

# ENVIRONMENTAL FUNDS IN CHINA: PAST EXPERIENCE AND FUTURE PROSPECTS

*Jinnan Wang, Shuting Gao, Chazhong Ge*

*Chinese Research Academy of Environmental Sciences, Beijing 100012*

## 1. Introduction

1. In China the state continues to fund a large share of environmental investment but through a number of policy measures it is seeking to increase the sources of financing and to provide enterprises with greater incentives to invest in pollution control technologies and practices. One approach to diversifying investment finance is the establishment of environmental funds for pollution control, a model that exists in several developing and transition economies.

2. The implementation of a national pollution levy system beginning in the early 1980s stimulated the creation of local environmental funds. The experience gained has helped improve their operation and management over time, although more needs to be done to improve both budgetary management and the effectiveness of fund use. Lessons learned from operating local environmental funds have provided valuable input to discussions on the establishment of a national environmental fund in China. These discussions began in 1994<sup>1</sup> but have yet to culminate in the setting up of a national level fund. Despite this, the conceptual design of the fund has been agreed to among the relevant government agencies.

3. In this paper we examine past experience with, and future prospects for, environmental funds in China. Section 2 describes the current status of environmental fund development. Experience with the special fund established to facilitate loans to enterprises for investment in pollution control is discussed in section 3. In section 4 a case study of the Tianjin environmental industrial pollution control fund is presented while section 5 discusses reform of local environmental funds and prospects for the establishment of a national environmental fund. Conclusions are presented in section 6.

## 2. Funds for Environmental Protection

4. This section briefly describes the different fund categories established in China, existing funds for environmental purposes and fund sources that have been established for sectors such as power generation and water conservation.

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<sup>1</sup> Wang *et al.*, 1997; Yang and Wang, 1998.

## 2.1 Fund Categories

### 2.1.1 Description

5. In China there are essentially 3 main categories of funds: government, investment and foundations. The government category refers to those funds that are earmarked from the central budget for a specific use or that are raised by national and sub-national governments, or agencies affiliated to them, through charges or surcharges levied on individuals, state enterprises and private businesses in accordance with relevant laws and regulations issued by the Central Committee of the Chinese Communist Party and the State Council. In 1996, the total number of government funds and charges was 421, of which 46 were authorised by the State Council and other relevant institutions. The sum total of the funds under this category in 1998 was 217.2 billion yuan<sup>2</sup> (excluding 101.4 billion yuan in the social security fund) (Economic Management Digest, No. 14, 1999).

6. The investment category refers to those funds raised by investment managers from private sources and the public (Xu, 1998). It includes funds for industrial and securities investment. The concept of investment funds was approved in the late 1980's and the first to be launched was the Zibo Investment Fund for Township and Village Enterprises, established under approval by the People's Bank of China in 1992. More than a hundred investment funds had been established in China by the end of 1999. At this time 10 fund management companies and 5 trust banks had been established as well as 22 investment funds there were listed on the stock exchange. The total value of the shares issued by these funds amounted to 50.5 billion yuan (Hong Ma, 2000). A number of legislative measures have been introduced to regulate the sector. They include the Regulations on the Establishment of the China Industrial Investment Fund outside China, which was issued in 1995; the Draft Regulation on Securities Investment Funds, which was issued by the Securities Administration Commission of the State Council in 1997 and is the principal document for regulating the domestic securities market; the Law on Securities of the People's Republic of China, issued in 1999; the Circular Relating to an Application to Establish a Fund Management Company, released in 1997; the Circular Relating to an Application for Establishing Investment Funds, also issued in 1997; and the Circular Concerning the Issuing of Shares in Securities Investment Funds released by the Securities Supervision Commission in 1998. In addition, there are a number of local regulations such as the Draft Regulations on the Shenzhen Municipality Investment Fund and the Draft Regulations on the Securities Investment Trust Fund of Shanghai Municipality.

7. The foundation category includes funds received from domestic and international charitable organisations, as well as voluntary contributions from individuals, and which are managed by non-governmental and non-profit organisations. About 80 foundations have been established in China since the 1980s. In 1988, the State Council issued the Regulation on the Administration of Foundations and set out rules on the establishment and management of foundations. Before a foundation can be formally established and legally operate, approval must be granted by the People's Bank of China, the Ministry of Civil Administration and the State Council.

8. In the environment field most of the funds presently fall within the government category. For this reason the comments below focus on this category. It should be noted that there has been an experiment to establish an investment fund for the environment under the leadership of local environmental protection bureaus (EPBs) but this has proved problematic.

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<sup>2</sup> US\$1 = 8.2770 yuan <<<http://www.bloomberg.com/markets/wcv1.html>>> accessed 2 November 2000.

### *2.1.2 Establishment of a Government Fund*

9. According to Document No. 29 [1996] of the State Council, Document No. 14 of the Central Government and Document No. 101 [1998] of the State Council Office, the approval of the Ministry of Finance is needed before a government fund can be established. Subsequently the State Council must confirm the approval. No other government agency or any provincial government has the authority to approve the establishment of a government fund or to change the design and functioning of the fund or to appropriate revenue in the form of administrative fees. Charges collected under the pollution levy are an example of a government fund (see section 2.2.1). Other government funds have been established for public transport, urban construction, education, farming, forestry and water conservation and management.

### *2.1.3 Government Fund Management*

10. A government fund is an off-budget source of finance. According to the Regulation on the Management of Off-Budget Funds (Doc. No. 104 [1996], MOF) government financial agencies are to open a special account for the fund to facilitate its management and use. Income and expenditure must be deposited and withdrawn only from the special account in accordance with an overall fund management plan. In operational terms, the management of a government fund is more flexible than for money allocated from the central budget. Nonetheless, the government periodically reviews the operation of this type of fund. It is also considering turning some funds and charges into taxes. Recent discussion about changing the road maintenance fee to a fuel tax is an example.

11. Since the enactment of the State Council's 1996 Resolution on Strengthening the Management of Off-budget Funds, 13 government funds containing large amounts of capital have been incorporated into the central budget. The funds include the road maintenance fee, vehicle purchase fee, railway construction fund, Three Gorges dam construction fund, Xincaidi development fund, road construction fund, civil aviation infrastructure construction fund, rural educational development fund, postage fund, port construction fee, telephone installation fund and airport administration and construction fee. Each fund is earmarked and listed separately in the general budget table. All funds should balance income and expenditure, and any surplus is transferred to the following year's budget.

## *2.2 Overview of Funds for Environmental Purposes in China*

12. Funds for environmental purposes in China can be classified into three types. The first two types, local environmental funds and the China Foundation for Environmental Protection, have been established for some time. The third type, national environmental fund, has yet to be established.

