



Action Plan for Prevention and Control of Soil Pollution in China

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On behalf of



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Environment, Nature Conservation
and Nuclear Safety

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Introduction of the Sino-German Environmental Partnership

And related Activities on Soil Pollution Prevention and Control

For eight years, the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) has been promoting and funding projects in the field of climate change and biodiversity through the International Climate Initiative (IKI) in China and many other countries. Within the framework of the comprehensive Sino-German strategic partnership, nine bilateral, one regional and nine global projects funded by the German IKI are currently being implemented in cooperation with Chinese partners.

As part of this, the Sino-German Environmental Partnership aims to support the bilateral environmental dialogue and advises the Ministry of Environmental Protection (MEP) of the People's Republic of China regarding the effective implementation of the 13th Five-Year-Plan, China's environmental governance structure (policy advice, legislation and regulations, incentive systems, standards), mechanisms for the promotion of sustainably consumption and production, eco-labeling, improvement of resource efficiency, and improvements in the fields of air, soil and water pollution prevention, as well as public participation.

On behalf of the BMUB the Sino-German Environmental Partnership supports the MEP and the China Council for International Cooperation on Environment and Development (CCICED) in their endeavors to implement methods to prevent soil pollution more efficiently, and to reduce the harmful effects of heavy metal pollution soil and water quality. Besides others, a report on the EU and German regulative framework had been compiled; an active exchange between governmental officials, experts and soil remediation practitioners had been supported by workshops in China and by a study tour to Germany. Further activities to support the soil pollution prevention and the newly established department within MEP are in discussion.

China's soil pollution problem is not less severe than its air pollution challenge. The consequences of soil pollution on the environment and human health are all-encompassing and they negatively impact food security as well as water quality.

In order to cope with this new major challenge, on 28th of May 2016, the State Council of the People's Republic of China issued a soil pollution prevention and control action plan. The plan aims to improve soil quality and ensure soil safety in agricultural land and industrial sites and a healthy living environment for people. This plan complements two previously issued pollution prevention plans targeting air and water pollution aspects.

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Action Plan for Prevention and Control of Soil Pollution

By the State Council, May 28, 2016

Soil is an essential material foundation to social and economic development, pivotal for people's health and a beautiful China, therefore it is an important part of ecological civilization and national ecological security to protect soil environment. At present, our soil environment in general is alarming, and getting worse in some region, which has become one of prominent risks for building a moderately prosperous society in an all-round way. This action plan is elaborated to strengthen soil pollution prevention and control and gradually improve the quality of soil environment.

General requirements

We shall fully carry out the spirit of the eighteenth National Congress of the CPC and the 3rd, 4th, and 5th Plenary Sessions of the 18th CPC Central Committee, firmly establish the new development concept featuring innovative, coordinated, green, open and shared development, according to China's overall approach to promote economic, political, cultural, social and ecological progress and the Four Comprehensives¹ strategic blueprint. We shall implement the decisions and arrangements of the CPC Central Committee and the State Council, to improve quality of soil environment and ensure safe agricultural products and a healthy living environment for people, taking account of national conditions and stage of development. We shall stick to the principles of "emphasis on prevention, according priority to protection, and risk management", strictly control newly increased pollution and gradually reduce existing pollution, highlighting key regions, industries and pollutants and using a differentiated approach to pollution control based on different categories, uses, and stages. We shall form a system for prevention and control of soil pollution which combines government guidance, enterprises assuming the main responsibility, public participation and scrutiny, to promote sustainable use of soil resource and fight for a beautiful China with a blue sky, clear waters and green mountains.

Targets

By 2020, the nation's worsening trend of soil pollution is expected to be curbed, the quality of soil environment in general will remain stable, and the safety of soil environment for agricultural land and

¹ The Four comprehensives strategic blueprint refers to comprehensively building a moderately prosperous society, comprehensively deepening reform, comprehensively implementing the rule of law and comprehensively strengthening Party discipline.

construction land will have been guaranteed with soil environmental risks basically under control. By 2030, soil pollution risks will be fully put under control and improvements to polluted soil will have been made, the safety of soil environment for agricultural land and construction land will have been effectively guaranteed with all risks under control. By the mid-21st Century, soil environmental quality will have improved comprehensively and a virtuous cycle in the ecosystem will have been formed.

Key indicators

By 2020, around 90 percent of polluted arable land and over 90% of contaminated sites should be made safe for human use. By 2030, over 95% of both polluted arable land and contaminated sites should be made safe for human use.

Section 1 Conducting soil pollution surveys to get a full picture of soil quality

(1) Conduct in-depth soil environmental quality surveys

Based on existing surveys, detailed surveys on soil pollution will be conducted with a focus on agricultural land and land used for key industries and enterprises. Specifically, by 2018, the total area, distribution and the impact of contaminated agricultural land on agricultural products will be identified, and by 2020, distribution of contaminated sites for land used for key industries and enterprises and their environmental risks will be ascertained. An overall plan and technical requirements for the survey should be elaborated, technical guidance, supervision and inspection, and assessment should be implemented subsequently. A regular survey system for soil environmental quality shall be established to conduct soil quality survey every 10 years. *(Leading agency: Ministry of Environmental Protection. Participating agencies: Ministry of Finance, Ministry of Land and Resources, Ministry of Agriculture, National Health and Family Planning Commission. All the following needs to be implemented by local governments at all levels, and won't be listed hereinafter.)*

(2) Establish networks for monitoring soil environmental quality

Soil environmental quality monitoring sites will be uniformly planned, integrated and optimized. By the end of 2017, installation of state-controlled monitoring sites will have been completed, national network for monitoring quality of soil environment will have been established and industrial monitoring network will be given full play, so as to build basic capacity of soil environmental monitoring. Training courses on monitoring soil environmental quality should be provided to technicians at provincial (autonomous regions and municipal) level at least once a year. Local governments can set up more monitoring sites, increase monitoring of site-specific pollutants and monitoring frequency according to the actual requirements. By the end of 2020, monitoring sites should cover all counties (cities, districts). *(Leading agency: Ministry of Environmental Protection. Participating agencies: National Development*

and Reform Commission, Ministry of Industry and Information Technology, Ministry of Land and Resources, Ministry of Agriculture).

(3) Improve information-based management of soil environment.

