

# Notice of the State Council on Issuing the Action Plan for Prevention and Control of Water Pollution

April 16<sup>th</sup>, 2015

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People's governments of provinces, autonomous regions and municipalities directly under the Central Government, and ministries, commissions and departments directly under the State Council:

Action Plan for Prevention and Control of Water Pollution is now printed and distributed to you for serious implementation.

The State Council

April 2<sup>nd</sup>, 2015

(For Public Release)

## Action Plan for Prevention and Control of Water Pollution

Water environment protection concerns vital interests of the masses, construction of a well-off society and realizing the China Dream of great rejuvenation of the Chinese nation. Currently, some areas in our country suffer poor water environment quality, heavily damaged water ecology, a large number of environmental risks and other prominent problems, which impact and damage people's health and impede sustainable economic and social development. The Action Plan is hereby formulated to practically strengthen prevention and control of water pollution and guarantee national water safety.

General requirements: to fully implement the spirit of the 18<sup>th</sup> National Congress of the Communist Party of China, the Second, Third and Fourth Plenary Sessions of the 18<sup>th</sup> CPC Central Committee, vigorously promote ecological civilization construction, and under the principle of "water saving first, spatial balance, systemic treatment and striving from two aspects" and following the policy of "being safe, clean and healthy" with improvement of water environment quality at its core, reinforce source control, give overall consideration to land and water, rivers and seas, carry out scientific control by basin, area and stage for rivers, lakes and seas, and systematically promote water pollution control, water ecologic protection and water resources management. To insist on collaboration between the government and market, emphasize on reform and innovation; insist on overall and legal implementation and pursue the strictest environmental protection system; insist on fulfillment of respective responsibilities and conduct strict assessment and accountability; insist on participation by all people, promote that everybody is responsible for water saving and clean water, form a new mechanism for water pollution prevention and control featured by "led by governments, implemented by enterprises, driven by market and participated by the public" to achieve multi-win of environmental, economic and social benefits and strive for building a beautiful China with "everlasting blue sky, green mountains and clear water".

Objectives: by 2020, water environment quality nationwide will be periodically improved, with heavily polluted water bodies dramatically reduced, drinking water safety guarantee continuously improved, groundwater overexploitation strictly controlled, groundwater pollution aggravation preliminarily curbed, environmental quality in offshore areas getting better, and water ecological environment in Beijing-Tianjin-Hebei Region, Yangtze River Delta, Pearl River Delta and other areas somewhat improved. By 2030, it is expected that overall water environment quality will be better and water ecosystem functions will preliminarily recover. By the middle of this century, overall ecological environment quality will be improved and virtuous cycling of ecosystem will be achieved.

Key indices: by 2020, the overall proportion of water quality of seven basins, including Yangtze River basin, Yellow River basin, Pearl River basin, Songhua River basin, Huaihe River basin, Haihe River basin and Liao River basin being above average (reaching or exceeding Class III) will be 70% or above, quantity of black and odorous water bodies in built-up areas in cities at prefecture level and above will be controlled within 10%, the overall proportion of centralized drinking water source quality in cities at prefecture level and above reaching or exceeding Class III will be larger than 93%, the proportion of extremely poor groundwater quality nationwide will be controlled around 15%, and the proportion of above average (Class I and II) water quality in offshore areas will reach about 70%. The proportion of unusable (below Class V) water sections in Beijing-Tianjin-Hebei Region will be about 15% lower, and efforts should be made to eliminate unusable water bodies in the Yangtze River Delta and Pearl River Delta.

By 2030, the overall proportion of water quality in seven key basins nationwide reaching above average will reach 75% or above, with black and odorous water bodies in urban built-up areas generally eliminated and the proportion of urban centralized drinking water source quality reaching or exceeding Class III being about 95% generally.