### *2.2.1 Local Environmental Funds*

13. This type of fund includes revenue collected under the pollution levy, dedicated funds for pollution control and funds managed by environmental investment corporations. The pollution levy provides the majority of revenue for local environmental funds. Strengthening the efficiency of fund use and improving fund management mechanisms have received high priority.

14. In 1982 the State Council approved the pollution levy system, in which charges are imposed on enterprises that discharge pollutants above the relevant national standards. It is essentially a non-compliance charge. Revenue and expenditure are treated as separate items: revenue collected by the pollution levy goes to the treasury while requests for spending the funds is made to designated banks and in accordance with an overall fund management plan developed by local environmental protection bureaus. Approximately 80% of the collected revenue is recycled to the contributing enterprises to help them fund

investments in pollution control. The remaining 20% funds capacity building programmes in local environmental bureaux.

15. A review of the method of fund allocation, especially the recycling of the majority of the collected revenue to contributing enterprises, culminated in the State Council issuing a document in 1988 that aimed to reform this aspect of the system. The main thrust of the reform was to establish a dedicated fund for investments in pollution control and to require enterprises to take out loans rather than receiving the money as grants, as under the old approach. The new procedure applying to the receipt and disbursement of funds generated by the pollution levy system is:

- Environmental agencies open a special “environmental fund” account in a designated bank;
- Financial agencies transfer periodically part of the revenue collected under the pollution levy system to the above account so that the projected fund expenditure set out in the annual plan can be met;
- Environmental agencies select projects to be financed by loans and agree on the terms and conditions of the loan with the enterprise’s management.

16. Local environmental protection bureaux are responsible for the management of the dedicated fund.

17. A further element in the reform of the pollution levy system was to establish semi- independent institutions to manage the funds generated. The rationale for this was that local environmental protection bureaux did not have strong experience in managing the funds effectively. To address this issue and to ensure the fund is sustainable it was decided that a separate, commercially oriented organisation was needed. In this context, in 1988 the State Environmental Protection Administration (SEPA) established a pilot environmental investment corporation in Shenyang. On the basis of the experience gained from this pilot project, in June 1993 SEPA extended the trial to 21 provinces, autonomous regions and municipalities including Hunan, Shanxi and Liaoning. In addition, special funds for pollution control have been established in Tianjin Municipality, Zhejiang Province, Liaoning Province, Changzhou City and Jingsha City using loans provided by the World Bank and revenue from the pollution levy system. Corporations established by the local environmental protection bureaux effectively manage the special funds, which retain oversight of staff appointments and fund performance. In this regard, the corporations are not completely independent entities.

#### 2.2.2. *China Foundation for Environmental Protection*

18. The foundation was established in April 1993 under the joint approval of SEPA, the People’s Bank of China and the Ministry of Civil Administration. It is a national non-governmental, non-profit organisation. Its purpose is to promote a range of activities, including staff training and management, scientific research, public education, academic exchanges, the development of a domestic environmental goods and services industry and international friendship through financial support to or recognition of individuals and organisations that have made substantial contributions to environmental protection in China. Funding for the foundation comes from a diverse range of sources: donations from domestic and international institutions, enterprises and charity groups committed to environmental protection; individual contributions; and donations from foreign environmental associations. In 1993 the foundation had funds and assets totaling less than 2 million yuan but this had grown to over 15 million yuan in 1999. In addition, nearly 5 million yuan was raised to enable awards to be given to individuals and organisations and the funding of environmental activities.

### 2.2.3 *National Environmental Fund*

19. The possible establishment of a national environmental fund in China was first discussed in 1994. The design of such a fund was proposed at a seminar held that year in which the experience gained by the Shenyang Environmental Investment Corporation was evaluated and the idea of a national environmental investment corporation discussed. At the seminar, senior officials from SEPA, the Environmental and Resource Protection Committee of the National People's Congress, the Legislative Bureau of the State Council and the Central Public Service Commission as well as a number of respected economists had a frank debate about the merits of establishing a national environmental fund. SEPA also held a series of discussions with experts from the World Bank and the Asian Development Bank, culminating in a proposal for an in-depth study of the feasibility of establishing such a fund.

20. In 1994, SEPA acted as the local counter-part of a China-World Bank co-funded study on the redesign and implementation of the pollution levy system. Research on the use and management of funds generated by the pollution levy system led to proposals to shift from grants to loans to enterprises, setting higher interest rates and diversifying funding sources. At the same time, detailed design of a national environmental fund was carried out. However, the fund has still not been established for a number of reasons:

- The macro-economic situation has impacted heavily on enterprises, especially those owned by the state. Losses incurred by enterprises have been significant in some cases. The extra burden associated with repaying interest on new loans sourced from a national environmental fund would increase the pressure on already stretched enterprise resources;
- In recent years the central government has favoured replacing charges and fees with taxes, and implemented reforms to this end ;
- The plethora of charges, fees and fines enacted by different levels of government has been confusing and impacted on public perceptions about the role of these instruments and their purpose;
- Relatively little time has elapsed since the introduction of the Draft Regulation on Securities Investment Fund (issued in 1997) and other relevant legislation.

21. Table 1 summarises the different funds for the environment that currently exist in China. The table shows that the character of the funds varies as does their source of revenue, method of disbursement, management agencies and investment emphasis. At present, there is no specific fund to promote investment in the development of a local environmental goods and services industry. With the on-going reform and strengthening of environmental laws and regulations in China this situation may change.

### 2.3 *Funds in Other Sectors*

22. Funds similar to that of the pollution levy have been established in other sectors. They include the power construction fund, forestry and water conservation fund, industrial production fund, transport and communications fund and urban construction fund, all of which are government-type funds. They generally group together a range of general and special fees, charges and surcharges levied on individuals, organisations and businesses in accordance with relevant legislation.

**Table 1: Funds for the Environment in China**

<i>Type of fund</i>	<i>Fund character</i>	<i>Source of revenue</i>	<i>Method of disbursement</i>	<i>Mngt. agency(s)</i>	<i>Investment emphasis</i>	<i>Remarks</i>
<i>Pollution levy</i>	<i>Govt. (Sub-national)</i>	<i>Charges, fees, fines. Revenue goes to local govt. budget</i>	<i>Grants</i>	<i>Local EPBs &amp; financial agencies</i>	<i>Pollution treatment in enterprises &amp; institutional capacity building</i>	<i>80% of money used for investment in pollution control &amp; 20% used for capacity building</i>
<i>Dedicated fund for pollution control</i>	<i>Govt. (Sub-national)</i>	<i>Pollution charges. Revenue goes to local govt. budget</i>	<i>Loans</i>	<i>Local EPBs &amp; financial agencies</i>	<i>Pollution control at source</i>	<i>20%-30% from the pollution levy is channeled to this fund &amp; used to subsidise pollution control investments by major polluters</i>
<i>Investment corporation</i>	<i>Affiliated to govt. but operates on commercial lines</i>	<i>Pollution levies, loan repayments &amp; other sources</i>	<i>Loans</i>	<i>Board of directors</i>	<i>Pollution control</i>	<i>Piloted in several cities, provinces</i>
<i>China Foundation  For Env't. Protection</i>	<i>Non-profit NGO</i>	<i>Private &amp; public donations</i>	<i>Grants</i>	<i>Board of directors</i>	<i>Projects for public benefit</i>	

23. In 1996, there were 421 fees, charges and surcharges that had been authorised by 60 ministries, commissions and administrations at different levels of government. The State Council and central government agencies had approved 46 of the total number. The total revenue raised in 1996 was 413 billion yuan, including 56.2 billion yuan from administrative fees, 139.6 billion yuan from charges imposed by organisations affiliated to the government and 217.2 billion yuan from various charges and surcharges.