By 2018, a database for soil environment and an information based platform for management of soil environment will have been established, using data from Ministry of Environmental Protection, Ministry of Land and Resources, and Ministry of Agriculture. The channel to obtain data will be widened with the aid of technologies such as mobile internet and the Internet of Things (IoT) to achieve dynamic update of data. It is necessary to strengthen data sharing. Inventories for resource-sharing should be made available to clarify permissions and modes of sharing, and enhance the role of soil environment big data in prevention and control of pollution, rural-urban planning, land use, and agricultural production. *(Leading agency: Ministry of Environmental Protection. Participating agencies: National Development and Reform Commission, Ministry of Education, Ministry of Science and Technology, Ministry of Industry and Information Technology, Ministry of Land and Resources, Ministry of Housing and Urban-Rural Development, Ministry of Agriculture, National Health and Family Planning Commission and State Forestry Administration).*

Section 2 Promoting legislation on prevention and control of soil pollution, building a sound legal framework

(4) Accelerate legislation process.

We will assist in elaborating the law on the prevention and control of soil pollution. Relevant laws and regulations should be revised regarding pollution prevention and control, rural-urban planning, land management, and quality and safety of agricultural products, to include the subject of prevention and control of soil pollution. By the end of 2016, the revision of regulations on pesticide management will have been completed; the regulations on soil environmental management of contaminated sites and soil environmental management of agricultural land will have been released. By the end of 2017, regulations on collecting and treatment of waste pesticide packages and containers, soil management of land used for mining and industries, recycling of used agricultural films will have been released. By 2020, the regulatory system for prevention and control of soil pollution will have been established. Local governments can develop their own regulations according to local realities. *(Leading agencies: Legislative Affairs Office of the State Council and Ministry of Environmental Protection. Participating agencies: Ministry of Industry and Information Technology, Ministry of Land and Resources, Ministry of Housing and Urban-Rural Development, Ministry of Agriculture, State Forestry Administration).*

(5) Systematically establish standards system.

Standards and technical specifications regarding prevention and control of soil pollution should be improved. By the end of 2017, soil environmental quality standards for agricultural land and construction lands should be issued; technical standards on monitoring, investigation and evaluation, risk control and management, soil pollution treatment, management and remediation, and technical guidelines on environmental impact assessment will be developed or revised. Standards guiding the maximum contents of toxic and hazardous substances in fertilizers, animal feed, irrigation water, and standards on pollution control in agricultural sludge shall be revised to strictly control pollutants. Standards on agricultural films shall be revised to enhance the requirement of thickness, and standards on biodegradable films shall be studied and developed. Standards on pesticide packages and containers shall be revised to avoid soil pollution by waste pesticide packages and containers. Emission standards of pollutants should be timely revised with further clarification of emission limit values. Analysis and testing methods for soil pollutants shall be improved, and soil standard reference samples shall be developed. Local governments can make their own quality standards more stringent than national standards. *(Leading agency: Ministry of Environmental Protection. Participating agencies: Ministry of Industry and Information Technology, Ministry of Land and Resources, Ministry of Housing and Urban-Rural Development, Ministry of Water Resources, Ministry of Agriculture, General Administration of Quality Supervision, Inspection and Quarantine, State Forestry Administration).*

(6) Comprehensively strengthen supervision and law enforcement.

Key targets for supervision should be identified. Heavy metals contained in soil such as cadmium, mercury, arsenic, lead, chromium, and organic pollutants such as PAHs and TPHs should be monitored; target industries such as non-ferrous metal metallurgy, petroleum processing, oil drilling, chemical industry, coking, electroplating, tanning should be supervised, and key areas that include major grain (or oil) producing counties and built-up areas in cities at and above prefecture level. *(Leading agency: Ministry of Environmental Protection. Participating agencies: Ministry of Industry and Information Technology, Ministry of Land and Resources, Ministry of Housing and Urban-Rural Development, Ministry of Agriculture).*

Strengthen law enforcement. Prevention and control of soil pollution should be made an important component of environmental law enforcement and environmental monitoring networks should be fully utilized so as to strengthen supervision and law enforcement on a regular basis. Environmental violation activities such as illegal discharge of toxic and hazardous pollutants, illegal storage of hazardous chemicals, illegal disposal of hazardous waste, abnormal operating of pollution treatment facilities, and falsification of monitoring data shall be punished severely. Special law enforcement for

enterprises in key industries shall be organized and cases that heavily contaminate soil and cause public discontent shall be handled within a set time limit under the supervision of higher authorities. Local staff should be equipped with rapid detection instruments for soil pollution to improve their law enforcement conditions, and technical training courses on prevention and control of soil pollution should be provided nationwide to law enforcement personnel every three years. The emergency response ability and contingency plans for environmental incidents at different levels should be improved; capacity building on emergency management, technical support, emergency handling and relief should be strengthened. *(Leading agency: Ministry of Environmental Protection. Participating agencies: Ministry of Industry and Information Technology, Ministry of Public Security, Ministry of Land and Resources, Ministry of Housing and Urban-Rural Development, Ministry of Agriculture, State Administration of Work Safety, State Forestry Administration).*

Section 3 Promoting classified management of agricultural land, safeguarding agricultural production environment

(7) Categorize agricultural land based on soil quality

Agricultural land will be classified into three categories by degree of contamination: Priority land for protection (unpolluted and slightly polluted), land of safe use (lightly and moderately polluted) and land under strict control (heavily polluted). Corresponding measures will be taken to ensure the safety of agricultural products, with a focus on arable land. By the end of 2017, technical guidelines on classification of agricultural land based on soil quality should be released. Based on the results of detailed soil contamination surveys, arable land and agricultural products shall be concurrently monitored and evaluated. Built on pilot projects, soil classification of arable land shall be promoted step by step and a soil inventory shall be gradually established by the end of 2020. . The classification result will be approved by provincial governments, and data should be uploaded to the national platform for soil environment information. The area and distribution of all classified arable land will be updated regularly according to the changes in land use and soil quality. Other types of agricultural land such as forests, grasslands, and horticultural plots should be classified gradually, where possible. *(Leading agencies: Ministry of Environmental Protection and Ministry of Agriculture. Participating agencies: Ministry of Land and Resources, State Forestry Administration).*

(8) Strengthen protection of arable land.

