiary-pays principle to water management at local level. His second point shows that the basis of application is landownership and it is unequivocally stated that non-gentry and gentry landlords must be treated in the same way, no exemptions being granted to the gentry. The combination of these two points marks the first and complete realization of the ideas first proposed by hydraulic reformers like Wu Yan, Zhou Fengming, and Gu Qing about half a century earlier. But Lin makes an abrupt turn with his third point. He changes the measure by which workers used to be recruited—what Hamashima Atsutoshi has called the “field-frontage system” (*tiantou zhi* 田頭制), implemented in the late fifteenth century.<sup>102</sup> Instead of holding all landlords responsible for hydraulic work, Lin’s compromise stipulates that only landlords whose lands are adjacent to polder dikes and ditches will have to provide labor service.

This abrupt change in policy has attracted the attention not only of modern scholars like Hamashima,<sup>103</sup> but also of Ming scholars, among them Xu Guangqi 徐光啟 (1562-1633).<sup>104</sup> Without doubt it reflects the

<sup>101</sup> Zhang and Zhou, *Sanwu shuikao*, 14.32b-33b (numerals added).

<sup>102</sup> For detailed discussion of the “field-frontage system,” see Hamashima, *Mindai Kōnan nōson shakai no kenkyū*, 57-106, and Cho-ying Li, “Contending strategies,” 246-49.

<sup>103</sup> Hamashima (*Mindai Kōnan nōson shakai no kenkyū*, 46-53) argues that Lin adopted the field-frontage system to ease the pressure from gentry resistance. While I agree that Lin chose this approach as a way to compromise with the gentry, I think one must also consider the function of the field-frontage system and the historical situation in which Lin made his decision. As the Zhengde and Jiajing (1522-66) reigns witnessed the decline of the *lijia* system, to which Hamashima argues the field-frontage system corresponded, it does not seem reasonable to imagine that landowners would adhere to the field-frontage system in order to dominate local society and secure private gain. (For a discussion of the connections between the *lijia* system, field-frontage method, and landowners’ dominance, see Hamashima, “Mindai zenhan no kōnan deruta no suiri kankō: dentōshi saikō” 明代前半の江南デルタの水利慣行——田頭制再考 *Shichō*, new ser. 3 [1978]: 87-104, and *Mindai Kōnan nōson shakai no kenkyū*, 9-65, esp. 42-47, 67-90, and 142-59, esp. 144-47.) Accordingly, the reason why the field-frontage system could serve as common ground for Lin Yingxun and the gentry landowners needs to be reconsidered, and I will attempt an explanation below.

<sup>104</sup> See Xu Guangqi 徐光啟, *Nongzheng quanshu* 農政全書 (SKQS), 14.16a. Xu, a 1604 *jinsbi*, was a scholar of a later generation.

strong resistance of gentry landlords. But under closer analysis Lin's compromise cannot be characterized as a complete retreat from his attempt to revoke gentry landlords' privileges. As his fourth point demonstrates, under the field-frontage system gentry landlords were not entirely exempted from labor service, even though they were allowed to pay the tenants who did the work on their behalf. This was a skillful way to achieve the revocation of gentry privilege in the end. The original plan would have generated collective opposition from gentry landlords. But the new ruling significantly reduced opposition because it affected only those gentry landlords whose fields bordered the infrastructures to repair. In this way, Lin managed to codify a place for gentry landlords in water management.

Under his administration, the landlord-community relations to which the reformist elite aspired were set up to a certain extent. In particular, while earlier administrators like Yan Ruhuan simply adopted generic formulas such as "the wealthy pay and the poor work," Lin specifically defined the problem in terms of landlord-tenant relations. The problem that Wu Yan had identified in the early sixteenth century as one of the major causes of deteriorating hydraulic conditions—"when poor people farm lands for wealthy families they do not consider the lands as their own, and wealthy families only care about rents"—was fundamentally solved. Furthermore, since the rationale behind the field-frontage system, as the late-fifteenth-century hydraulic specialist Jin Zao elaborated, was to have those who could conveniently benefit from waterways do the maintenance,<sup>105</sup> Lin's use of this system still kept his policies aligned to the beneficiary-pays principle. Private profit and public good were reciprocally connected through the intervention of the government. It was also a positive response to the expectations of the reformist elite.