24. The funds play an important role in financing construction and development in various sectors, often making up budgetary shortfalls. For example, courts in China received a budgetary allocation of 790 million yuan from the Ministry of Finance in 1997 and this was supplemented by the 3.91 billion yuan raised off-budget. The latter is about five times more than the budget allocation. Today so many funds and charges have been established under different names that their revenue exceeds that from taxes. This has seriously undermined the tax base, one of the primary sources of financing relied upon by the government.

It has also imposed a heavy burden on enterprises, farmers and other businesses. To address these problems, in 1997 the Central Committee of the Chinese Communist Party of China and the State Council issued the Resolution to Control the Random Imposition of Charges, Fines and Other Financial Demands on Enterprises. Between 1997 and 1999, those funds that were set up without the appropriate legal and administrative foundation were phased out in three steps. The management of the remaining funds was strengthened.

25. In general, the management and use of these funds is similar to that under the pollution levy system. The power construction fund is an example. It is to be used to fund large and medium-sized power construction projects identified in the national plan. Use of the fund is subject to supervision by the relevant financial and auditing institutions (Editorial Committee of China Financial Year Book, 1997). According to the Regulations on the Supervision and Management of the Power Construction Fund, issued jointly by the Ministry of Finance and the Ministry of Power Industry and approved by the State Council in 1996, revenue is raised by charging power users, which is then used to fund the construction of electric power projects. The charge rate is 0.02 yuan per kilowatt-hour of power use. Power used for agricultural irrigation and drainage, civil defence and disaster relief purposes and the production of fertilizer is exempt as is self-generated power. The charge rate is reduced to 0.003 yuan/kilowatt-hour for power used in the production of coal by state-owned coal mining enterprises, uranium processing plants in the nuclear industry and chemical plants. Half the collected revenue goes to the local government of provinces, municipalities and autonomous regions and is used for constructing new power plants in their area. The remainder goes to major enterprises at provincial or higher levels that run power plants and is to assist them improve power transmission as well as to build new facilities. The fund is included as part of the central budget and accounting of revenue and expenditure is shown in both the national and local government budgets.

### **3. The Special Fund for Pollution Control**

#### ***3.1 Revenue from the Pollution Levy***

26. The pollution levy system is essentially a non-compliance charge on enterprises that discharge pollutants in excess of the relevant national standards<sup>3</sup>. China developed this system in 1978 based on the "polluter pays principle"(PPP) and it was formally incorporated into the Environmental Protection Law (Trial Implementation) of the People's Republic of China issued in 1979. Detailed provisions concerning the system were included in the Law on the Prevention and Control of Air Pollution, the Law on the Prevention and Control of Water Pollution, the Law on the Prevention and Control of Solid Waste Pollution and the Law on the Prevention and Control of Noise Pollution. Supporting regulations have also been enacted. The 1982 Draft Regulations on Pollution Levies and the 1988 Draft Regulations on the Use of Special Funds for Pollution Control issued by the State Council specify the target groups of the charges, the charge rates and their method of calculation, procedure for increasing the charge rate and the management and use of revenue collected. The system has now been widely implemented in all provinces and municipalities in China and has been relatively effective. Improvements are needed, however, and this formed the basis for a review of the system undertaken jointly with the World Bank in 1994.

27. Table 2 shows the amount of revenue collected and spent during the period 1991-1998. Income and expenditure have more or less kept pace with each other; for example in 1998 the total amount of revenue collected was 4.9 billion yuan while expenditure was 4.86 billion yuan.

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<sup>3</sup> Charges for wastewater discharge were implemented in 1991 and apply to all discharges irrespective of volume.

28. The pollution levy is listed as an item in the budget of sub-national governments. The central government does not share in any of the revenue collected. There are three different models for managing the revenue. First, local management. Here charges are collected, managed and used by municipal and county governments within whose jurisdiction the pollution sources are located. Environmental agencies at higher levels (provincial or state levels) are not involved in managing the funds. Second, management by different levels of government. Under this model, the local environmental protection bureau in each province collects the charges imposed on enterprises and the revenue then goes into the provincial budget where it is managed jointly by the environmental and financial agencies. Revenue from charges imposed on enterprises under provincial government, city government, and county government jurisdiction is channeled to the relevant level of government and co-managed by the environmental and financial agencies. Third, mixed management. Under this model, pollution charges are collected by local environmental institutions within whose jurisdiction the enterprises are located and the revenue is shared among and managed by these institutions at provincial, city and county levels. Most provinces and cities in China currently follow the third model.

**Table 2: Revenue Collected and Spent Under the Pollution Levy System, 1991-1998**

	1991	1992	1993	1994	1995	1996	1997	1998
Total revenue (billion yuan)	2.01	2.39	2.69	3.12	3.73	4.10	4.52	4.90
Total revenue spent (billion yuan)	1.78	2.17	2.48	2.70	3.22	3.96	4.58	4.86
Share of revenue spent as % total env. investment in China (%)	10.47	10.53	9.23	8.79	9.07	9.71	9.12	6.73
Revenue spent on pollution control (billion yuan)	1.34	1.62	1.82	1.91	2.04	2.30	2.65	2.73
% of which were loans	37.3	36.4	33.5	35.0	32.7	34.5	31.5	25.0
Env. subsidies (billion yuan)	0.44	0.55	0.66	0.79	1.18	1.66	1.93	2.13

Note: Revenue spent on pollution control includes subsidies for integrated pollution control projects.

Sources: State Environmental Protection Administration, 1991-1999.

### **3.2 The Pollution Levy Fund**

29. The pollution levy fund is sourced from charges on pollution discharges that exceed national standards, fees for wastewater discharge, charges for SO<sub>2</sub> emissions, and revenue from the “Four Small Items” (i.e. discharge subject to two levies, discharges subject to a levy at a higher rate, overdue fines and compensation payments). The revenue collected is used for two purposes. First, to subsidise pollution control projects. Funds are provided in the form of a subsidy to enterprises to support investment in pollution control. The subsidy can be provided as a non-repayable loan or grant (a non-repayable loan is called a special fund for pollution control and is discussed below). Second, to fund integrated pollution control and institutional capacity building. This assistance is called an environmental subsidy and takes the form of a grant. Over time revenue in this category has increased, largely as a result of the growth in funds collected under the “Four Small Items” (see Table 2 for figures). As the table shows revenue from the



pollution levy amounted to 4.9 billion yuan in 1998, the majority of which was spent on pollution control (2.73 billion yuan).