Priority arable land that is qualified for protection should be designated as permanent basic farmland to make sure its area will not be reduced, its quality will not decline, and particularly it will not be occupied by construction projects except key projects in accordance with the law. Major grain (oil) production counties should make their own plans for protection of soil environment. High standard farmland projects shall preferably consider those regions where priority arable lands for protection are

concentrated. We will promote a series of measures such as returning crop straws to field, application of organic fertilizers, less or no-tillage, crop rotation of cereals and legumes, reduction and reuse of agricultural films. We will continue to implement pilot projects to protect black soil. The recipients of rural land transfer should take responsibilities to protect soil and avoid soil quality decline caused by overuse of chemical fertilizers and misuse of pesticides. Warnings should be issued and restrictions on environmental impact assessment (EIA) approvals should be imposed by provincial governments to those counties or cities within their jurisdiction in which the area of priority arable land is reduced or soil quality declines. *(Leading agencies: Ministry of Land and Resources and Ministry of Agriculture. Participating agencies: National Development and Reform Commission, Ministry of Environmental Protection, Ministry of Water Resources).*

Prevention and control of industrial pollution. In those regions where priority arable land for protection is concentrated, new enterprises should be strictly controlled in the field of non-ferrous metallurgy, petroleum processing, chemical industry, coking, electroplating, and tanning. Existing enterprises should adopt new technologies and processes to speed up upgrading. *(Leading agencies: Ministry of Environmental Protection and National Development and Reform Commission. Participating agency: Ministry of Industry and Information Technology).*

(9) Promote safe use of lightly and moderately polluted arable land.

Based on the state of soil pollution and whether and how the level of contaminants contained in agricultural products have exceeded legal thresholds, those counties (cities, districts) where the category of land for safe use is concentrated, should make and implement plans for safe use of the lightly and moderately polluted arable land, taking local major crops and farming practices into account. Agronomic measures and alternative cropping systems should be used to reduce the risk that the level of contaminants in agricultural products exceeds standards. The quality of agricultural products shall be tested more frequently, and relevant training and technical guidance should be provided to farmers and farmers' cooperatives. By the end of 2017, technical guidelines on the safe use of polluted arable land should be released. By 2020, 40 million *mu* of lightly and moderately polluted arable land should be made safe for use. *(Leading agency: Ministry of Agriculture. Participating agency: Ministry of Land and Resources)*

(10) Strict control over heavily polluted arable land

Strengthen land use management of the arable land under the strict control category. Areas prohibited from production of specific agricultural products should be defined where growth of edible agricultural products is banned. Counties (cities, districts) should develop plans for managing environmental risks and implement measures if this type of land is a threat to the safety of groundwater and drinking water.

Heavily polluted arable land shall be integrated into the National Program of Returning Farmland to Forest and Grassland, plans should be made and implemented to readjust cropping systems of this type of arable land or return it to forest and grassland. We will continue to implement pilot projects in Hunan's Changsha-Zhuzhou-Xiangtan region to remediate arable land contaminated with heavy metals and readjust cropping systems. We will also implement pilot projects on crop rotation and fallow system. By 2020, for 20 million *mu* of heavily polluted arable land the cropping systems will be readjusted or the land will be returned to forest and grassland. (*Leading agency: Ministry of Agriculture. Participating agencies: National Development and Reform Commission, Ministry of Finance, Ministry of Land and Resources, Ministry of Environmental Protection, Ministry of Water Resources, State Forestry Administration*).

(11) Strengthen soil management of forestland, grassland and horticultural plots.

Application of pesticides shall be strictly controlled on forestland, grassland and horticultural plots, the use of highly toxic and highly persistent pesticides will be prohibited. Management of bio-pesticides and attractants should be improved and their application should be promoted. Heavily polluted pastures should be classified into land of no grazing or into rest periods. We will strengthen the quality test of edible agricultural (forestry) products produced in heavily polluted forest land and horticultural plots, and readjust the cropping systems if toxic substances are above the limits. (*Leading agencies: Ministry of Agriculture and State Forestry Administration*).

Section 4 Implement the "access conditions"² for construction land to avoid risks for human livelihood

(12) Clarify the "access conditions".

A survey and evaluation system will be established. By the end of 2016, technical regulations on survey and evaluation of soil environment of construction land shall be promulgated. From the beginning of 2017, if the land use rights are to be taken back from those enterprises in the field of non-ferrous metal metallurgy, petroleum processing, chemical industry, coking, electroplating and tanning, or their land use will be changed for housing and public facilities such as commercial buildings, schools, hospitals and nursing homes, the subsequent land users shall take responsibility to conduct survey and evaluation of the soil environment. If land use rights have been taken back, then city/county governments shall be responsible. From 2018, if the heavily polluted agricultural land will be changed for urban construction purpose, concerned city/county governments shall be responsible for conducting

² The "access conditions" is an industrial policies in China where the governments mandates that development projects have to meet certain basic requirements in terms of quality, environmental issues, energy use, material inputs, technologies, production capacities, safety, public health and corporate social responsibilities in order to secure governmental approval and kick off.

surveys and evaluation. The survey and evaluation results shall be filed at local bureaus for environmental protection, urban-rural planning and land resources. *(Leading agency: Ministry of Environmental Protection. Participating agencies: Ministry of Land and Resources and Ministry of Housing and Urban-Rural Development).*

Management measures shall be identified according to land use purpose. From 2017, local governments shall, based on the results of thorough soil pollution survey and assessment of the soil environment of construction land gradually make a list of contaminated sites and a negative list for their development and properly design the purpose of land use. Contaminated sites which meet the soil quality requirements of a particular plan can start with the procedure. Contaminated sites which temporarily will not be used or cannot be remediated for the time being should be marked by the county government who should set up signboards, make public notifications and conduct monitoring on soil, surface water, groundwater and air. Responsible entities shall take up environmental risk management measures such as isolating and blocking pollutants if pollution expands. *(Leading agency: Ministry of Land and Resources. Participating agencies: Ministry of Environmental Protection, Ministry of Housing and Urban-Rural Development, Ministry of Water Resources).*

(13) Fulfill supervision responsibility.

Local departments for rural-urban planning should consider the status of soil quality and strengthen official review and approval of plans. Local departments for land resources shall, based on overall land use plans, rural-urban plans, and the state of site-specific soil environmental quality, strengthen the supervision over land requisition, resumption, purchase, transfer and land use change. Local environmental protection departments shall strengthen supervision over surveys on soil environment of construction land, risk assessment, treatment, management and remediation of contaminated sites. A communication mechanism shall be established among departments for rural-urban planning, land resources and environmental protection to achieve coordinated management. *(Leading agency: Ministry of Land and Resources, Ministry of Environmental Protection, Ministry of Housing and Urban-Rural Development).*

(14) Strict the "access conditions" in term of land use

The management requirements for soil environment should be integrated into urban planning and land supply. Land use and development must meet the requirement for soil environmental quality. Local departments for land resources and rural-urban planning should fully consider the environmental risk of contaminated sites and determine appropriate land use when formulating overall land use plans, urban master plans and planning & development regulations. *(Leading agency: Ministry of Land and*

Resources and Ministry of Housing and Urban-Rural Development. Participating agency: Ministry of Environmental Protection).

