

**Understanding and Improving the  
Environmental Data System in China**

**(Executive Summary)**

**中国环境污染数据体系  
管理体制研究  
(摘要)**

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# Executive Summary

## The questions and the approach

The quality of China's environmental data are often questioned and criticized in the world, but few actually have detailed understanding of how the data system works. Specifically, what environmental data are collected and by whom? How frequently are environmental data are sampled and what are the geographical coverage and distribution. What governmental agencies are responsible for data collection? How are data processed, analyzed, disseminated, reported and disclosed? How are the data used modified? How data get distorted and/or corrected through the complex system and various check points? These questions needed to be answered with solid empirical research and they are the questions set to be answered by this project.

We do not pretend finding the answers is easy. In fact, it is extremely challenging. That is why to date many of these issues have been mysterious and exactly why the environmental data system are criticized.

In fact, China's environmental data system has been steadily improved in the past three decades. The Chinese government has taken a step by step approach to establish the environmental pollution information system with three major pillars, namely environmental monitoring, environmental statistics and pollution discharge reporting. During the period of the 11<sup>th</sup> Five-Year Plan (2006 -2010), two new information channels of pollutant

emission reduction and national census of pollution sources were added to enhance the capacity on environmental pollution information collection, processing and application. This study aims to identify the sources of pollution data, to analyze institutional causes of information distortion, and finally to propose policy recommendations for tackling the problems of the system. We track down the entire process from data collection, processing, reporting to data use. Our approach is a combination of field survey works, expert contribution, and institutional analysis. The field data were derived from field trips and interviews in six provinces.