30. Funds provided in the form of grants for investment in pollution control are listed as an item in the local government budget. Process-wise, the money is allocated to local EPBs by their counterpart finance agencies in accordance with the annual plan of expenditure. The local EPB then disburses the funds to enterprises with approved pollution control projects. It should be noted that funding from this source represents only part of the total enterprise investment in pollution control projects<sup>4</sup>. For example, when enterprises prepare proposals for grant funding they are required to match from their own resources a proportion of the amount sought.

31. Initially the revenue collected was recycled as grants to those enterprises that had paid pollution charges and used to support their investments in pollution control. This process reinforced a perception among the managers of the contributing enterprises that they “owned” the funds (Yang and Wang, 1998). Moreover, because the revenue was returned in the form of grants, the efficiency of fund use was very low. With the shift in emphasis of the environmental investment policy from grants to loans in 1998, reform of this aspect of the pollution levy system was undertaken. One outcome was to redirect part of the revenue collected to a special fund for pollution control.

### **3.3 The Special Fund for Pollution Control**

32. Part of the money from the pollution levy fund is provided to the special fund. Loans are provided under the latter fund to help enterprises implement pollution control projects. In 1998, the amount loaned totaled 6.84 billion yuan and 2.64 billion yuan of loans were exempted from repayment. It is estimated that the total size of the fund is about 5 billion yuan. This section provides a detailed description of the sources, management and operation of this fund.

#### **3.3.1 Special Fund Sources**

33. The sources include:

- transfer of 20%-30% of the revenue from the pollution levy fund, with the exact amount determined by local government;
- unspent money accumulated from past transfers of pollution levy funds;
- interest repayments by enterprises that have taken out loans, overdue fines and compensation payments, interest penalties for using the loan for purposes other than as designated; and
- funds allocated from the local government budget.

#### **3.3.2 Fund Management**

34. The special fund is established by the EPB at provincial or municipal levels and is managed by them rather than by a separate organisation. Inter-borrowing is permitted but responsibility for the accounting of all transactions rests with the specific EPB managing the fund. The finance department of these institutions acts as the executive manager of the funds. A loan plan is jointly developed and issued by

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<sup>4</sup> Polluters are to first use their own funds to control discharges. Where they lack sufficient funds they can submit a request to the relevant environmental and financial institutions for a loan from the special fund for pollution control. The total amount of a loan to an enterprise is limited to 80% of the total amount of pollution charges the enterprise has paid.

the EPB and the local government finance department (either at provincial or municipal levels). Every quarter the latter transfers revenue collected under the pollution levy to the special fund account opened by the EPB. In some regions, semi-independent investment corporations have been established to manage the account and its expenditure.

35. Money is loaned at low interest to those enterprises that have paid the pollution levy and who can demonstrate their capability to repay the loan, can match a certain proportion of the loan from their own resources and whose projects are feasible. Loan priority areas include demonstration projects for the treatment and control of key pollutants, the integrated implementation of the “three wastes” policy and the closure, transfer or removal of major polluting enterprises.

36. The procedure for the assessment and approval of loan applications from the special fund is:

- The enterprise completes an application form and includes therein a feasibility report and other supporting documentation. After the proposal is pre-screened by the relevant institution in charge of the enterprise, the EPB at provincial or municipal level will seek confirmation from a bank about the enterprise’s ability to repay the loan. The EPB will then review all the material and decide whether to approve or decline the application;
- Once approval has been given by the EPB, the enterprise signs an agreement with the bank that holds the special fund account. The bank then issues the loan according to the terms and conditions set out in the agreement;
- Before a project is commissioned, the enterprise must submit to the EPB a report verifying the completion of the project. Once this report is accepted some of the loan principle can be repaid.

37. According to the 1988 Draft Regulations for Loans from the Special Fund for Pollution Control, the term of a loan is limited to three years. The monthly interest rate is 2.4% for a one-year loan, 2.7% for a two-year loan and 3.0% for a three-year loan, with interest payments due every three months. As noted above, once a report verifying completion of a project has been accepted by the EPB that approved the loan then repayment of some of the principle is permitted. The maximum repayment of principle is generally limited to an amount equivalent to that which the enterprise has already paid back. If the full loan is not repaid on time, the bank has the right to set a deadline for so doing and to charge interest at the highest monthly rate of 3%. In addition, the bank can impose an additional monthly penalty interest of 1.5%. If an enterprise uses the loan for an undesignated purpose the bank has the authority to recall all or part of the loan. Furthermore, it can charge a monthly interest of 3% as well as a monthly penalty interest of 6% on the loan.

38. Figures on loans from the special fund are provided in Table 3. It shows that the amount of loans repaid every year is considerable, and the proportion of repayments to loans issued is also high. Nonetheless, the general macro-economic situation in China has had an impact on the ability of enterprises to repay loans received from the special fund. In particular, loss-making enterprises face considerable difficulties in repaying not only the loan from the fund but also loans from commercial sources.

### 3.3.3 *Problems with the Special Fund*

39. The loan provisions of the special fund have helped strengthen enterprises’ responsibility to use the funds received in an efficient and effective manner as well as for the purposes specified. In addition, the establishment of the special fund has provided a more coherent approach to pollution control projects compared to the previous practice of recycling the collected revenue to enterprises and leaving the selection of projects to their discretion. In spite of these positive points, a number of problems exist.