That Lin Yingxun should be able to achieve so much was not accidental. The first realization of the beneficiary-pays principle in the Li Chongsi administration had opened the way, and Lü Guangxun's budgetary-technical modifications also played an indispensable role. Equally if not more important, however, were the episodes of corvée reform that began in the mid-sixteenth century and Lin's connection to Grand Secretary Zhang Juzheng 張居正 (1525-1582). As early as 1545, the Ming

<sup>105</sup> See Yao Wenhao 姚文灝, *Zhexi shuili quanshu* 浙西水利全書 (SKQS), 3.28a-b.

government had issued a new set of restrictions on gentry exemption privileges.<sup>106</sup> Clearly, the government was forced to take action because manipulation of their privileges by the gentry had resulted in a shrinkage of the corvée and tax bases. Similar efforts continued in the second half of the sixteenth century. Thus, Song Yiwang 宋儀望 (fl.1540s-1570s) was dispatched to the Lower Yangzi Delta as grand coordinator by Zhang Juzheng in 1574 on a special mission, a major purpose of which was to implement strict restrictions on gentry exemption privileges;<sup>107</sup> his tenure lasted until 1576. When Hu Zhili 胡執禮 (?-1589) succeeded Song, Zhang entrusted him with the same task.<sup>108</sup> Lin Yingxun thus enjoyed strong central government support for his policy of forcing gentry landlords to pay for their tenants through the field-frontage system. In addition to official cooperation in the field, evidence also shows that Lin was among Zhang Juzheng's confidants.<sup>109</sup> Support from formal and informal avenues thus enabled him to take a firm stance on the revocation of the gentry's exemption privileges. Yet, as we have seen, even with such strong backing, Lin was still unable to push revocation of the gentry's exemption privileges to full completion. Gentry resistance ultimately stymied full government penetration into local society. Or to say it otherwise, coercion found its limits. Not until the early seventeenth century did objective factors combine with persuasion to enable the full realization of the beneficiary-pays principle.

### The Full Realization of the Beneficiary-pays principle in the Seventeenth Century

The precedents set by Lü Guangxun and Lin Yingxun provided Changshu Magistrate Geng Ju 耿橘 (fl. 1600-1610) with a solid foundation to bring the realization of the beneficiary-pays principle to completion during his tenure, from 1604 to 1607. Two of their methods adopted

<sup>106</sup> See *Ming huidian* 明會典, ed. Shen Shixing 申時行 et al. (rpt. Beijing: Zhonghua shuju, 2007), 20.7a.

<sup>107</sup> See Wei Qingyuan 韋慶遠, *Zhang Juzheng he Mingdai zhonghouqi zhengju* 張居正和明代中後期政局 (Guangzhou: Guangdong gaodeng jiaoyu chubanshe, 1999), 584-86.

<sup>108</sup> Ibid., 632-34. Even though Hu did not get along with Zhang afterward, he still supported Lin's water management. See *Ming Shenzong shilu* 明神宗實錄, ed. Gu Bingqian 顧秉謙 (Taipei: Zhongyang yanjiuyuan lishi yuyan yanjiuso, 1984), 73.16b, 212.11b.

<sup>109</sup> *Ming Shenzong shilu*, 147.4a; Wu Liang 吳亮, *Wanli shuchao* 萬曆疏鈔 (XXSK), 10.3a.



by Geng for water management were the three-category investigation of hydraulic infrastructures and the use of the cubic *zhang*/work unit/payment formula. Geng stated clearly that dredging again the Baimao Channel would be a large project and that funding from higher authorities would be necessary.<sup>110</sup> Beyond this larger and more difficult project, his survey consistently identified other waterways and polder dikes that should be maintained through the cooperation of the government and people, and some others that it was incumbent upon the people to maintain by themselves.<sup>111</sup> In his report on the dredging of the Fushan Channel 福山塘, the Xi Channel 奚浦, and the Sanzhang Channel, he stated that for the first of these 7,448.5 cubic *zhang* of earth had to be removed, each cubic *zhang* requiring sixteen work units; he then reduced the payment to 0.2 tael per unit.<sup>112</sup> With the two methods developed by Lü and Lin in the sixteenth century, Geng was thus able to obtain comprehensive knowledge of hydraulic conditions in his jurisdiction and full control of the construction budget.