Section 5 Strengthening protection of unpolluted soil and control of new soil pollution

(15)Strengthen environmental management of unused land.

Unused land should be scientifically developed in an orderly manner to avoid soil pollution. County (city, district) governments shall organize quality assessment of soil environment if unused land is to be developed for agricultural use, land which does not meet the standards cannot be used for growing edible agricultural products. Local governments shall strengthen the protection of unused land which has been reserved for arable land and conduct regular inspections. Illegal discharge of wastes and toxic and hazardous substances into deserts, littoral zones, saline-alkali land, and swamps will be investigated strictly. Local governments should strengthen the supervision over unused land which could be affected potentially by mining and oil drilling, and urge concerning enterprises to take control measures if soil pollution is found. Soil improvement of saline-alkali land will be promoted, experiments to improve saline-alkali land using desulphurization gypsum from coal-fired power plants will be demonstrated by Xinjiang Production and Construction Corps from 2017. *(Leading agencies: Ministry of Land and Resources and Ministry of Environmental Protection. Participating agencies: National Development and Reform Commission, Ministry of Public Security, Ministry of Water Resources, Ministry of Agriculture, State Forestry Administration).*

(16)Take precautions against additional pollution caused by construction projects

For construction projects discharging major pollutants, the impact on soil environment has to be integrated into environmental impact assessment, and detailed countermeasures have to be proposed in EIA. Facilities to prevent and control soil pollution must be designed, constructed and used simultaneously with the principle part of the project. Environmental protection agencies must supervise and monitor the implementation of these measures. From 2017, local governments shall sign Letters of Responsibility for soil pollution prevention and control with enterprises of key industries to make these measures and responsibilities clear, and the Letters of Responsibility shall be released to the public. *(Leading agency: Ministry of Environmental Protection).*

(17)Strengthen spatial planning and management

Feasibility studies of functional zoning and spatial distribution of construction projects should be strengthened, taking account of environmental capacity including soil capacity, to determine appropriate regional functions and spatial layouts. Industrial enterprises are encouraged to develop in the form of clusters in order to improve land use efficiency and reduce soil pollution. The location of

enterprises have to meet its sectoral requirements, it is not allowed to build new non-ferrous metal metallurgy and coking enterprises near residential areas, schools, hospitals and nursing homes. Those enterprises which have caused serious soil pollution have to be relocated or shut down, in accordance with requirements on new urbanization, industrial restructuring, and cut on excessive capacity. Facilities and premises for treatment and disposal of household and hazardous wastes and recycling of waste resources should be distributed scientifically, according to functional zoning and the need for prevention and control of soil pollution. The distribution and scale of livestock and poultry farms have to be reasonable as well. *(Leading agency: National Development and Reform Commission. Participating agencies: Ministry of Industry and Information Technology, Ministry of Land and Resources, Ministry of Environmental Protection, Ministry of Housing and Urban-Rural Development, Ministry of Water Resources, Ministry of Agriculture, State Forestry Administration).*

Section 6 Strengthen supervision over pollution sources to prevent soil pollution

(18) Strict control of pollution caused by industrial and mining enterprises

Enhance daily environmental supervision. According to the spatial distribution and the state of pollution discharge by industrial and mining enterprises, lists of key monitored enterprises for soil environment should be established and updated regularly, and released to the public. The enterprises in the lists shall take responsibility for monitoring soil environment of their land every year, and the results shall be released to the public. Agencies for environmental protection should monitor regularly key enterprises and around industrial zones, the results shall be submitted to the National Platform for Management of Soil Environment as a base for law enforcement and risk warning. The list of substitutes for toxic and hazardous materials/products shall be revised at appropriate time. The control of hazardous substances in electrical appliances, electronics and motor vehicles shall be strengthened. Enterprises in industries such as non-ferrous metal metallurgy, petroleum processing, chemical industry, coking, electroplating, and tanning, should develop plans in advance for removal and treatment of residual pollutants when dismantling facilities for production and pollution treatment and buildings. The plans shall be filed at county bureaus for environmental protection, industry and information technology. Safe treatment and disposal during dismantling shall be carried out in line with regulations to avoid soil pollution. By the end of 2017, the technical specifications on prevention and control of pollution caused by dismantling shall be released. *(Leading agencies: Ministry of Environmental Protection and Ministry of Industry and Information Technology).*

Pollution by mining activities shall be strictly prevented. From 2017, special emission limit values for key pollutants will be carried out in provinces with intensive mining activities including Inner Mongolia, Jiangxi, Henan, Hunan, Hubei, Guangdong, Guangxi, Sichuan, Yunnan, Guizhou, Shaanxi, Gansu and Xinjiang. Legacy tailings will be managed comprehensively and measures such as film mulching, soil

compaction, flood discharge, and dam reinforcement, shall be improved to screen hazards and risks, and measures on shutting down tailings shall be improved as well. Enterprises with key government-monitored tailings shall conduct environmental risk assessment, improve facilities for pollution control, and have emergency supplies in store. The supervision over radiation safety shall be strengthened in mining areas and relevant enterprises shall conduct radiation monitoring for the soil in their respective mining areas every year. *(Leading agencies: Ministry of Environmental Protection and State Administration of Work Safety. Participating agencies: Ministry of Industry and Information Technology, Ministry of Land and Resources).*

Strengthen prevention and control of pollution in heavy metal industries. Emission standards on heavy metal pollutants shall be enforced strictly, and total volume control targets for pollutants shall be achieved. Regulatory supervision and oversight should be enhanced. Enterprises which cannot meet the standards even after rectification should be suspended or closed in accordance with laws and the companies name list shall be made available to the public. We will continue to phase out backward production capacities in key heavy metal industries and raise “access conditions” for heavy metal industries. New projects with backward production capacities or in sectors facing excessive capacities will be banned. Incandescent lamps will be phased out step by step as planned. Raise the standards for phasing out backward capacities in sectors such as lead-acid batteries to gradually eliminate backward production capacities. Plans for promoting clean production techniques in key heavy metal industries shall be developed to encourage enterprises to adopt advanced and appropriate techniques and technologies. By 2020, the discharge of major heavy metal pollutants in key industries has to be cut by 10 percent compared with 2013 levels. *(Leading agencies: Ministry of Environmental Protection and Ministry of Industry and Information Technology. Participating agency: National Development and Reform Commission).*