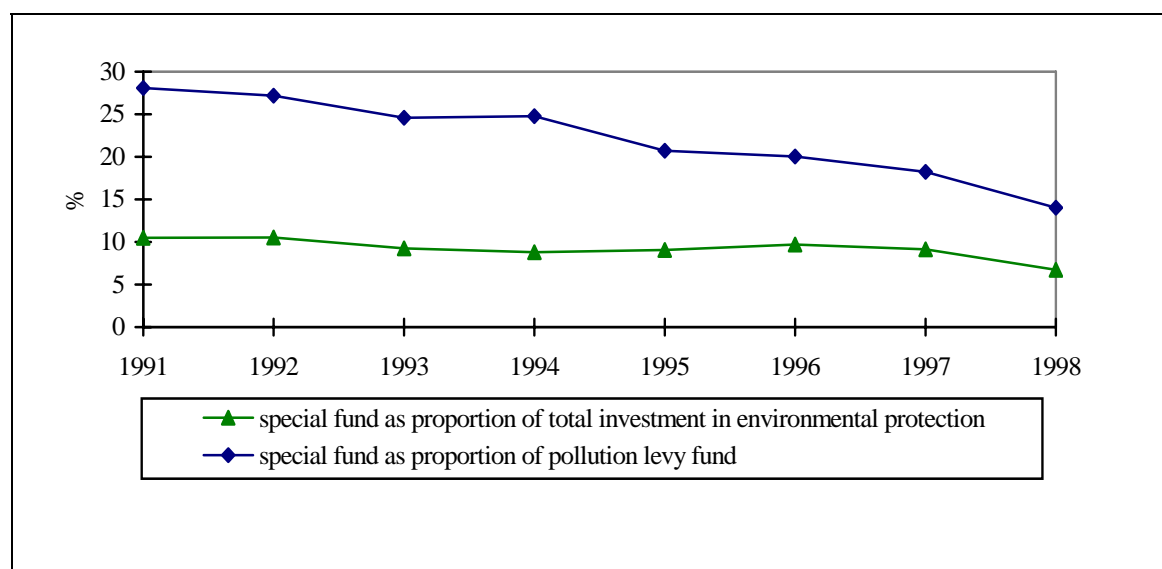
**Table 3: Loans Issued under, and Repayments to, the Special Fund**

Year	1994	1995	1996	1997	1998
Total revenue (billion yuan)	2.517	2.933	3.7*	4.3*	4.9*
Annual loans (billion yuan)	0.666	0.669	0.794	0.835	0.681
Annual loan repayments (billion yuan)	0.286	0.293	0.351	0.43	0.398
Annual rate of loan repayment (%)	43	44	44	51	58
Subsidy for pollution control (billion yuan)	1.91	2.04	2.30	2.65	2.73

Note: \* Estimated figure.

40. First, the fund is relatively small in size. As Figure 1 shows, it represents a small share of the overall investment in environmental protection. Money in the special fund is distributed to EPBs in 30 provinces and municipalities and the annual amount of loans issued is less than 1 billion yuan. One implication is that it is difficult to finance large-scale projects for integrated pollution control.

**Figure 1: The Special Fund in Perspective**



41. Second, the target group is small. Because only those enterprises that have paid the non-compliance charges are eligible for loans from the special fund, the projects supported are limited to controlling pollution from existing sources. This has limited the effectiveness of the fund.

42. Third, the operation of the fund is not wholly independent of government intervention. Local EPBs are responsible for managing the fund and although investment corporations have been established in some cities, they remain affiliated to the local EPBs. In this respect, the latter retain some influence on project selection and business management.

43. Fourth, the proportion of loans issued to loans repaid each year is very high. Approximately 40% of loans are repaid each year and this figure increases each year. According to the 1988 Draft Regulations for Loans from the Special Fund for Pollution Control the maximum amount of annual repayments can be as high as 80% of the loan. In this situation it would be better to provide grants than loans.

#### **4. Case Study of the Tianjin Industrial Pollution Control Fund**

44. Environmental investment corporations have been established as pilot projects in more than 20 provinces and municipalities in China. For some of these corporations, such as those in Shenyang and Shanxi, the financing source is revenue from pollution levies. For the other environmental corporations, such as those in Tianjin, Zhejiang, Liaoning, Changzhou and Jingsha, the financing sources include low interest loans from the World Bank and revenue collected from pollution levies.

45. The Shenyang Environmental Investment Corporation and the Tianjin Industrial Pollution Control Fund (hereinafter referred to as the Tianjin Fund) represent two different examples in terms their management and operation (see Wang et al., 1997). The former was the first of its type established in China. Its operation and institutional structure reflect the planned economic model compared to the Tianjin Fund, which is designed more in accordance with the principles of a market economy. The Tianjin Fund is discussed in further detail below.

##### **4.1 Financing Sources**

46. In 1989 Tianjin municipality launched an urban development project using a loan from the World Bank. Subsequently, it was agreed that environmental projects should be added to the loan portfolio. More broadly, China had started to reform its financial system to conform more closely to a market economy. Also, consideration was being given to shifting from grants to loans in managing the revenue generated by the pollution levy system. All these factors had an influence on the decision by the Tianjin municipal government and the Tianjin Municipal Establishment Commission to approve the establishment of the Tianjin Fund in 1993.

47. The principal financing sources of the Tianjin Fund are a soft loan from the World Bank, revenue transferred by the Tianjin EPB from the pollution levy fund and loan interest repayments by enterprises. Under the loan agreement with the World Bank, the total amount loaned was to be US\$19 million, to be transferred between 1993-1998. The term of the loan is 15 years with repayments to begin in 1998 (i.e. a 5-year grace period) and the annual interest rate is 4.5%. For that part of the loan that is not been drawn on, an annual interest rate of 0.5% is applied. The Tianjin municipal government was required to match two-thirds of the funds provided by the World Bank. This contribution was to be sourced from the 80% of revenue transferred from the pollution levy fund. Subsequent negotiations with the World Bank resulted in a new agreement that the ratio of the local contribution to loan amount would be 3:7. Slow progress in identifying and implementing projects under the loan resulted in the World Bank reducing the loan amount by US\$5 million in 1996 and by a further US\$4 million in 1998. This was reduced by another US\$1 million in 2000. The total amount of the approved loan presently stands at US\$9 million. By the end of 1999, the World Bank had loaned US\$8.27 million (66.17 million yuan), the Tianjin EPB had contributed US\$5.93 million (48.48 million yuan) and interest payments received totaled US\$1.28 million (10.25 million yuan) (see Table 4).

**Table 4: Financing Sources of the Tianjin Fund (in million yuan)**

Year	Contributions			Interest Received	Loans	Total amount of loans at yr end
	Domestic	World Bank	Total			
1993	3.0		3.0	0.04	0.64	0.64
1994	3.9	1.27	5.17	0.24	1.95	2.56
1995	5.84	2.78	8.62	0.34	8.99	10.79
1996	12.15	14.78	26.93	1.59	21.18	29.77
1997	10.49	15.89	26.38	2.25	29.71	54.38
1998	6.13	18.14	24.27	3.19	23.64	72.74
1999	6.97	13.31	20.28	2.60	17.12	84.61
Total	48.48	66.17	114.65	10.25	103.23	255.49

Source: Executive Office of the Tianjin Industrial Pollution Control Fund.

#### **4.2 Management Arrangements**

48. A board of directors has been established to act as the highest authority of the fund. Its members represent the Tianjin EPB, the Tianjin Economic Commission, the Tianjin Urban Development and Sewage Commission, the Tianjin Financial Bureau, the Tianjin Construction Commission and the Industry Bureau of the Tianjin Economic Commission. Reporting to the board is the Executive Office of the Tianjin Fund, which is responsible for fund administration. Within the Executive Office there are 3 departments that manage the day-to-day affairs of the fund: the project department, the administrative department and the finance department.