### I. Overall Control of Pollutant Discharge

(1) Paying special attention to prevention and control of industrial pollution. To close down "ten categories of small" enterprises. To fully screen small industrial enterprises with low equipped level and poor environmental protection facilities. Before the end of 2016, production projects which heavily pollute water environment, such as small paper mills, tanneries, printing and dyeing mills, dyestuff plants, coking plants, sulfur plants, arsenic plants, refineries, plating factories, pesticide factories, etc., should be banned in accordance with requirements in laws and regulations for water pollution prevention and control. (It is required that these be led by Ministry of Environmental Protection, participated by Ministry of Industry and Information Technology, Ministry of Land and Resources, National

Energy Administration, etc., and implemented by local people's governments at different levels. Local people's governments at different levels should be responsible for implementation hereinafter, which will not be repeated)

Specially rectifying ten major industries. To formulate special rectification plans for paper-making, coking, nitrogenous fertilizer, nonferrous metals, printing and dyeing, farm and sideline food processing, APIs manufacturing, tanning, pesticide, electroplating industries, and carry out cleaning rectification. To adopt equivalent or reducing replacement of key pollutant discharge in newly built, rebuilt and expanded construction projects in the above-mentioned industries. Before the end of 2017, papermaking industry should strive to achieve elemental chlorine free (ECF) bleaching of paper pulp or adopt other low-pollution pulping technologies; iron and steel enterprises should achieve technical reform of coke dry quenching for coking; nitrogenous fertilizer industry should achieve technical reform of process condensate hydrolysis for urea production; printing and dyeing industry should achieve low-drain dyeing and finishing process; pharmaceutical (antibiotics and vitamins) industry should achieve technical reform of green enzymatic production; while tanning industry should achieve technical reform of chromium reduction and closed recycling. (Led by Ministry of Environmental Protection and participated by Ministry of Industry and Information Technology, etc.)

Treating water pollution in industrial agglomeration areas on a centralized basis. To strengthen pollution control in industrial agglomeration areas, including economic and technological development zones, high-tech industrial development zones and export processing zones. Industrial waste water from these areas must be pretreated to meet centralized processing requirements and then be allowed into sewage centralized processing facilities. Newly built and upgraded industrial agglomeration areas should be equipped with planning and construction of pollution control facilities such as centralized sewage and garbage treatment. Before the end of 2017, industrial agglomeration areas should be equipped with centralized sewage treatment facilities and fitted with automatic online monitoring devices, with one-year early completion in Beijing-Tianjin-Hebei Region, the Yangtze River Delta, Pearl River Delta, etc.; if not, it is required to suspend examination and approval of construction projects resulting in increase of water pollutant discharge in these areas and revoke the access to these industrial parks pursuant to relevant provisions. (Led by Ministry of Environmental Protection and participated by Ministry of Science and Technology, Ministry of Industry and Information Technology, Ministry of Commerce, etc.)

(2) Strengthening control of urban domestic pollution. To accelerate construction and alteration of urban sewage treatment facilities. Existing urban sewage treatment facilities should be altered according to local conditions and reach corresponding discharge standard or recycling requirement before the end of 2020. Urban sewage treatment facilities in sensitive areas (key lakes and reservoirs and catchment in offshore areas) should generally reach Class I A discharge standard before the end of 2017. In cities where water quality in built-up areas fails to reach Class IV standard for surface water, sewage treatment facilities in newly built towns should be subject to Class I A discharge standard. According to national new urbanization planning requirements, by 2020, all counties and key towns nationwide should be capable of sewage collection and treatment, with sewage treatment rate in counties and cities reaching about 85% and 95% respectively. Areas such as Beijing-Tianjin-Hebei Region, the Yangtze River Delta and Pearl River Delta should complete this one year earlier. (Led by Ministry of Housing and Urban-Rural Development and participated by National Development and Reform Commission, Ministry of Environmental Protection, etc.)

Fully reinforcing supporting pipe network construction. To strengthen sewage cut-off and collection in urban villages, old urban areas and semi-urban areas. Rainfall and sewage shunting should be accelerated for existing combined sewer systems, with measures such as cut-off, regulation and storage, and treatment taken in case of any difficulty in shunting. Supporting pipe network for newly built sewage treatment facilities should be designed, constructed and operated in a synchronized manner. Other than drought areas, rainfall and sewage shunting should be implemented during construction of new urban districts, with preliminary collection, treatment and resourceful utilization of rainfall promoted in conditional areas. By 2017, full collection and treatment of sewage should be basically achieved in built-up areas in municipalities directly under the central government, provincial capitals and municipalities with independent planning status, which should also be basically achieved in built-up areas in cities at prefecture level before the end of 2020. (Led by Ministry of Housing and Urban-Rural Development and participated by National Development and Reform Commission, Ministry of Environmental Protection, etc.)