Strengthen treatment and disposal of industrial wastes. Programs shall be carried out to comprehensively overhaul storage sites for tailings, coal gangue, synthetic gypsum, fly ash, red mud, smelting slag, carbide slag, chromium slag, arsenic slag, as well as solid wastes generated from desulfurization, denitrification, and dust elimination. Facilities to prevent scattering, run-off and leaking of contaminants have to be built and improved. Formulate and carry out overhaul plans step by step. Strengthen comprehensive use of industrial solid wastes. Overhauls are needed in regard to recycling of electronic wastes, waste tyres and waste plastics. Enterprises are encouraged to adopt advanced and appropriate techniques and to gather in clusters to build and operate centralized facilities for waste treatment to avoid soil and groundwater pollution. From 2017, co-control pilot projects of sewage & sludge and waste gas & waste residues shall be implemented in selected cities of Beijing-Tianjin-Hebei Region, Yangtze River Delta Region and Pearl River Delta Region. *(Leading agencies: Ministry of Environmental Protection and National Development and Reform Commission).*

Participating agencies: Ministry of Industry and Information Technology, Ministry of Land and Resources).

(19)Control of agricultural pollution

Chemical fertilizers and pesticides should be used appropriately. Farmers are encouraged to apply organic fertilizers, reduce application of chemical fertilizers and to scientifically use pesticides. The use of effective but less toxic and less persistent pesticides, and advanced sprayers shall be promoted. Integrated pest control and green and natural solutions shall be strengthened. Recycling of pesticide packages and containers shall be increased and pilot projects shall be implemented in selected major grain (oil) and vegetable production counties of Jiangsu, Shandong, Henan and Hainan Provinces. By 2020, this shall be extended to 30% of the major grain (oil) production counties and all major vegetable production counties nationwide. "Clean" agricultural production will be promoted, resourceful use of agricultural residues will be demonstrated and a series of replicable technical models for prevention and control of agricultural non-point source pollution will be developed. It will be strictly prohibited to use urban household waste, sewage sludge, and industrial waste as fertilizers. By 2020, there will be zero increase in the total consumption of chemical fertilizers and pesticides for major crops, chemical fertilizer and pesticide use efficiencies will have reached over 40%, , and the fertilizer application technology recommendations based on soil testing shall be extended to over 90% of cropland. *(Leading agency: Ministry of Agriculture. Participating agencies: National Development and Reform Commission, Ministry of Environmental Protection, Ministry of Housing and Urban-Rural Development, All China Federation of Supply and Marketing Cooperatives).*

Recycling and reuse of agricultural films shall be strengthened. Illegal production and sales of substandard agricultural films will be cracked down upon. A network shall be established to collect, store, recycle and reuse waste films and pilot programs shall be carried out. By 2020, complete recycling and reuse of agricultural films shall be achieved in the provinces of Hebei, Liaoning, Shandong, Henan, Gansu and Xinjiang with high consumption of agricultural films. *(Leading agency: Ministry of Agriculture. Participating agencies: National Development and Reform Commission, Ministry of Industry and Information Technology, Ministry of Public Security, State Administration for Industry and Commerce, All China Federation of Supply and Marketing Cooperatives).*

Strengthen prevention and control of pollution from livestock and poultry breeding. The production and use of veterinary antibiotics and feed additives will be strictly regulated, their overuse shall be prevented and reduction at the production sources should be promoted. Livestock excreta should be used comprehensively, pilot projects should be implemented in selected major pig raising counties to demonstrate mixed crop-livestock systems, and circular development. It is encouraged to build facilities for livestock waste handling and treatment. By 2020, over 75% of large-scale livestock and

poultry farms will be equipped with facilities to treat livestock waste. *(Leading agency: Ministry of Agriculture. Participating agencies: National Development and Reform Commission, and Ministry of Environmental Protection).*

Strengthen quality management of irrigation water. Irrigation water will be monitored, and its quality has to meet farmland irrigation water quality standards. For regions where soil has been polluted by irrigation water, and has become a threat for safety of agricultural products, cropping systems have to be adjusted. *(Leading agency: Ministry of Water Resources. Participating agency: Ministry of Agriculture).*

(20)Reduce residential pollution.

A coordination mechanism should be established involving government, communities, enterprises and residents. Garbage should be reduced and reutilized through separate disposal, collection, and recycling. Rural cleaning and garbage collection system should be established to treat household waste, and residential wastewater treatment projects should be implemented. Informal landfills shall be improved. The policy of "using rewards to promote treatment" will be further carried out to improve rural environment to a higher level and broader scope. Co-processing household waste in cement kilns shall be promoted. It is encouraged to use sewage sludge in ornamental gardens and parks if the quality can meet certain standards after treatment. Pilot projects will be implemented to demonstrate production of construction materials making use of construction waste. Safe disposal of waste containing heavy metals such as used mercuric oxide batteries, nickel-cadmium batteries, lead-acid batteries, fluorescent lamps, and thermometers shall be strengthened. Excessive packaging is to be reduced and the use of products with environmental labels shall be encouraged. *(Leading agency: Ministry of Housing and Urban-Rural Development. Participating agencies: National Development and Reform Commission, Ministry of Industry and Information Technology, Ministry of Finance, Ministry of Environmental Protection).*

Section 7 Carrying out soil pollution treatment, management and remediation to improve soil quality

(21)Identify obligors for pollution treatment, management and remediation

The polluter-pays principle shall be applied, and the entity or individual who pollutes is responsible for pollution treatment, management and remediation. If the obligor has changed, the person or entity who inherits its rights and obligations has to take responsibilities. In the case of land use right transfer, the transferee or a responsible party agreed on by both parties will bear responsibility. If the obligor cannot be identified, government authorities at county level are responsible for soil pollution treatment and remediation. *(Leading agency: Ministry of Environmental Protection. Participating agencies: Ministry of Land and Resources, Ministry of Housing and Urban-Rural Development).*

(22) Develop plans for soil pollution treatment, management and remediation.