Despite their usefulness, however, these two methods could not solve all the problems, especially those concerning the source of funds. Geng brought his effort to bear on two fronts. He tried to convince non-gentry landlords to shoulder the financial burden, but they refused. He also sent a request for help to the Suzhou prefectural government, but here again it was rejected.<sup>113</sup> Because of the prefectural government's refusal, Geng had no chance to obtain money from the central government. With only limited resources available to him, he might have suspended the whole project. Yet the prefectural government's rejection came with an instruction:

<sup>110</sup> Geng Ju 耿橘, *Changshu xian shuili quanshu* 常熟縣水利全書, seventeenth-century edition (microfilm at Harvard-Yenching Library), 3.3a. According to the preface by Lu Huachun 陸化淳 (fl. late sixteenth century-early seventeenth century), the book (in 10 *juan* and 2 *juan* of appendixes) reflects Geng's hydraulic thought and action during in his tenure as Changshu magistrate. It must therefore have been completed around 1610. According to Lu, Geng won the heart of the Changshu population by his initial success in dredging several main waterways, and this he attributed to Geng's full grasp of hydraulic conditions and well planned management.

<sup>111</sup> See, e.g., Geng Ju, *Changshu xian shuili quanshu*, 1.12b, 3: *zong* 總 5a, 3.8a-b, 3.12a-b, and 3.23b.

<sup>112</sup> Ibid., Appendix A: 17b-18a.

<sup>113</sup> Ibid., Appendix A:10b.

When dredging a waterway, do not consider the distance between the waterworks [and the lands benefiting], do not take account of whether the landlords are official families or commoners, ignore fraudulent trusteeship and fragmentary landownership. No matter how small the plots, make your calculations all in the same manner, and apportion work according to landownership.

開河之役，不論水利遠近，毋拘官戶小民，不問花分詭寄，不論田數奇零，一概通融計算，照畝派工。<sup>114</sup>

This directive, which echoed Wu Yan and Zhou Fengming's proposals of almost eighty years earlier, clearly pointed in the direction of revocation of gentry privileges and of mobilization based on landownership. Still, as the example of Lin Yingxun revealed, even strong government backing might not be enough to force an order like this to take effect. Geng could reasonably expect resistance from gentry landlords.

He therefore initiated negotiations with the gentry, first consulting three influential local families, the Qians 錢, the Jiangs 蔣, and the Xiaos 蕭. All supported the instructions of the prefectural government. With this support, Geng then sent a letter to all gentry landlords in Changshu county. After explaining that his efforts with the higher authorities and with non-gentry landlords had failed, he elaborated as follows:

Gentry families have fairly large amounts of lands. The benefits and damages, gains and losses generated by dredging projects concern the well-being of [the gentry] as well as the commoners. This is why [dredging waterways] is not the same as other kinds of corvée. If the gentry indeed enjoy exemption and one relies solely on the commoners' forces, people available will be fewer and fewer and the work will be further delayed. Public opinion will be unhappy, and complaints will boil over.

官宦之產，其數頗多。開濬河道，其利害得失與百姓同關休戚。較與別項雜差，事體不侔。若竟優免于縉紳而獨用乎民力，則人愈少而工愈遲。輿論不愜，刁怨沸騰矣。<sup>115</sup>

Geng makes several crucial points in this passage. First, he argues that the beneficiary-pays principle should be applied to all landlords without consideration of social status. Second, he reasons that non-gentry and gentry landlords enjoy the benefits of waterworks in the same way. With these two points, Geng appeals to the gentry landlords' sense of

<sup>114</sup>) Ibid., Appendix A:10b.

<sup>115</sup>) Geng Ju, *Changshu xian shuili quanshu*, Appendix A:10b-11a.

responsibility. Third, he emphasizes that if gentry landlords decide not to participate in water management, then the projects will never be completed because of resistance from the commoners. In other words, the benefits that gentry landlords expect from the maintenance of waterways and polder dikes will be lost altogether. And, fourth, Geng suggests a compromise by maintaining that “[dredging waterways] is not the same as other kinds of *corvée*”: while advocating the cancellation of gentry exemptions as far as hydraulic projects are concerned, he insists on the unique nature of water management and assures the gentry that the revocation of their privileges won’t apply to other kinds of labor services.

Reportedly, Geng’s letter met an overwhelmingly positive reaction. The gentry agreed that the beneficiary-pays principle justified the revocation of their exemptions. For instance, Shen Yingke 沈應科 (fl. 1570s-1610s), who had retired as Guangxi 廣西 Assistant Administration Commissioner (rank 4b), responded, “Who would dare to argue that the life of gentry and commoners is different? Even if commoners are willing to follow the model of Jiading [i.e., to be the sole source of labor], we gentry are willing to follow the model of Taicang [i.e., to participate in the work]” (敢以官民生異議乎？即小民願為嘉定，而生輩亦願為太倉).<sup>116</sup> For his part, Weng Xianxiang 翁憲祥, then a supervising secretary (rank 7b), replied, “The gentry are the leaders of scholars and commoners. If they enjoy the benefits but let the commoners bear all the burden, how could they feel at peace in their hearts?” (縉紳為士民領袖，倘使己蒙其利，而小戶獨任其勞，此心何能安也).<sup>117</sup> Qian Dai 錢岱 (1542-1622), who was in retirement as investigating censor (rank 7a), also endorsed Geng’s ideas by paraphrasing his statement translated above.<sup>118</sup>