49. The Tianjin Municipal Establishment Commission has stated that the Executive Office of the Tianjin Fund is an institution subordinate to the Tianjin EPB at the county or division level. The main functions of the Executive Office include the development of an annual fund management plan, project management including their technical and financial aspects and ensuring the prudent management of the fund and associated costs. There is currently 18 staff, all of whom are qualified and competent professionals. Salaries are paid by the fund and subject to audit by the Tianjin Municipal Establishment Commission.

50. As a condition of the World Bank providing its loan it required that the financial organisation in charge of the fund must be a bank that satisfied its criteria. At the time, only the Agricultural and Investment Bank in Tianjin passed this test. Because the pollution levy fund collected by the Tianjin EPB is held in an account of the Construction Bank, however, the Executive Office of the Tianjin Fund preferred to also use this bank. Following an evaluation by the World Bank it agreed to deposit its loan with the Tianjin branch of the Construction Bank. Initially bank staff assisted the Executive Office in carrying out financial evaluations of project proposals but this task is now conducted wholly by fund staff.

51. The fund provides loans to municipal organisations that meet the repayment criteria and is designed to facilitate investments in industrial pollution control. Target projects of the fund include:

- those that reduce pollutant discharges and promote cleaner production. These projects receive top priority for loans;
- those that promote the integrated implementation of the “three wastes” policy, including centralised treatment of wastes;

- other pollution control projects with significant social and economic benefits.

52. Not more than 70% of the total investment required by a project is ever loaned by the fund. Of this sum, the contribution from the World Bank loan is limited to 70% and the remainder must come from domestic sources. The total amount of investment in a single project should not exceed US\$3 million. As at June 2000, the fund had supported 41 projects and loans totaled 119.43 million yuan, of which, 82.47 million yuan was sourced from the World Bank loan.

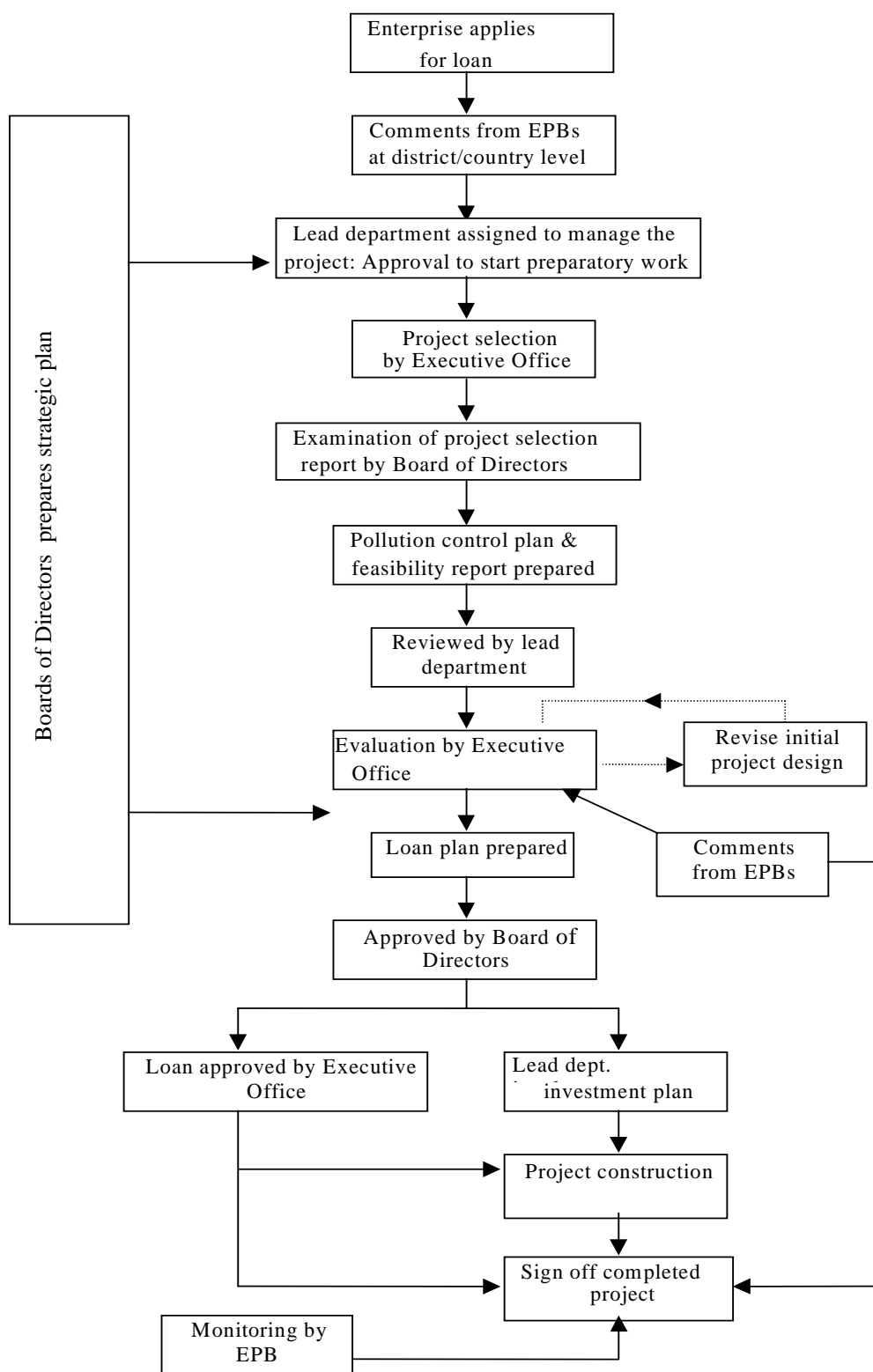
53. When all 41 projects become operational it is expected that a further 3.5 million litres of industrial wastewater will be treated annually and 16,700 tons of COD, 102,400 tons of SO<sub>2</sub>, 56,000 tons of dust from smoke, 12,000 tons of industrial dust and 376 tons of other harmful gas will be reduced as well as 18,000 tons of industrial waste. These results are projected to increase profit by 112.4 million yuan.

54. Depending on the nature and potential economic benefits of project proposals, and the financial health of the proposing organisation, the loan term ranges from 3 to 5 years (although the former is the usual length). Conditions for obtaining a loan include:

- it must be for investment in an environmental project;
- the borrower should be capable of repaying the loan within the proposed term. Criteria for evaluating this include the enterprise must have been profitable over the last 3 years, the ratio of debts to assets is close to 50% and not higher than 70%, there is sufficient existing and projected cash flow and access to assets in emergencies is ensured;
- it is guaranteed; and
- the economic benefits from the project can be demonstrated.