A plan for soil pollution treatment, management and remediation has to be developed by each provincial (autonomous regions, municipal) government by the end of 2017, to identify key tasks, responsible units and detailed annual implementation plans, and to establish project databases. The plan should focus on key soil pollution issues which threaten the quality of agricultural products and health of living environment, and be filed at the Ministry of Environmental Protection. This target should be achieved firstly in 3 regions, including Beijing-Tianjin-Hebei Region, Yangtze River Delta Region and Pearl River Delta Region. *(Leading agency: Ministry of Environmental Protection. Participating agencies: Ministry of Land and Resources, Ministry of Housing and Urban-Rural Development, Ministry of Agriculture).*

(23) Conduct soil pollution treatment, management and remediation in an orderly manner

Key targets shall be identified. Those contaminated sites to be developed into residential and commercial areas, schools, hospitals and nursing homes should be identified as key targets, considering urban environmental improvement and adjustment of development plans. Soil pollution treatment, management and remediation should be conducted firstly in the regions of Jiangxi, Hubei, Hunan, Guangdong, Guangxi, Sichuan, Guizhou and Yunnan provinces, where polluted arable lands are concentrated. Other provinces have to identify key regions for pollution treatment and remediation based on the degree of soil pollution in arable land, the environmental risks and impacts. By 2020, 10 million *mu* of polluted arable land have to be treated and remediated. *(Leading agencies: Ministry of Land and Resources, Ministry of Environmental Protection, Ministry of Agriculture. Participating agency: Ministry of Housing and Urban-Rural Development).*

Strengthen supervision over soil pollution treatment, management and remediation projects. Treatment and remediation in principle have to be conducted at the original locations and necessary measures have to be taken to avoid secondary pollution caused by digging and stockpiling of contaminated soil. If there is a need to transport polluted soil, the responsible unit shall report to local environmental protection bureaus at both departure and destination points in advance, with regard to transport time, mode of delivery, route, the amount of polluted soil, whereabouts, and final handling measures. During construction, the responsible unit shall set up signboards, make it known to the public as to project content, environmental impacts and precautions. Local environmental protection bureaus shall check and monitor the implementation of every measure. At the completion of the project, responsible unit shall entrust a third party to assess the result of treatment and remediation and the result shall be released to the public. A life-long responsibility system will be applied to soil pollution treatment, management and remediation. By the end of 2017, methods to determine liabilities and accountabilities shall be released. *(Leading agency: Ministry of Environmental Protection. Participating agencies:*

Ministry of Land and Resources, Ministry of Housing and Urban-Rural Development, Ministry of Agriculture).

(24) Supervise accomplishment of targets and implementation of tasks.

Environmental protection departments of at provincial level should regularly make progress reports on soil pollution treatment and remediation to the Ministry of Environmental Protection and the Ministry shall, together with relevant ministries and departments, check and supervise the process. Government authorities at provincial (autonomous regions and municipal) level shall entrust third parties to evaluate effectiveness of treatment and remediation and the result shall be released to the public. By the end of 2017, evaluation methods on effectiveness of soil pollution treatment, management and remediation shall be released. *(Leading agency: Ministry of Environmental Protection. Participating agencies: Ministry of Land and Resources, Ministry of Housing and Urban-Rural Development, Ministry of Agriculture).*

Section 8 Strengthening scientific research to promote development of environmental protection industry

(25) Strengthen research for prevention and control of soil pollution.

Basic research shall be conducted by integrating resources of universities, research institutions and enterprises, for soil environmental baseline, soil environmental carrying capacity, transformation and movement of pollutants, ecological effects of pollution, selection of low accumulating crops and plants for phytoremediation as well as the relationship between soil pollution, agricultural product quality and human health. Research on common key technologies shall be promoted on soil pollution diagnosis, risk management, pollution treatment, management and remediation. R & D on advanced appropriate equipment and highly effective and low cost functional materials (chemicals) shall be conducted, application of remote sensing technologies shall be strengthened, and a number of labs and scientific research bases for prevention and control of soil pollution shall be built. Various science and technology programs (e.g., special projects, research funds) should be integrated and optimized to support research for prevention and control of soil pollution. *(Leading agency: Ministry of Science and Technology. Participating agencies: National Development and Reform Commission, Ministry of Education, Ministry of Industry and Information Technology, Ministry of Land and Resources, Ministry of Environmental Protection, Ministry of Housing and Urban-Rural Development, Ministry of Agriculture, National Health and Family Planning Commission, State Forestry Administration, Chinese Academy of Sciences).*

(26) Strengthen the promotion of appropriate techniques.

A technical system has to be established and improved. 200 pilot projects to demonstrate appropriate techniques for treatment and remediation of polluted soil will be implemented by the end of 2020, to address typical contaminated agricultural land as well as sites selected based on the type, degree and regional representativeness of pollution. A series of replicable, low-cost and efficient appropriate technologies will be selected based on the demonstration results. *(Leading agencies: Ministry of Environmental Protection, Ministry of Finance. Participating agencies: Ministry of Science and Technology, Ministry of Land and Resources, Ministry of Housing and Urban-Rural Development, Ministry of Agriculture).*

Promote commercialization of research findings. The commercialization mechanism of research findings for prevention and control of soil pollution shall be improved and a number of platforms for commercialization of findings such as high-tech industrial development zones with the environmental industry as the leading industry should be established. A list of key technical equipment recommended by the State for soil pollution prevention and control shall be released by the end of 2017. International cooperation and exchanges shall be conducted to introduce advanced technologies and management experience including soil pollution risk identification, rapid testing of soil pollutants and isolation of soil and groundwater pollution. *(Leading agency: Ministry of Science and Technology. Participating agencies: National Development and Reform Commission, Ministry of Education, Ministry of Industry and Information Technology, Ministry of Land and Resources, Ministry of Environmental Protection, Ministry of Housing and Urban-Rural Development, Ministry of Agriculture, Chinese Academy of Science).*

(27) Promote the development of soil pollution treatment, management and remediation industries.