Thanks to this support, the beneficiary-pays principle was put fully into practice for the first time.<sup>119</sup> By this rule, landlords were to provide

<sup>116</sup> Ibid., Appendix A:11a. As I will discuss below, the Taicang model was set by an influential gentry, Wang Xijue 王錫爵, who gave up his privileges and contributed to hydraulic management.

<sup>117</sup> Ibid., Appendix A:15a.

<sup>118</sup> Ibid., Appendix A:12a.

<sup>119</sup> If we are to believe Zhang Nai 張鼎 (fl. early seventeenth century), Geng’s plan may still have encountered some resistance. See Zhang Nai, *Baoritang chujì* 寶日堂初集, *Siku quanshu jinhui shu congkan* 四庫全書禁燬書叢刊 edition (Beijing: Beijing chubanshe,

one worker for every forty *mu* of owned lands, or an equal amount of silver as compensation payment for their tenants.<sup>120</sup> In the latter case, Geng established a special certificate issued by the government to the tenants, with which they could be assured of receiving due payment from their landlords.<sup>121</sup> When the consensus was reached and the rate set, the revocation of gentry landlords' exemption privileges became a fact,<sup>122</sup> and landownership was used as the only measure to calculate one's responsibility. The "landlords pay and tenants work" method developed by Lin Yingxun was also put into practice.<sup>123</sup> A generally

1995-2000), 16.42b-43a. Hamashima uses Zhang's account to argue that resistance was severe (see *Mindai Kōnan nōson shakai no kenkyū*, 432-35). But Zhang's description of the situation is clearly exaggerated. In his words, "when Geng issued his order, all of them resisted and refused to comply" (令下，率抗不服). In fact, we can see in *Changshu xian shuili quanshu* that at least fifteen gentry leaders responded positively to Geng's call (Appendix A: 11a-16a), while more than thirty gentry's names were listed in the stele inscriptions recording Geng's achievements (Appendix B: 9a-9b, 13b, 15b). Only two pieces of evidence give hints of resistance. One is about landowners in Gui Town 歸市 who tried to make the town residents pay for the dredging projects. Geng did not tolerate such attitude and threatened to put the offenders to the cangue and severely punish them without any forgiveness (枷號重治不恕) (Appendix A: 25b-26a). The other case of resistance concerns a certain Zhang Wenxian 張文獻, an estate manager of Marquis Song Gang 宋綱. Zhang argued that since some tenants still owed Song rents from previous years, it was reasonable to remit these arrears in exchange for the work the tenants did on Song's behalf. Geng pointed out that the gentry landlords "all revered righteousness" (俱尚義) and that he would not tolerate such arrogance (*xiaoxiao* 囂囂) on the part of Zhang Wenxian (Appendix A: 23b-24a). Zhang Nai may have relied on these two cases to describe the Changshu situation as fraught with resistance, and perhaps he alludes to the second one when he says that "Geng shackled bondservants of noble and powerful households" (公械貴人豪室僕), Zhang Wenxian being actually a bondservant of Marquis Song. But I do not think it appropriate to generalize from Zhang's words and claim that gentry landowners did not cooperate with Geng. After all, the first case concerned only a limited area in Changshu, and the second one mentioned a single unranked individual, even though his master, Song Gang, must indeed have been someone powerful—he may have been the person who later got Geng into trouble over his promotion. In short, I do not see any reason to downplay the significance of the general support that Geng received from gentry landowners.

<sup>120</sup> Geng Ju, *Changshu xian shuili quanshu*, Appendix A:17b. The compensation payment for one worker was 1.1232 taels of silver. The payment was calculated by the following formula: a worker was responsible for 1.755 cubic *zhang*; every cubic *zhang* equalled sixteen units of work; every unit of work was paid 0.04 taels of silver. Since Geng Ju agreed to take care of half of the payment with government funds, landlords had to pay 0.5616 taels to each tenant.

<sup>121</sup> A model of the certificate is provided *ibid.*, 1.19a. See also Hamashima, *Mindai Kōnan nōson shakai no kenkyū*, 169-73.

<sup>122</sup> See, for example, Geng Ju, *Changshu xian shuili quanshu*, Appendix A:17b and 30a.