55. The process for evaluating a loan application to the fund is shown in Figure 2.

**Figure 2: Process for Evaluating a Loan Application to the Tianjin Fund**



### 4.3 Evaluation of Fund Operation

#### 4.3.1. Income and Expenditure

56. Although the Tianjin Fund is a non-profit organisation it was designed to operate along commercial lines. When it was established it received grants totaling 455,000 yuan. Currently, the major source of its revenue is the difference between loan interest repayments from borrowers and the interest due on the World Bank loan: this difference is less than 1.5% per annum at present. In addition, the fund must cover the operational costs of the Executive Office. Overall, the fund operates at a loss.

57. Apart from the money transferred from the pollution levy fund collected by Tianjin EPB, the main sources of fund revenue are loan interest repayments and deposits by loan applicants. The loan interest rate is the same as that for an enterprise modernisation loan, which is set by the People's Bank of China. The annual loan interest rate from the fund was 10.8% in 1993 and is now 5.94%.

58. The organisation applying for a loan has to pay a deposit of 5% of the amount sought. Evaluation of the application by staff of the Executive Office should be completed and the result communicated to the applicant within 6 months. The deposit is refunded at this time. If the loan application is withdrawn before the 6 months expires the deposit is not refunded.

59. Major items of fund expenditure include salary for staff of the Executive Office, general business administration costs, loan interest of 4.5% payable to the World Bank, a fee for a credit line facility (5% of the undrawn loan amount) and covering bad debts (currently 3 million yuan). Table 5 provides a breakdown of annual interest received and fund expenditure between 1993 and 1999.

**Table 5: Revenue from Interest and Fund Expenditure, 1993-1999 (Unit: million yuan)**

Year	Revenue from interest	Expenditure			
		Interest Repaid	Fee for credit line facility	Admin. costs	Fixed assets
1993	0.04		1.02	0.29	0.07
1994	0.24	0.01	0.82	0.31	0.23
1995	0.34	0.13	0.79	0.57	0.07
1996	1.59	0.32	0.46	0.65	0.03
1997	2.25	0.79	0.31	0.19	0.18
1998	3.19	2.06	0.08	0.83	0.14
1999	2.60	2.05	0.17	0.70	0.03
Total	10.25	5.36	3.65	3.54	0.75

Source: Executive Office of the Tianjin Industrial Pollution Control Fund.



#### 4.3.2. *Fund Management*

60. At present, the members of the Board of Directors are representatives of the various administrative institutions of the Tianjin municipal government. Apart from the EPB, none of the other institutions provide financing or have any experience in fund management. Their ability to supervise the fund and provide strategic direction is limited.

61. In market economies a board of directors generally comprises a small number of experienced senior managers from within and without the company who are elected by shareholders and who have a responsibility to ensure that decisions are in their best interests. The Tianjin Fund is an independent entity that is supposed to operate consistent with the norms of a market economy. Although it is not subject to the administrative intervention that remains common in China, it is nonetheless not able to fully utilise market-based strategies in its operations, for example hedging against risks and diversifying the portfolio of projects for which the fund can lend. Risks associated with bad debts and fluctuations in the exchange rate of yuan to US dollars are a major concern to the fund's managers. At least 10% of the fund should be used for investment in areas outside pollution control to increase the spread of projects.

#### 4.3.3. *Project Funding and Implementation*

62. As noted in section 4.2, the fund supported 41 projects between 1993 and June 2000, with loans totaling 119.43 million yuan. Of this sum, the World Bank had contributed 72.21 million yuan. These figures are much less than anticipated when the fund was established, for two main reasons. First, the amount of the World Bank loan was reduced from US\$19 million to US\$9 million following negotiation between the parties. On the Chinese side less matching funds have been contributed than originally expected. Second, the slow progress in identifying and implementing viable projects.

63. Poor performance in project development can be attributed to the following reasons:

- funds from the World Bank loan are not disbursed until a project is implemented. Until then financing relies on that provided by the Chinese partner but the amount available is insufficient and results in slow progress of the project;
- satisfying the interests of the many institutions represented on the Board of Directors hinders quick decision-making on applications. Six months is the average response time. This delays the completion of the loan application process;
- initially, the Board of Directors was authorised to only approve loans of less than US\$1 million. In 1997, the maximum loan amount that the Board could approve was reduced to about US\$625,000 (5 million yuan). Above this sum the World Bank must give prior approval. This has created administrative inertia;
- staff changes in the World Bank, and the associated lead time for new members to become familiar with the detail of the fund's operation.

#### 4.3.4. *Loan Repayments*

64. Economic problems associated with the Asian financial crisis have had a flow-on effect on the ability of enterprises to make their loan repayments. This is in contrast to the situation in 1994 and 1995

when all outstanding loans were repaid. The repayment rate dropped significantly in 1997 and has since remained at less than 50% (see Table 6).

**Table 6: Loan Repayments, 1994-1999**

	1994	1995	1996	1997	1998	1999
Amount to be repaid (million yuan)	0.03	0.77	3.74	13.04	19.47	12.02
Amount actually repaid (million yuan)	0.03	0.77	2.21	5.10	2.73	5.41
Repayment rate (%)	100	100	59.09	39.11	14.02	45.0

Source: Executive Office of the Tianjin Industrial Pollution Control Fund.

#### 4.3.5 *Influence of External Factors*

65. A number of unfavourable external factors have affected the development and operation of the fund. They include:

- the impact of slow macro-economic reform in China. The fund was designed to operate under market economy conditions but the pace and depth of economic reform in China has slowed and this has constrained the operation of the fund;
- the flow-on effects of the Asian financial crisis. The national economy and the regional economy of Tianjin has been affected by the fallout from this crisis, with effects on plans to restructure loss-making state-owned enterprises and increased bankruptcies among township and village enterprises. As a result bad debts incurred by the fund have mounted;
- uncertainty in the status and authority of the fund. Although the fund has autonomy concerning the selection of projects to be funded, it remains an entity affiliated to the government. This constrains its entrepreneurial activities, e.g. it is not allowed to make investments in areas outside Tianjin municipality;
- institutional indifference to the fund's longer-term development. At present, the fund is a non-profit organisation subordinate to the Tianjin EPB, which provides finance to the fund through a contribution from the pollution levy fund. However, the Tianjin EPB is concerned that the fund may be taken over by the municipal government and in this context it is indifferent to devoting time and staff resources to foster the fund's development. The fund's status as a non-profit institution means that it is subject to administrative oversight by the People's Bank of China but this is currently subject to review. The result is that neither the Tianjin EPB nor the People's Bank of China is particularly committed to the fund's long-term development.

## 5. **Reform of Local Environmental Funds and Establishment of a National Environmental Fund**

66. Local environmental funds have played an important role in supporting environmental protection efforts in China. The funds have been used specifically for pollution control and institutional capacity building. Problems such as the small size of the funds and their decentralised use have been identified, however. Reform is needed to improve the operation of the funds and at the same time further consideration needs to be given to establishing a national environmental fund.