Open up the market of monitoring services. Social institutions are encouraged to participate in soil environmental monitoring and assessment. The establishment of a mature supply chain covering soil environmental survey, analysis and testing, risk assessment, project design and implementation of treatment and remediation will be accelerated through policy measures, to foster some leading enterprises and some vigorous small-medium enterprises. Promote the development of industrial demonstration bases in regions and areas with necessary conditions. Standardize the management of organizations and staff engaged in the sector of soil pollution treatment, management and remediation and set up sound regulatory supervision and oversight mechanisms. The list of organizations with low quality service, weak management and poor credibility will be made open to the public through the Credibility Information Disclosure System for enterprises. The role of Internet Plus in soil pollution treatment and remediation shall be strengthened to promote mass entrepreneurship and innovation. *(Leading agency: National Development and Reform Commission. Participating agencies: Ministry of Science and Technology, Ministry of Industry and Information Technology, Ministry of Environmental*

Protection, Ministry of Land and Resources, Ministry of Housing and Urban-Rural Development, Ministry of Agriculture, Ministry of Commerce, State Administration for Industry and Commerce).

Section 9 Strengthening the leading role of government to establish a regulatory framework for soil management

(28) Strengthen the leading role of government.

Following the principle that the central government is in overall coordination, provincial governments take major responsibilities and governments at the municipal and county level are in charge of implementing policies, a soil management regulatory framework has to be strengthened and each level of government should fulfill its responsibilities within its jurisdiction. Coordination mechanisms for prevention and control of soil pollution across administrative boundaries shall be explored and established. *(Leading agency: Ministry of Environmental Protection. Participating agencies: National Development and Reform Commission, Ministry of Science and Technology, Ministry of Industry and Information Technology, Ministry of Finance, Ministry of Land and Resources, Ministry of Housing and Urban-Rural Development, Ministry of Agriculture).*

Increase fiscal inputs. Central government and local governments shall increase financial support for prevention and control of soil pollution. The central government will integrate special funds for prevention and control of heavy metal pollution and establish a special fund on prevention and control of soil pollution, which can be used for soil surveying, monitoring and evaluation, supervision and management, treatment and remediation. Local governments should increase financial support through existing policies and funding channels and allocate more funds used for integrated agricultural development, high standard farmland development, irrigation and drainage systems, arable land protection and quality improvement, fertilizer recommendations based on soil testing to counties (cities, districts) where priority land for protection is concentrated. Those counties where the areas of priority land for protection are increased can be rewarded appropriately. Special funds shall be provided to enterprises engaged in heavy metal industries to upgrade their technologies and equipment. *(Leading agency: Ministry of Finance. Participating agencies: National Development and Reform Commission, Ministry of Industry and Information Technology, Ministry of Land and Resources, Ministry of Environmental Protection, Ministry of Water Resources, Ministry of Agriculture).*

Improve incentive policies. Local governments shall take effective measures to encourage enterprises to participate in soil pollution treatment and remediation. Incentive policies shall be made to support enterprises involved in organic fertilizer production, comprehensive use of waste agricultural films and collection and treatment of waste pesticide packages and containers. "Environmental Front-runners Program" shall be piloted in some industries like pesticides and chemical fertilizers. *(Leading agency: Ministry of Finance. Participating agencies: National Development and Reform Commission, Ministry of*

Industry and Information Technology, Ministry of Land and Resources, Ministry of Environmental Protection, Ministry of Housing and Urban-Rural Development, Ministry of Agriculture, State Administration of Taxation, All China Federation of Supply and Marketing Cooperatives).

Launch demonstration zones for integrated prevention and control of soil pollution. By the end of 2016, demonstration zones for integrated prevention and control of soil pollution shall be launched in Taizhou of Zhejiang Province, Huangshi of Hubei Province, Changde of Hunan Province, Shaoguan of Guangdong Province, Hechi of Guangxi Province and Tongren of Guizhou Province, with a focus on exploratory efforts on prevention of soil pollution at the source, risk control and management, treatment and remediation, and capacity building of regulatory supervision. By 2020, the soil quality in these demonstration zones will have substantially improved. The relevant local governments shall develop plans for demonstration zones, and submit them to the Ministry of Environmental Protection and the Ministry of Finance. Local governments in three regions, including Beijing-Tianjin-Hebei Region, Yangtze River Delta Region and Pearl River Delta Region, can launch demonstration zones as well, according to local conditions and requirements. *(Leading agencies: Ministry of Environmental Protection, Ministry of Finance. Participating agencies: National Development and Reform Commission, Ministry of Land and Resources, Ministry of Housing and Urban-Rural Development, Ministry of Agriculture, State Forestry Administration).*

(29) Give full play to the role of markets.

Use fiscal funds to mobilize and attract private funds into the field of prevention and control of soil pollution through Public-Private-Partnership (PPP) programs. Government procurement of services shall be increased to promote treatment and remediation of contaminated arable land as well as contaminated sites for which the government takes major responsibilities. Green finance shall be actively developed and policy- and development-oriented financial institutions shall play the guiding role in providing financial support for key projects of soil pollution prevention and control. Qualified enterprises engaged in soil remediation and restoration are encouraged to issue stocks. Explore the approach to promoting soil pollution control and remediation through issuing bonds, and conduct pilot projects in demonstration zones for integrated prevention and control of soil pollution. Compulsory liability insurance for environmental pollution shall be tested for enterprises in key industries. *(Leading agencies: National Development and Reform Commission and Ministry of Environmental Protection. Participating agencies: Ministry of Finance, The People's Bank of China, China Banking Regulatory Commission, China Securities Regulatory Commission, China Insurance Regulatory Commission).*

(30) Enhance public scrutiny

Disclosure of information shall be promoted. The status of national soil environment shall be released at an appropriate time, according to the results of soil quality surveys and monitoring. Government authorities at provincial (autonomous regions and municipal) level shall release the status of soil environment of each city (prefecture) regularly. Enterprises in key industries shall, according to regulations, release to the public the types of pollutants, ways of discharge, emission concentrations, total amounts as well as the installation and operation of facilities for pollution control and prevention. *(Leading agency: Ministry of Environmental Protection. Participating agencies: Ministry of Land and Resources, Ministry of Housing and Urban-Rural Development, Ministry of Agriculture).*

Public participation shall be guided. Whistleblowers should be rewarded and the public is encouraged to monitor violation of laws such as illegal discharge of wastewater and gas, dumping of waste and sludge and report to authorities through the hotline "12369", via letters, emails, government websites and WeChat. Volunteer inspectors can be hired by local governments, if condition allows, to participate in on-site law enforcement and soil pollution investigations. We will encourage major grain producers, family farms, farmers cooperatives and environmental NGOs to participate in prevention and control of soil pollution. *(Leading agency: Ministry of Environmental Protection. Participating agencies: Ministry of Land and Resources, Ministry of Housing and Urban-Rural Development, Ministry of Agriculture).*

Public interest litigation shall be promoted. Litigation is encouraged against violation activities such as polluting soil. In pilot areas where public interest litigation is tested, prosecutors may act as plaintiffs in environmental litigation cases of public interest. They can also file public interest lawsuits against administrative organs for illegal exercises of power or dereliction of duty causing damages to public and national interests. Local governments at each level should cooperate with judicial authorities and prosecutors on case handling and supervision. *(Leading agencies: The Supreme People's Procuratorate, The Supreme People's Court. Participating agencies: Ministry of Land and Resources, Ministry of Environmental Protection, Ministry of Housing and Urban-Rural Development, Ministry of Water Resources, Ministry of Agriculture, State Forestry Administration).*

(31) Conduct publicity and education.