Promoting sludge treatment and disposal. Stable, harmless and resourceful treatment should be carried out for sludge produced by sewage treatment facilities, and sludge not in compliance with relevant standard is not allowed into cultivated land. Illegal sludge sites should be banned. Existing sludge treatment facilities should be basically refitted to relevant standard before the end of 2017, with harmless treatment rate of sludge reaching 90% above by end of 2020 in cities at prefecture level and above. (Led by Ministry of Housing and Urban-Rural Development and participated by National Development and Reform Commission, Ministry of Industry and Information Technology, Ministry of Environmental Protection, Ministry of Agriculture, etc.)

(3) Boosting prevention and control of agricultural and rural pollution. To prevent and control livestock and poultry farming pollution. Livestock and poultry farming areas should be scientifically divided; before the end of 2017, livestock and poultry farms (areas) and households specialized in breeding should be closed down or relocated by law in banned areas, with one-year early completion in Beijing-Tianjin-Hebei Region, the Yangtze River Delta, Pearl River Delta, etc. Existing large-scale livestock and poultry farms (areas) should be equipped with fecal sewage storing, treating and utilizing facilities according to pollution prevention and control needs. Dense free-range areas should adopt collection, by households, and centralized treatment and utilization of livestock excrements and sewage. Since 2016, rainfall and sewage shunting and resourceful utilization of fecal sewage should be implemented in newly built, rebuilt and expanded large-scale livestock and poultry farms (areas). (Led by Ministry of Agriculture and participated by Ministry of Environmental Protection)

Controlling agricultural non-point source pollution. To formulate and implement overall prevention and control plans for national agricultural non-point source pollution. To pilot popularize experience in subsidies for use of pesticides with low toxicity and residual, and carry out green and unified prevention and control of crop disease and insect pests. To put into practice soil testing and fertilizer recommendation and popularize precise fertilizer technique, machines and tools. To perfect standard specifications such as construction of high-standard farmland and land development and consolidation, and clarify environmental protection requirements; newly constructed high-standard farmland should reach relevant environmental protection requirements. Sensitive areas and large and

medium-sized irrigated areas should be equipped with aquatic plant communities, grilles and permeable dikes as well as facilities such as ecological ditches, sewage purification ponds, surface runoff collecting and storing pools by using existing ditches, ponds and pits, so as to purify farmland drainage and surface runoff. By 2020, coverage of soil testing and fertilizer recommendation technology should reach more than 90%, with fertilizer utilization rate increasing to above 40% and coverage of united prevention and control of crop diseases and insect pests reaching above 40%; Areas such as Beijing-Tianjin-Hebei Region, the Yangtze River Delta and Pearl River Delta should complete this one year earlier. (Led by Ministry of Agriculture and participated by National Development and Reform Commission, Ministry of Industry and Information Technology, Ministry of Land and Resources, Ministry of Environmental Protection, Ministry of Water Resources, General Administration of Quality Supervision, Inspection and Quarantine, etc.)

Adjusting planting structure and layout. To try out land returning and water reduction in water-deficient areas. In areas where groundwater is vulnerable to pollution, priority should be given to crops requiring less fertilizer or pesticide and with prominent environmental benefits. In Gansu, Sinkiang (including Xinjiang Production and Construction Corps), Hebei, Shandong and Henan with serious surface water overexploitation and groundwater overexploitation as well as large agricultural water consumption, it is required to properly reduce area for crops requiring large water consumption and replant drought-tolerant crops and economic forests; before the end of 2018, comprehensive treatment should be implemented for irrigated areas covering an area of 33 million mu, with water reduction by more than 3.7 billion m<sup>3</sup>. (Led by Ministry of Agriculture and Ministry of Water Resources, and participated by National Development and Reform Commission, Ministry of Land and Resources, etc.)