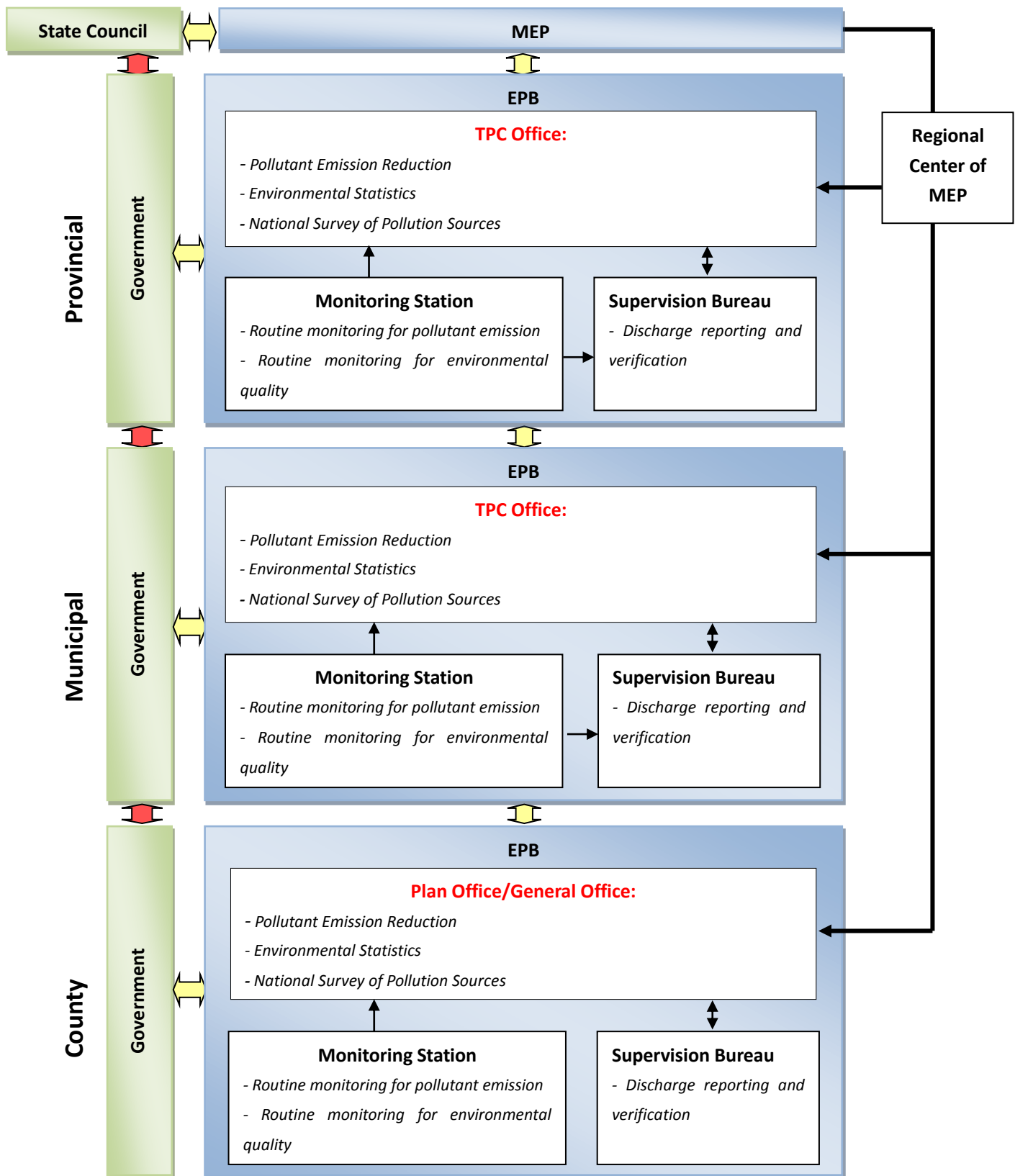
## **Major Findings**

### **1. China environmental data are collected and processed through multi-channels administered by different sectors of the environmental protection agency at each level of government**

The environmental pollution data in China consists of five categories, i.e. environmental monitoring, environmental statistics, pollution discharge reporting and verification, pollutant emission reduction and national census on pollution sources. Collection and processing of these five categories of data are conducted in different divisions of the environmental protection agency. Environmental statistic data and pollutant emission reduction data are collected by the total pollutant control office division. National census on pollution sources data is collected by the special office of national census

during 2007-2008, then transferred to total pollutant control office when the national census data renew action are carried out in 2009. The environmental monitoring station/center mainly collects concentration data on environmental quality and pollutant emission. The environmental supervision division/department is responsible for pollution discharge reporting and verification data. Thus there are different administrative channels of data collection, processing, reporting, auditing, and publishing and the inconsistency is common between data from different channels (See Figure 1).

One of the most salient characteristics in the operation of this system is administrative intervention. Environmental pollution data system is part of environmental administration system at all levels of government, and thus data collection and processing are susceptible to administrative intervention.



MEP - Ministry of Environmental Protection

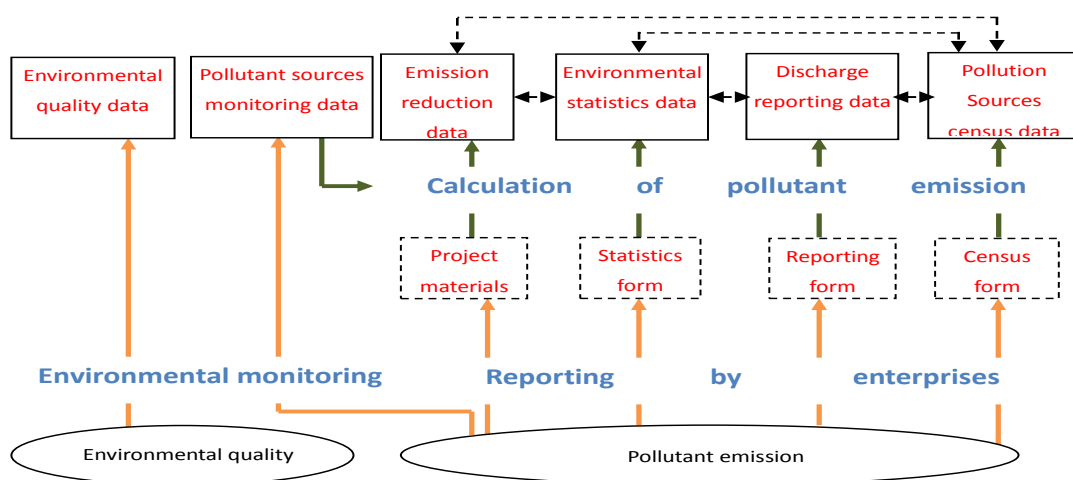
EPB - Environmental Protection Bureau

TPC - Total Pollutant Control

Figure 1 Information channels and administrative divisions

## 2. Potential data distortion exists in current system

Each of the five categories of environmental data could be distorted under the current system of administration. Among them, the monitoring data based on direct sampling is less distorted than the other four sets of data that is mainly determined by calculation of pollutant emission. In environmental monitoring, data on quality data is less distorted than the pollution source emission monitoring data. The data of enterprises' emissions reporting can be under reported due to the tendency for paying less emission charge. In the calculation of pollutant emission reduction, annual reduction of emission is reliable; however the annual increase of emissions may be problematic. During the 11<sup>th</sup> Five Year Plan period, environmental statistics data is not independent absolutely since it might be adjusted based on the results of pollutant emission reduction calculation. However, work of the national census on pollution sources is relatively independent, so the census data is less distorted than other data sets of pollutant emission.



**Figure 2 Process of pollution information generation**

### **3. Institutional causes for information distortion**

Several institutional factors may result in environmental data distortion. Local government is the essential player in data generation and has strong motivation to influence unfavorable environmental pollution data when it feels pressure from the upper level government for performance evaluation. Our analyses showed that the assessment based on *pollutant emission* is more effective on supervising the local government' environmental protection performance than the assessment based on *environmental quality* because the former is easier to assess.