<sup>123</sup> *Ibid.*, 1.18a-19a. Hamashima has relevant research on this issue. See *Mindai Kōnan nōson shakai no kenkyū*, 167-81.

applicable rule was institutionalized, the result of which was that landlords were reintegrated into the communities where their lands were located and the connection between private profit and public good was established in reciprocal terms.

The response of the Changshu gentry can be explained in two ways: practical concern, and a sense of responsibility. Thus, Qian Dai, Geng's most vocal supporter, noted that the Sanzhang Channel greatly served his family interests and that since the late fifteenth century the Qian family had twice managed to talk officials into launching a dredging project. The entire cost had been covered by the government,<sup>124</sup> but now the government would no longer take on the burden, as the prefectural government's response to Geng's request for funds showed. If the gentry landlords refused to assume financial responsibility, then the waterways would be left to silt up, public works would deteriorate, and their private gains would disappear as a consequence. Regarding responsibility, we may note that, like Lin Yingxun, Qian Dai was a confidant of Zhang Juzheng.<sup>125</sup> He most likely agreed with Zhang's determination to put rigid restrictions on gentry exemption privileges and with Lin Yingxun's unsuccessful attempt to revoke these privileges.

Scholars have argued that Geng's efforts succeeded because he had the backing of Grand Coordinator Zhou Kongjiao 周孔教 (fl. 1580s-1613), and furthermore that the Donglin Academy 東林書院 circle, whose leaders were Gu Xiancheng 顧憲成 (1550-1612) and Gao Panlong 高攀龍 (1562-1626), was also instrumental to his achievements.<sup>126</sup>

<sup>124</sup>) Zhang Neiyun and Zhou Dashao, *Sanwu shuikao*, 16.43b-45a.

<sup>125</sup>) Wang Shizhen 王世貞, *Jiajing yilai shoufu zhuan* 嘉靖以來首輔傳 (SKQS), 8.16b; *Ming Shenzong shilu* 147.4a; *Ming shi* 明史, ed. Zhang Tingyu 張廷玉 et al. (SKQS), 220.17b.

<sup>126</sup>) See Hamashima, *Mindai Kōnan nōson shakai no kenkyū*, 366-70, 432-35, 459-66. From an indirect but related point of view, Mizoguchi Yūzō 溝口雄三 argues that the diverse development of post-Wang Yangming thought in the late Ming, especially in the Donglin circle, was a response to expectations for a new social order and that it helped changes in that direction. See his *Chūgoku zen kindai shisō no kusetsu to tenkai* 中國前近代思想の曲折と展開 (Tokyo: Tōkyō daigaku shuppankai, 1980). Mizoguchi has expressed disagreement with Kishimoto Mio 岸本美緒 on the notion, maintained by Kishimoto, that there existed a close affinity between people's hope for order and the "Heaven, Earth, and the myriad things as one body" (天地萬物為一體) theory of the Wang Yangming school; the republished version of Kishimoto's original article is enriched with a long note in response to Mizoguchi's criticism, where she clarifies the different approaches adopted by Mizoguchi and herself. While Mizoguchi emphasizes the actual social practice of the thinkers in question, Kishimoto focuses on a generally shared anxiety about social disorder. See her *Min Shin kōtai to Kōnan*

Yet as we have seen, even with the unassailable endorsement of Zhang Juzheng, Lin Yingxun was unable to force the gentry to forgo their vested interests. It is unlikely that Zhou could have lent Geng a stronger hand from the top to obtain that result. Furthermore, evidence indicates that Geng did not join the Donglin circle until after he was done with his initial hydraulic projects.<sup>127</sup> Gu Xiancheng and Gao Panlong thus cannot have played any significant role when Geng's policy was being formed. In addition, particular attention should be paid to two facts. First, Qian Dai, one of Geng's mainstays in Changshu, had no affiliation with the Donglin circle.<sup>128</sup> Second, the person whom Geng extolled as a model gentry, volunteering to put aside his privileges and leading the gentry in his hometown to do the same, was a Taicang native, Wang Xijue 王錫爵 (1534-1610).<sup>129</sup> When he was Grand Secretary in the 1590s, Wang had had severe conflicts with Gu Xiancheng,<sup>130</sup> which makes it unlikely that he got his ideas from Gu.<sup>131</sup> In short, to understand how

*shakai: 17-seiki Chūgoku no chitsujo mondai* 明清交替と江南社會——17世紀中國の秩序問題 (Tokyo: Tōkyō daigaku shuppankai, 1999), 93-100. Despite their differences, Mizoguchi and Kishimoto agree that the hope for a new social order was generally shared and was not confined solely to Neo-Confucian scholars.