Accelerating comprehensive improvement of rural environment. To implement united planning, construction and management for rural sewage treatment in the unit of county-level administrative regions; and to promote extension of urban sewage treatment facilities and services to rural areas if conditions permit. To deepen the policy of “encouraging sewage treatment by incentives”, carry out rural cleaning engineering and channel desilting and dredging, and advance contiguous treatment of rural environment. By 2020, there will be 130,000 more administrative villages completing comprehensive environmental improvement. (Led by Ministry of Environmental Protection, Ministry of Housing and Urban-Rural Development, Ministry of Water Resources, Ministry of Agriculture, etc.)

(4) Strengthening control over ship and port pollution. To actively deal with ship pollution. To enforce abandonment of ships operating beyond their service life according to the law. Revise environmental protection standards pertinent to ships and facilities and equipment thereon by classes and grades. Coastal ships put into use since 2018 and inland ships put into use since 2021 should be subject to new standards; other ships should be refitted before the end of 2020 or abandoned within a specific deadline if they still fail to reach relevant standards after refitted. International ships traveling in waters in our country should undergo ballast water exchange or be fitted with ballast water inactivation system. To standardize ship recycling behaviors and forbid ship disassembling on beach. (Led by Ministry of Transport and participated by Ministry of Industry and Information Technology, Ministry of Environmental Protection, Ministry of Agriculture, General Administration of Quality Supervision, Inspection and Quarantine, etc.)

Enhancing ability to prevent and control port and terminal pollution. To formulate and implement pollution prevent and control plans for ports, terminals and loading and unloading stations nationwide. To accelerate construction of garbage receiving, transferring and disposing facilities, improve the ability to receive and dispose oily sewage, washing water for chemicals tanks and so on as well as emergency capability of pollution accidents. Coastal and inland ports, terminals, loading and unloading stations and ship repair yards should reach construction requirements before the end of 2017 and 2020 respectively. Operators of ports, terminals, loading and unloading stations should formulate emergency plans for prevention and control of water pollution by ships and relevant activities. (Led by Ministry of Transport, participated by Ministry of Industry and Information Technology, Ministry of Housing and Urban-Rural Development, Ministry of Agriculture, etc.)

## **II. Promotion of transformation and updating of economic structure**

(5) Adjusting industrial structure. To eliminate outdated industrial capacity according to the law. From 2015 on, local authorities should formulate and implement outdated capacity elimination plans in the light of guidance category for elimination of outdated production process equipment & products and industrial restructuring guidance category for some industries as well as pollutant discharge standards for relevant industries, in combination of water quality improvement requirements and industrial development, and submit them to Ministry of Industry and Information Technology and Ministry of Environmental Protection for future reference. In areas where such elimination is not completed, examination and approval of new projects in relevant industries should be suspended. (Led by Ministry of Industry and Information Technology, and participated by National Development and Reform Commission, Ministry of Environmental Protection, etc.)

Making stricter environmental permission standard. To clarify regional environmental permission conditions, detail function zoning and implement differentiated environmental permission policies according to basin water quality target and main functional area planning requirements. To establish a monitoring and evaluation system for bearing capacity of water resources and environment, implement bearing capacity monitoring and early warning or water pollutant reduction plan in areas beyond bearing capacity, and accelerate adjustment of development planning and industrial structure. By 2020, status evaluation for bearing capacity of water resources and environment in cities and counties should be completed. (Led by Ministry of Environmental Protection and participated by Ministry of Housing and Urban-Rural Development, Ministry of Water Resources, State Oceanic Administration, etc.)

(6) Optimizing spatial layout. To reasonably determine development layout, structure and scale. Full consideration should be given to bearing capacity of water resources and environment, basing city, land, population and production on water resources. Major projects should be in principle arranged in optimizing and key development zones, which should conform to urban and rural planning as well as overall planning for land utilization. To encourage development of water-saving, efficient modern agriculture, low-water consumption high and new technology industry and eco-friendly tourism, exercise strict control over development of industries with large water consumption and heavy pollution in water-deficient areas, heavily water-polluted areas and sensitive areas, and implement reducing replacement of main pollutant discharge for newly built, rebuilt and expanded construction projects in key industries. Along the bank of main streams in seven major basins, strict control should be exercised over environmental risks of projects with respect to oil refinery, manufacturing of chemical raw materials and chemical products, pharmaceutical manufacturing, chemical fiber production, nonferrous

metal smelting, textile printing and dyeing, etc.; production equipment and facilities for storage of dangerous chemicals should be reasonably arranged. (Led by National Development and Reform Commission and Ministry of Industry and Information Technology, and participated by Ministry of Land and Resources, Ministry of Environmental Protection, Ministry of Housing and Urban-Rural Development, Ministry of Water Resources, etc.)