## **5.1. Suggestions for Reforming Local Environmental Funds**

### **5.1.1 Strengthen Budgetary Management**

67. Incorporating local environmental funds into the budget and restricting their use to the specified purposes is a management model widely used in China. However, this model is not followed in all regions. Some funds have been used to support other purposes, such as the construction of office buildings, hotels and apartments. For example, Guangdong Province EPB spent billions of yuan from its pollution levy fund to build apartments for staff. There is a need to strengthen the budgetary management of local environmental funds. Also, in terms of project selection cost-effectiveness should be adopted as a criterion to improve the effectiveness of fund use.

### **5.1.2 Establish an Independent Fund Management Organisation for Investment Corporations**

68. At present, most local environmental funds are administered and managed by the planning and finance departments of local EPBs. Although investment companies or fund management offices have been established in some regions (e.g. Shenyang, Tianjin), they are still affiliated to the local EPB and enjoy semi-independence only. Administrative intervention has affected the efficiency of fund management and dynamism of investment strategies. For example there are no incentives to actively increase the size of the fund by diversifying its activities. An independent financial organisation for fund management might foster a more entrepreneurial philosophy.

### **5.1.3 Increase the Sources of Finance**

69. Currently, the local environmental funds have limited sources of financing. This acts as a constraint on their longer-term development. To address this problem a number of actions could be undertaken: phase out grants from revenue raised by the pollution levy and provide loans instead; augment local funds with foreign capital sources; seek to gain increased funds from the government budget; and make greater use of non-governmental sources of financing.

### **5.1.4 Increase the Rate of Loan Repayments**

70. In 1999 the rate of loan repayment to the Tianjin Fund was 45% (Table 6); for other funds the rate is approximately 40%. These rates are insufficient to sustain the funds and support their longer-term development. The procedure for evaluating and approving loans should be reviewed and the policy for loan repayment should be made more transparent. Supervisory controls also need to be strengthened so that early-warning signals of repayment problems are available.

### **5.1.5 Strengthen Fund's Ability to Hedge Risk**

71. The major source of revenue for local environmental funds is interest from loans. However, because the loan interest rate is low borrowers in some regions use the loan to repay higher interest loans that they have taken out. Arrears in loan repayment to the environmental fund are also not uncommon. Hedging against these risks by increasing the loan interest rate alone is not a solution. Rather, a proportion of the environmental fund could be invested in profit-making projects and securities to strengthen risk hedging.

## **5.2 *Establishing a National Environmental Fund***

72. In recent years, the public and governments at all levels in China have attached increasing importance to environmental protection. Their understanding of environmental issues has grown together with concerns about environmental quality. However, sources for financing environmental investment are limited and some that do exist are not consistent with the development of a market economy. The situation could be described as “there is trench, but no water supply”. The establishment of a national environmental fund could not only increase financing sources for environmental investment but also enhance the government’s capability in regulating and controlling environmental protection. Such a fund could also contribute to solving regional resource management problems, such as in the water sector, and help fund pilot demonstration projects.

73. The government has issued several relevant regulations and laws. They include the Regulations on Budgetary Management of Government Funds, Regulations on Foundation Management, the Securities Law, Regulations on the Establishment of the China Industrial Investment Fund outside China and the Draft Regulations on Securities Investment Fund. In addition, the Law on Risk Investment Funds and the Draft Regulations on the Environmental Industry Investment Fund will be issued soon. These legislative initiatives support the establishment of a national environmental fund.

74. Environmental funds established in regions such as Tianjin and Changzhou with funding from the World Bank have adopted a commercial focus, albeit constrained by certain policy conditions. The experience gained has been invaluable. Other types of local environmental funds financed from sub-national government budgets also provide a reference point. For example, since 1997 the Hebei provincial government has allocated a certain amount of funds from its budget to establish a provincial environmental fund. The fund supports pollution control projects in some special enterprises, construction of cross-regional water management facilities and environmental demonstration projects. The experience of other sectors, such as the Ministry of Science and Technology, in fund management provides further relevant experience.

75. A number of unfavourable factors can also be noted. In recent years the national economy has not grown as strongly as in the past and a large number of state-owned enterprises continue to incur significant losses, draining government finance in the course of keeping them afloat. The country also has many competing policy priorities that claim a share of the budget. Against this broader perspective, it is difficult to implement a national environmental fund. A useful initiative has been the effort to rationalise the numerous charges and fees that have been implemented and to replace them with taxes, where appropriate and justified.

76. Based on the experience from the various types of local environmental funds in China and the lessons learned in economies in transition, it is suggested that a national environmental fund in China should be designed as a mixed fund type. The long-term objective should be to establish an organisation similar to an investment fund or policy bank, which will participate directly in making environmental investments. Major funding sources could include an appropriation from the central government budget, transfer of part of the revenue collected by the pollution levy and international assistance. An investment management company could be established and the fund should operate along commercial lines.

77. A national environmental fund could support trans-regional or trans-watershed pollution control projects that are co-ordinated by the central government, emergency responses to major pollution incidents and control of non-point source pollution. Other projects with clear environmental and economic benefits, including industrial and commercial projects related to environmental protection, could also be funded.

78. The finance could be provided in a variety of ways, including as grants, low interest loan, equity investment, etc. depending on the nature of the project.

### **5.3 *Development of an Environmental Industry Investment Fund***

79. The environmental goods and services industry is emerging as a growth sector in China in the 21<sup>st</sup> Century and the government should encourage its further development. The limited financial support that the government can provide is insufficient to develop the industry. Enterprises and individuals should be encouraged to invest through the establishment of an environmental industry investment fund. Pooling money in such a fund would enable investment in promising projects with shareholders receiving income from dividends and the sale of their shares. The Draft Regulations on the Environmental Industry Investment Fund will be issued soon and specify rights and responsibilities of the relevant parties.

## **6. Conclusions**

80. China has established local environmental funds but has yet to set up a national environmental fund. The former include the pollution levy fund, the special fund for pollution control and funds managed by investment corporations. The pollution levy fund is incorporated into sub-national government (provincial, municipal) budgets and managed under the relevant budgetary controls. This fund provides grants to facilitate enterprise investment in pollution control and to support institutional capacity building. The special fund provides loans to enterprises for pollution control projects. Funds managed by investment corporations operate along commercial lines, albeit with some constraints. Their affiliation to the local EPB limits its independence of operation and administration.

81. The budgetary management and project selection process of the local environmental funds should be strengthened. And the investment corporations should be made fully independent entities and be able to undertake risk hedging strategies. The establishment of an environmental industry investment fund would support the further development in China of this sunrise sector.

82. A national environmental fund should be established as soon as possible in China to strengthen environmental investment and to increase the sources of finance for environmental protection. Reform of the pollution levy system provides impetus for further consideration of a national environmental fund. Such a fund, together with improvements to the operation and management of local environmental funds, will play an important role in improving environmental quality in China.

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