<sup>127</sup> See Gu Xiancheng 顧憲成, *Gu Duanwen gong nianpu* 顧端文公年譜 (XXSK), 2.16a. It was in the third month of 1606 that Geng went to visit Gu. He had started his hydraulic work in 1605 by dredging the Fushan Channel (*Changshu xian shuili quanshu*, 1.5a). As shown earlier, Geng wrote one single report on the dredging of the Fushan, Sanzhang, and Xi Channels, from which it may be concluded that the construction was done simultaneously. Since Qian Dai's family was from the Sanzhang area, his support of Geng must have come during the formative stage of Geng's policy, and thus date from early 1605, if not earlier. In other words, Geng had obtained sufficient *substantial* support from local gentry landowners at least one year before he got *moral* support from the Donglin circle, if he indeed received it from Gu Xiancheng in 1606.

<sup>128</sup> In fact, Gu Xiancheng did not get along with Zhang Juzheng. See Chen Ding 陳鼎, *Donglin liezhuan* 東林列傳 (SKQS), 2.5a; Ono Kazuko 小野和子, *Minki tōsha kō: Tōrintō to Fukusha* 明季黨社考——東林黨と復社 (Kyoto: Dōhōsha shuppan, 1996), 11-60; Lin Liyue 林麗月, "Ge bu chongtu yu Ming Wanli chao de dangzheng" 閣部衝突與明萬曆朝的黨爭, *Taiwan shifan daxue lishi xuebao* 10 (1982): 123-41. Therefore, Qian was not likely part of the Donglin circle.

<sup>129</sup> See Geng Ju, *Changshu xian shuili quanshu*, Appendix A:10b.

<sup>130</sup> Ono Kazuko, *Minki tōsha kō*, 212-17; their enmity lasted up to the early seventeenth century, when Geng Ju was Changshu magistrate; see 311-18.

<sup>131</sup> In fact, it can be demonstrated that he formed his views independently of the Donglin circle since he had already voiced them in a letter to Taicang Magistrate Zhou Yipeng 周一鵬 (n.d.) in the early 1580s. Wang maintained that it was inappropriate to permit the gentry to enjoy benefits without making contributions. See Wang Xijue 王錫爵, *Wang Wensu gong ducao* 王文肅公牘草 (SKCM), 2.21b-22a.



Geng Ju succeeded in realizing the beneficiary-pays principle, we must look first to the people who lived in their hometowns as gentry and adopted the reformist stance out of practical concerns and because they had let themselves be persuaded of their responsibilities. In other words, a willingness to forgo privileges and participate in water management was not a stance held exclusively by the Donglin circle.<sup>132</sup> On the contrary, it must have been a view formed independently and through persuasion, eventually shared by a number of local gentry landlords in the early seventeenth century. The persuasion effort was locally conducted, the consensus was locally reached, and its implementation, at least in the initial stages, was locally achieved.<sup>133</sup> With this, the government could finally penetrate local society and extract in a fair way the labor and financial resources required to complete public works that would enhance the interest of the gentry and of their communities in return for their cooperation. From the Changshu example, it can be said that the local elite's active participation in public works was not necessarily a sign of official retreat. Rather, it is best understood as an indication of the presence of capable local officials and a product of the negotiation between them and the local elite.

This generally held view made the broader application of the beneficiary-pays principle possible. It was especially useful when the government needed to manage local disputes. For instance, Geng used it when he persuaded landlords to maintain local waterways collaboratively. The

<sup>132</sup> In fact, when the Wuxi magistrate made plans for a general construction of small channels and polder dikes, he cited landownership as the measure to determine responsibilities but did not mention any support from the Donglin scholars, even though they had been active in the region for a period of time. Neither did he discuss the revocation of gentry exemption privileges. See Geng Ju, *Changshu xian shuili quanshu*, Appendix A:4a-6a. This silence raises doubts regarding the claim that the Donglin scholars endorsed Geng's reform. Indeed, the same magistrate does not seem to have put even this limited program into practice: extant texts, including the Wuxi gazetteers, do not indicate any hydraulic projects in the seventeenth century until 1609. See Zhang Guowei, *Wuzhong shuili quan shu*, 10.49b.

