

Soil pollution regulations

Pressing food safety issue spurs
China's regulation process on soil
contamination prevention and
remediation

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Pollution Solutions

Prevention and control of soil pollution has become the latest environmental issue to reach the top of China's legislative agenda in recent months, following revelations earlier this year that portions of the country's rice supply was tainted with the toxic heavy metal, cadmium. The country's **Ministry of Environmental Protection (MEP)** plans to release a comprehensive action plan on soil pollution soon, the ministry announced on 8 December. The MEP has also set a timeline though 2017 for legislative measures.



Soil remediation is still a relatively new concern for the country, which has a host of other environmental issues it has pledged to tackle. Investment in soil remediation is expected to reach the thousands of billions yuan, exceeding funds planned for water and air pollution control measures, which are also large financial undertakings by the government. This could open a soil restoration market in the country, which currently accounts for just 3.7% of China's environmental services industry, Xinhua news agency reported on 8 December, citing MEP officials. Specifically, soil remediation will focus on protecting farmland and water resources, controlling sources of pollution, risk management of contaminated land, demonstration projects, and monitoring and supervision. The country's soil contamination has drawn increased attention as Guangzhou municipal government released a report in May suggesting almost half of the rice sampled in the market was found to be tainted with cadmium that can damage kidneys and bones. Two subsequent local surveys in the broader area surrounding Guangzhou showed contamination levels of 5.8% and 1.4% of provincial supplies. Thus far, researchers have found that 28% of soil collected in parts of the Pearl River Delta contained high levels of mercury, cadmium, lead and arsenic. The report also said that some cities were found to have abnormal levels of radiation, exceeding the limit by 50%.

Slow progress

Although the public is increasingly worried about the safety of crops grown in contaminated soil, the monitoring of nationwide soil pollution is still in slow progression. Starting in 2006, the then minister of MEP admitted the grim situation of soil contamination. In the same year, MEP, together with the **Ministry of Land and Resources (MLR)**, initiated the first national general survey into soil contamination. The government spent USD 160m (CNY 1bn) for the survey over the next five years. However, authorities have kept the data gathered under wraps on the grounds that the information is a state secret. In October 2011, MEP announced that 8.3% of the nation's cultivated land was polluted. Six months later, the **State Council** revealed the Five-Year-Plan (FYP) for soil contamination prevention, spanning to the end of 2015.

Early this year, the State Council issued another plan named *Current Arrangement for Soil Environment Protection and Control*. Sources close to the matter told *XportReporter* that this newly-released report is simply a delayed FYP. In June, immediately after the Guangzhou cadmium rice incident, the MLR started to compile a nationwide pollution map to gauge the level of heavy metal contamination in soil. The survey included collecting soil samples across the country and inspecting levels of 78 chemical elements in both topsoil and soil a meter underground. However, no timetable for the survey was given, nor did MLR say whether the result would be released to the public this time.

Goals of the five-year-plan

- To clarify the status of China's soil environment
- To establish a serious environmental protection regulation for cultivated land and water resources in order to stop the increase of soil pollution and ensure the compliance rate of environmental survey of China's cultivated land is no less than 80%
- To establish regulations on regular surveys and monitoring
- To complete a monitoring network for soil quality in 60% of cultivated land and in areas with water resources serving a population more than 500,000
- To increase the monitoring ability for soil quality
- To be capable of controlling the risk of reusing polluted land
- To select pilot areas for soil contamination treatment and remediation
- To establish general soil protection policies, laws and standards
- By the end of 2020, China's basic system of soil contamination and control should be developed



Various pollution sources

Establishing guidelines to tackle China's soil pollution problem is one aspect, but the remediation may give rise to more challenges because the contamination comes from various sources.

One source is from the over application of pesticide and fertilizer. China consumes 1.3 million tons of pesticides per year, which is 2.5 times the world average level. Some areas use pesticide and fertilizer excessively. As a result, more than 70% leads to soil pollution, also known as persistent organic pollutants.

Heavy metal is another major source. The contamination is not only increasing, but also transferring and spreading from industrial to agricultural industries, from towns to rural areas, from topsoil to underground, from water to all kinds of food.

Heavy industries, such as petrochemical factories, also contribute to soil contamination, which is categorized as organic soil pollution.

Another source is improper dumping of wastes, especially electronic wastes, because of their heavy metal and organic material components.

Limited technology and public information

Although, government projects prefer local companies' bids, the technology gap on soil contamination treatment presents opportunities for foreign players.

Still in an infant stage, China's soil remediation market lacks well-established technological standards, fee-charging standards, and market mechanisms.

The government's blackout of soil-pollution data makes it even more challenging to evaluate the industry.

In addition, some domestic companies focus on soil treatment in a temporal efficient way, instead of long term sustainability. Chemicals effective temporarily may lead to secondary pollutions. Thus, Chinese projects need foreign consulting services as well.

Market players

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Chinese companies that are involved in soil remediation and related services are potential targets for foreign companies looking to enter China. These companies include **Hunan Yonker Environmental Protection Co.**, **BCEG Environmental Remediation Co.**, **Beijing GeoEnviron Engineering & Technology, Inc.**, **Beijing Dingshi Environmental Engineering Co.**, **Jiangsu Welle Environmental Co.**, **Jiangsu DDBS Environmental Remediation Co.**, **Hunan Kaitian Environmental Technology Co.**, and **Sound Group**.

Measurement and testing equipment could also be a key market for potential exporters. Some companies that are involved in China or could be potential beneficiaries include **Center Testing International Corp.**, **Focused Photonics Inc.**, **Techand**, **Jiangsu Skyray Instrument Co.**, **DJE**, and **Pony Test**.