Publicity and education work plans on protection of soil environment shall be elaborated. Posters, videos and popular science publications shall be developed and tools such as the internet and digital projection shall be used, in combination with campaigns on World Earth Day, World Environment Day, World Soil Day, World Food Day and National Soil Day, to disseminate knowledge on soil pollution prevention and control, advocate and help the public understand laws, regulations and policies, create an enabling environment for soil protection and promote green development and lifestyles. Publicity

and education on soil protection should be integrated into environmental campaigns and training work plans of government organizations, schools, factories, neighborhoods and rural communities. Institutions of higher education with adequate resources are encouraged to provide specialized courses on soil environment. *(Leading agency: Ministry of Environmental Protection. Participating agencies: Department of Publicity of CPC Central Committee, Ministry of Education, Ministry of Land and Resources, Ministry of Housing and Urban-Rural Development, Ministry of Agriculture, State Administration of Press, Publication, Radio, Film and Television, Office of the Central Leading Group for Cyberspace Affairs, State Administration of Grain, China Association for Science and Technology).*

Section 10 Strengthening performance assessment and administrative accountability system.

(32) Clarify the responsibility of local governments.

Local governments at different levels are the main implementation body of this Action Plan. Work plans on soil pollution prevention and control have to be developed and released by the end of 2016 to identify major targets and tasks. Organization and leadership shall be strengthened, policies should be improved, investments should be increased, financing systems should be innovated and regulatory supervision and oversight should be enhanced to ensure successful implementation. Work plans of each province (autonomous region, municipality) shall be filed at the State Council. *(Leading agency: Ministry of Environmental Protection. Participating agencies: National Development and Reform Commission, Ministry of Finance, Ministry of Land and Resources, Ministry of Housing and Urban-Rural Development, Ministry of Agriculture).*

(33) Strengthen inter-departmental coordination.

A national coordinating mechanism for soil pollution prevention and control shall be established to discuss and solve key issues regularly. All relevant departments shall work together closely to address soil pollution prevention and control according to division of responsibilities. The Ministry of Environmental Protection shall be responsible for overall coordination and supervision, and submit progress reports to the State Council by the end of February every year. *(Leading agency: Ministry of Environmental Protection. Participating agencies: National Development and Reform Commission, Ministry of Science and Technology, Ministry of Industry and Information Technology, Ministry of Finance, Ministry of Land and Resources, Ministry of Housing and Urban-Rural Development, Ministry of Water Resources, Ministry of Agriculture, State Forestry Administration).*

(34) Fulfill the responsibility of enterprises.

Relevant enterprises shall strengthen internal management, integrate prevention and control of soil pollution into their environmental risk management system, strictly construct and operate pollution

treatment facilities according to law, and ensure that emissions of key pollutants meet standards. Enterprises shall take legal responsibilities for assessment of damages, treatment and remediation in case of soil pollution. Mechanisms of sectoral self-discipline shall be established for enterprises in the sector of soil pollution treatment and remediation step by step, and state owned enterprises, especially centrally administered enterprises, should take a leading role. *(Leading agency: Ministry of Environmental Protection. Participating agencies: Ministry of Industry and Information Technology, Stated-owned Assets Supervision and Administration Commission of the State Council).*

(35) Strengthen performance evaluation.

A target responsibility system will be applied. By the end of 2016, the State Council and each provincial (autonomous region, municipal) government will sign responsibility statements on soil pollution prevention and control. Progress review in key areas will be carried out on a yearly basis and the overall evaluation on implementation of this Action Plan will be carried out in 2020. The evaluation results will be used as an important basis for overall performance assessment of government leaders and for auditing outgoing officials' management of natural resource assets. *(Leading agency: Ministry of Environmental Protection. Participating agencies: Organization Department of CPC Central Committee, National Audit Office).*

The evaluation results will also be used as an important basis for allocation of special funds for prevention and control of soil pollution. *(Leading agency: Ministry of Finance. Participating agency: Ministry of Environmental Protection).*

Those provinces (autonomous regions, municipality) who obtain poor evaluation results or fail to pass evaluation, have to make proposals for improvement within a prescribed timeframe, and EIA approval of construction projects will be restricted in those provinces before improvement is completed. Responsible persons in the provincial government shall be questioned interviewed if improvement is not satisfactory. For areas with prominent soil issues, dramatic decline in regional soil quality, ineffective prevention and control measures or strong public concern, responsible persons in the city and provincial governments shall be questioned. The act of dereliction of duty or cheating should be subject to admonition, public apology, and disciplinary punishment by the Party. Those who break criminal laws should be held accountable according to the law. Life-long accountability should apply in the event of the wrongdoers' job transfer, promotion and retirement. *(Leading agency: Ministry of Environmental Protection. Participating agencies: Organization Department of CPC Central Committee, Ministry of Supervision)*

China is in a critical stage towards building a moderately prosperous society in an all-round way and Chinese people have high expectations on the improvement of environmental quality. Prevention and

control of soil pollution is an arduous task. Local governments and relevant departments have to be fully aware of the situation and be determined to implement and strengthen pollution control and environmental protection, to achieve national goals for prevention and control of soil pollution by the scheduled time and to ensure improved environmental quality and stable ecosystems, in order to make contributions to realization of Two Centenary Goals³ and the Chinese Dream of Great Rejuvenation.

³ Two Centenary Goals: to finish building a moderately prosperous society in all aspects by the time the Communist Party of China celebrates its centenary in 2021; and turn China into a modern socialist country that is prosperous, strong, democratic, culturally advanced and harmonious by the time the People's Republic of China celebrates its centenary in 2049.

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