<sup>133</sup> Still, this localized approach underpinned by the beneficiary-pays principle seems to have encountered some opposition, people arguing that the proximity of one's lands to a waterway, rather than landownership, should be the factor that determined responsibility: the farther the distance, the less one should be involved. But Geng rejected this approach on the grounds that it would give dishonest clerks room for manipulation. He maintained that when a waterway had to be dredged, the direction of its flow would be examined: the *li* that benefited from it would be considered responsible for the dredging, and within the concerned *li* people would be mobilized equally and solely based on landownership. See Geng Ju, *Changshu xian shuili quanshu*, 1.2b-3a.



case involved Gui Town and Xu Town 徐市. The two towns were respectively located in the Heng Channel 衡浦 and Limu Channel 李墓塘 areas. The region was dominated by two “great families”—the Guis 歸 and the Xus 徐. Seventy percent of the Gui family lands were located in the Heng Channel area, and seventy percent of the Xu family lands in the Limu Channel area. Yet, thirty percent of Gui family lands were in the Limu area, and thirty percent of Xu family lands in the Heng area. The problem was that dredging the Limu Channel was “three times as difficult” as dredging the Heng Channel. Before Geng arrived on the scene, the two families were unable to reach an agreement on how to divide their responsibilities. As Geng noted, the conflict remained unsolved because the two sides regarded the potential outcome of the conflict as an indicator of their influence. He succeeded in convincing both sides that how much one contributed had nothing to do with influence since, by the beneficiary-pays principle, one was responsible for as much as one benefited. He later concluded that this principle had helped him resolve problems without considering the relative power of each local family.<sup>134</sup> It was an effective way to connect landlords to the localities from which they benefited, and consequently to ensure that no hydraulic matters were left unattended.

Geng Ju's success in Changshu soon became a model praised by his superiors, who instructed officials in other counties to model their hydraulic management on Geng's administration.<sup>135</sup> Grand Coordinator Zhou Kongjiao moved matters forward in one of his orders of 1608. He issued a set of rules that included all the crucial points of Geng Ju's administration. Thus, landownership, not distance, was to be the only measure to determine responsibility, and the gentry exemption privilege was to be totally revoked.<sup>136</sup> Zhou also took over Geng's design of the certificate that embodied the “landlords pay and tenants work” principle.<sup>137</sup>

<sup>134</sup> Ibid., Appendix A:25a-b.

<sup>135</sup> Ibid., 1.25b-26b.

<sup>136</sup> See *Songjiang fuzhi* (Chongzhen edition) (崇禎) 松江府志, ed. Fang Yuegong 方岳貢 (rpt. Beijing: Shumu wenxian chubanshe, 1991), 17.40b-41a. This order was likely issued after a circular prohibiting “dredging contractors” (“Jin nitou baolan gongyi” 禁泥頭包攬公移), dated 1608, because it features after it in *Songjiang fuzhi*. See Zhang Guowei, *Wuzhong shuili quan shu*, 16.92a, and *Songjiang fuzhi*, 17.36b and 38a. But it must also have been issued in 1608 since Zhou left in this year.

<sup>137</sup> *Songjiang fuzhi*, 17.43b-44a.

Another case, in which the beneficiary-pays principle was used to settle a long-term dispute between two county-level units, well illustrates its power. The dispute opposed Taicang subprefecture and Jiading county over the division of responsibility for dredging projects on the Yantie Channel 鹽鐵河, a waterway that ran through both territories. It first erupted in 1596, and there were similar episodes in 1604, 1619, and 1640.<sup>138</sup> The root of the conflict was that Jiading appealed to the higher authorities to get financial support from Taicang for dredging the Yantie. The Jiading authorities justified their request by arguing that:

The Yantie Channel runs across the territories of [Taicang] subprefecture and [Jiading] county. It is the main path for entrance and exit, and it is a life-line for irrigation. If this channel is allowed to silt up, both the subprefecture and the county suffer equally; if it is kept unobstructed, both the subprefecture and the county benefit equally.

鹽鐵一河跨居州縣二境，為出入之通衢，為灌洩之命脉。此河淤則州與縣均其害，此河開則州與縣亦均其利。<sup>139</sup>

But Taicang countered Jiading's argument by insisting that "the Yantie ... is the main communication and transportation route in Jiading, but Taicang does not rely on it" (鹽鐵 ... 在嘉定為往來裝運要道，在太倉並無所藉).<sup>140</sup> Without concrete reference to the benefits that Taicang could gain from the dredging, the Taicang populace would refuse to participate in the project. As the dispute could not be solved at the county level, the case had to go through a long bureaucratic process. The size of the project was estimated twice by the budgetary-technical method. The decisive argument made by the regional hydraulic official to solve the problem rested on a question put to Taicang. From Jiading's viewpoint, the benefits that the Yantie generated for Taicang and Jiading concerned both transportation and irrigation. Yet, Taicang's counterar-

<sup>138</sup>) Jerry Dennerline has discussed the dispute from the perspective of the leadership of the "bureaucratic elite." See *The Chia-ting Loyalists: Confucian Leadership and Social Change in Seventeenth-Century China* (New Haven: Yale Univ. Press, 1981), 122-24. Dennerline's main point is that the bureaucratic elite of Jiading and Taicang could not solve the problem by themselves and had to rely on officials to make a decision. While I do agree with this assessment, I will emphasize in what follows the constant reference to profit and benefit as key concepts in the dispute and in its final solution.