There are some loopholes in current institutional system to allow environmental data distortion. The most serious problem is lacking effective external supervision and verification mechanisms. This problem exists in the whole process of data reporting by enterprises, data processing by local governments and data verification by the central government. During the 11<sup>th</sup> Five Year Period, a system and procedure of emission reduction data verification by Ministry of Environmental Protection is established and has been working well.

The policy of pollutant emission reduction assessment implemented in the period of China's 11th Five-Year Plan made great achievements to promote local environmental protection. This policy has provided the most effective assessment mechanism on the local government's environmental protection performance since the establishment of Chinese environmental

management system in 1970s. The key to the success is that the assessment focuses on actual pollutant emission reduction by projects instead of relying on pollutant emission data from the environmental statistics.

## **Policy Recommendations**

We propose two sets of policy recommendations. One is for long-term and the other is for short-term considering the current political and economic situation as well as the environmental management progress of the country.

### **1. Long-term programs**

In the long run, it is recommended to establish a technical institution of environmental pollution information that is independent from the administrative system. This independent system can be used to provide effective external supervision to the environmental regulation performance of the governmental system. Secondly, it is necessary to build a common database of plant-level discharge emission on pollution discharge reporting. Thirdly, it is recommended to strengthen the top-down assessment focusing both on pollutant emission reduction and environmental quality.

### **2. Near-term policy recommendations**

In the short run, some feasible policies based on current political, economic and environmental protection situation are recommended.



**a) Environmental statistics: an exclusive and shared database of enterprise discharge emissions information collection and processing**

It is suggested to build a shared database of enterprise discharge emissions information, which take the environmental statistics channel as the only channel on collecting, dealing and providing emission information. The database should be built on the basis of the database combination of current environmental statistics and the national census on pollution sources.

**b) Keep environmental statistics independent and strengthen the capacity of statistics personnel**

As the only regular channel for pollutant emission information collection and processing, environmental statistics data should be kept independent and the capacity of statistics personnel should be strengthened. It is recommended to decouple environmental statistics and pollutant emission reduction and keep that two important information channels independent.

**c) Strengthen supervision mechanism**

It is recommended to strengthen the internal supervision by enhancing the use of environmental monitoring data in enterprises emission reporting and strengthen external supervision by timely disclosure of environmental quality and industrial pollution emission information.

# 报告摘要

关于环境状况、污染排放和环境保护能力的准确、及时的信息是实现有效环境监管的基本前提。在过去的三十多年间，中国政府建立了以环境监测为基础的较为完整的环境污染信息体系，在环境统计、排污申报等环节不断提高环境数据的质量。“十一五”以来，围绕主要污染物减排和全国污染源普查，又进一步加强了环境污染信息的收集、处理和使用能力。尽管如此，我国的环境污染信息状况仍然经常为人所诟病。环境数据的完整性、准确性和客观性常常受到外界的质疑。针对这一现象，本研究以上述五套环境污染基础数据为对象，在查阅文件资料和实地调研的基础上，对数据形成、传递和使用的全过程进行追踪和解析，从而对造成数据失真的制度原因进行辨识。

## 一、主要研究结论

通过对现行环境污染数据体系的组织结构和数据流动机制的梳理，我们发现，现行体系是一个多渠道的、涉及多部门及多政府层级的复杂的体系。环境监测、环境统计、排污申报及核定、污染物减排和污染源普查这五套数据的职能分属于不同的部门，各套数据的收集、处理、上报、审核和最终生成也分别在各职能部门自下而上的系统内进行。不同数据渠道之间存在职能交叉但数据不相一致的现象。

数据体系的运作机制有其独特性，突出特征之一就是技术体系与行政体系融合交织，数据的生成过程受到行政体系的干预。一方面，

负责各套数据的行政部门一般具有多项职能，并且处于行政体系的考核激励中。另一方面，数据在基层的相关职能部门初步生成后，一般需要经过行政体系内层层上报和审核才会生成最终数据，这一过程使各级行政部门都参与到数据的生成过程中，具有调整数据的可能性。

通过对大量事实的调研和分析，我们认为，现行的五套环境污染数据存在着不同程度的数据扭曲现象。其中，基于直接采样分析获得的监测数据比基于计算获得污染物排放量的其他四套数据扭曲程度轻。在监测数据中，质量监测数据又比污染源排放监测数据扭曲程度轻。在四套污染物排放量数据中，环统作为减排基数，其数据形成受减排结果影响较大，数据扭曲最为严重。排污申报及核定数据与排污收费相关，受扭曲程度也相当严重。减排中的新增削减量核算结果比较真实，但其关于新增排放量和当年总污染物排放量的计算结果存在一定程度的失真。污染源普查工作比较独立，并且由于将为“十二五”减排提供基数而产生的制衡作用，使得污染源普查数据在四套污染物排放量数据中受扭曲程度最轻。