<sup>139</sup>) *Jiading xianzhi* (Wanli edition) (萬曆) 嘉定縣志, ed. Han Jun 韓浚 (*SKCM*), 14.10a.

<sup>140</sup>) *Taicang zhoushi* (Chongzhen edition) (崇禎) 太倉州志, ed. Zhang Cai 張采, 7.15a.

gument only stressed transportation, which Jiading enjoyed the most, and avoided mentioning irrigation. The regional hydraulic official therefore demanded that Taicang report “whether or not its lands benefit from water taken from the [Yantie] Channel” (田中水利，取之河內否), and made it clear that, if it did, then Taicang would have no reason to refuse to share responsibility.<sup>141</sup> This case clearly illustrates that the beneficiary-pays principle was generally adhered to in policymaking and problem solving and that it was made into a rule followed by officials and people to defend their own interests and resolve disagreements in water management.<sup>142</sup> In other words, Geng Ju’s administration enriched the institutional legacy upon which officials and people could rely in hydraulic matters.<sup>143</sup>

## Conclusion

This discussion of the beneficiary-pays principle’s long journey until it became a generally accepted method to manage hydraulic problems has shed light on three important points of mid- and late-Ming history. First, it has shown that hydraulic reformers among the local elite played a significant role in shaping the new order in water management. They represented an entirely new perspective that conceived of the relationship between private gain and public good; and this perspective developed independently of post-Wang Yangming thought in general and of the ideas defended within the Donglin circle more specifically. This reminds

<sup>141</sup> *Taicang zhouzhi*, 7.15b.

<sup>142</sup> In another case, Huating Magistrate Nie Shaochang 聶紹昌 (fl. 1600s-1620s) basically used all of Geng’s points in his request for hydraulic management in 1609. See Zhang Guowei, *Wuzhong shuili quanshu*, 16.93a-108b. Qian Dai also invoked the beneficiary-pays principle to legitimate his request to exclude some of his lands, located in several *li* outside the Sanzhang area, from the calculation of responsibility. See Geng Ju, *Changshu xian shuili quanshu*, Appendix A:12b.

<sup>143</sup> Thus, regarding the revocation of the gentry exemption privilege, Chen Renxi 陳仁錫 (fl. 1620s-1630s) in the 1620s expressed his strong support when he criticized some landowners for their indifference to the maintenance of polder dikes. See Zhang Guowei, *Wuzhong shuili quanshu*, 22.107b-109a. Xu Guangqi, a noted scholar with a wide variety of interests in practical matters, evidently endorsed Geng Ju’s administration: he dedicated a full chapter of the *Nongzheng quanshu* (15.1a-28a) to recording almost every rule set by Geng regarding techniques, mobilization, and funding. Zhang Cai 張采, a Taicang 1628 *jinsbi*, also included Geng Ju’s crucial methods in the Taicang gazetteer (completed in 1642), of which he was the editor: see *Taicang zhouzhi*, 7.26b-32a.

us that we must pay attention to those people who advocated ideas and had concrete impact in ways that cannot be easily classified according to or aligned with major intellectual trends.

Second, the application of the beneficiary-pays principle can be regarded as the product of a collaboration between the officials and the hydraulic reformist elite, whose ideas were thus accommodated into policy. The government could not penetrate into local society without elite support. However, such collaboration should not be understood as a sign of weakening government or as representing a concession to the local elite on the part of the authorities. Rather, using the beneficiary-pays principle as a justification and resorting to certain budgetary-technological methods the government was able to subject the local elite to a generally applicable standard that officials and commoners were also required to follow. In other words, this was a new order that incorporated all parties into local public works in a way that benefited them all.

And third, the implementation of the beneficiary-pays principle between the 1520s and the first decade of the seventeenth century, as well as its broad application by the end of this period, transformed the use of such notions as benefit and interest into a legitimate way of constructing one's relationship to the government and to one's community. It thus became a common experience to both officials and the populace.