在现行五套数据的生成路径中，存在着诱导和容许数据扭曲行为发生的制度空间。在数据生成中起决定性作用的地方政府，其扭曲数据的动机主要来源于行政体系内的考核激励。实践证明，以“污染物排放量”为指标的考核比以“环境质量”为指标的考核对于地方政府有更强的激励作用，但地方政府对污染物排放量数据的扭曲动机也更强。现行体系也存在制度的漏洞容许数据扭曲行为的发生，其中最为严重的问题就是缺乏外部审核机制。在数据形成本身具有不确定性的情况

下，外部审核机制的缺乏使得企业填报和地方政府处理数据存在着较大的随意性，同时也使得中央政府在审核数据时有较大的自由裁量权。目前，唯一有效的审核工作是中央对地方减排的新增削减量审核，但这只能提供污染物排放的减量数据。对于污染物排放的统计数据，目前尚没有一个有效的外部审核机制。

虽然存在数据扭曲现象，但“十一五”期间开展的减排考核工作在推动地方环保工作上仍然取得了卓著的成效。减排考核是中国环境管理体系建立以来在激励地方环保工作上成效最为显著的一次考核工作，其成功的关键因素在于：一方面，减排考核抓住了行政体系的激励特征，并将其融入到减排考核中；另一方面，在“淡化基数、算清增量、核准减量”的原则下，减排考核淡化了基数不准的影响，将减排成果与实际项目挂钩，推动了地方在环保建设项目上的实质性进展。

## 二、政策建议

针对以上问题，我们提出了一套理想的政策愿景方案和一套短期可行的改进方案。

从长远来看，首先，建立一个独立于行政体系干预的纯技术性的信息提供机构是十分有必要的，它有利于减少数据生成过程中受到的行政体系干预，也可为政府体系内的数据生成过程提供有效的外部监督。其次，为解决企业填报渠道多、数据处理过程不一致的问题，需要建立一套共享的企业污染排放数据库，从而形成统一规范的污染物数据收集和发布渠道。再次，要将中央对地方的考核逐步转变为将污

染物减排和环境质量考核并重，既要发挥好污染物减排工作这一抓手的作用，也要从结果上对环境质量进行最终控制。

从近期来讲，出于对政策连续性和改革渐进性的考虑，只能采取一些可行的改进措施以改善环境污染数据的质量。

首先，要解决的是多渠道的企业填报问题。企业填报是污染排放数据的主要来源，把好源头关是保证数据质量的关键。建议基于污染源普查结果，以环境统计为唯一的常规数据渠道建立一个共享的企业污染数据库。取消排污申报数据，排污收费额根据企业数据库中的企业排放信息收取。

其次，既然将环境统计作为提供污染物排放量信息的唯一常规渠道，其数据的真实性问题就尤为重要，因此要采取措施优化和规范环境统计工作。在环境统计中，目前最为棘手的就是受减排结果影响而缺乏独立性的问题。建议取消环境统计作为减排基数的规定，使环境统计和减排结果的数据发布渠道相互独立。但削弱环境统计和减排的联系后，也要避免回到“十一五”以前环境统计不受重视的状态。建议在各级环保行政主管部门内成立专门的环境统计职能部门，并加强基层环境统计工作人员培训，以提升环境统计的专业能力和规范环境统计的工作程序。

再次，强化数据体系的审核机制也是解决人为扭曲问题的关键。建议加强环境监测数据对企业填报环节的审核来强化内部审核机制，并采取及时公开环境质量和企业污染排放信息的方式引入公众监督的外部审核机制。

最后，要继续实施减排考核，充分发挥好污染物减排工作这一抓手的作用。在现行体系下，减排考核被证明是一项能有效激励地方政府的手段，在“十二五”中要继续搞好减排考核工作。就“十一五”期间存在的问题提出一些改进意见如下：

其一，针对目前地方上报减排量与中央认定减排量相差悬殊的状况，建议采用“核查认定率”标准来约束地方政府虚报项目的行为，也减少中央核查的工作量。

其二，加大和落实激励措施。对企业要加大减排奖励激励，鼓励企业配合地方政府的减排工作。对地方政府要落实减排考核激励的奖惩措施，尤其是在领导干部政治晋升和区域限批方面的措施，从而保证减排考核激励持续有效。

其三，加强省以下政府的反馈环节。中央在核查地方减排项目时主要与省级沟通，省以下政府对于核定结果的不同意见很难反馈上来。建议加强省以下政府的反馈环节，从而使减排核查更加尊重地方的实际情况，增强核查的准确性。