Promoting exit of polluting enterprises. Existing heavily polluting enterprises in iron and steel, nonferrous metals, papermaking, printing and dyeing, APIs manufacturing, chemical industry, etc. within urban built-up areas should be orderly relocated and transformed or closed down by law. (Led by Ministry of Industry and Information Technology, and participated by Ministry of Environmental Protection, etc.)

Actively protecting ecological space. To exercise strict management of blue lines in urban planning and retain a certain proportion of water area within urban planning areas. New projects should not break the rule to occupy water area. Strict control should be exercised over usage of coastlines; sufficient space for management and protection of rivers, lakes and coasts should remain pursuant to relevant laws, regulations and technical standards in case of land exploitation and utilization, with illegal occupation eliminated within a specific deadline. (Led by Ministry of Land and Resources and Ministry of Housing and Urban-Rural Development, and participated by Ministry of Environmental Protection, Ministry of Water Resources, State Oceanic Administration, etc.)

(7) Advancing cyclic development. To strengthen recycling use of industrial water. To advance comprehensive utilization of mine water, with priority given in use of mine water as supplementary water in coal mining areas and water for production and ecological use in surrounding areas, and reinforce recycling use of coal washing sewage. To encourage enterprises engaged in iron and steel, textile printing and dyeing, papermaking, petroleum and petrochemistry, chemical industry, tanning, etc. with large water consumption to perform advanced waste treatment for recycling. (Led by National Development and Reform Commission and Ministry of Industry and Information Technology, and participated by Ministry of Water Resources, National Energy Administration, etc.)

Promoting utilization of reclaimed water. To perfect reclaimed water reusing facilities mainly in cities suffering water shortage and heavy water pollution, and give priority in use of reclaimed water for industrial production, urban greening, road sweeping, vehicle washing, building construction and ecological landscape. To advance sewage treatment and utilization in expressway service areas. For projects with respect to iron and steel, thermal power, chemical industry, pulping and papermaking, printing and dyeing which fail to make full use of reclaimed water if they could, new water permits should not be given. From 2018 on, newly built public buildings with single building area exceeding 20000m<sup>2</sup>, newly built concentrated security housing covering an area of more than 20000m<sup>2</sup>, 50000m<sup>2</sup> and 100000m<sup>2</sup> in Beijing, Tianjin and Hebei respectively should be equipped with immediate water facilities for buildings. Actively advance installation of immediate water facilities in other newly built housing. By 2020, utilization rate of reclaimed water in water-deficient cities should reach above 20%, with Beijing-Tianjin-Hebei Region reaching above 30%. (Led by Ministry of Housing and Urban-Rural Development, and participated by National Development and Reform Commission, Ministry of Industry and Information Technology, Ministry of Environmental Protection, Ministry of Transport, Ministry of Water Resources, etc.)

Promoting seawater utilization. To implement direct use of seawater as industrial water, e.g., circulating cooling water, in power, chemical, petrochemical and other industrials in coastal areas. To accelerate advancing use of desalted seawater as a supplementary source of domestic water in cities where possible. (Led by National Development and Reform Commission and participated by Ministry of Industry and Information Technology, Ministry of Housing and Urban-Rural Development, Ministry of Water Resources, State Oceanic Administration, etc.)

### **III. Focus on water resources saving and conservation**

(8) Controlling total water consumption. To perform strictest management of water resources. To establish a sound index system for total water consumption control. To strengthen demonstration of water resources layout in relevant planning and project construction, formulation of national economic and social development planning and urban overall planning as well as layout of major construction projects, with full consideration given to conditions of local water resources and flood control requirements. For areas where water consumption has reached or exceeded the control index, new water permits should be suspended. To implement planned water use management for units included in water permit management and other major water consumers. Water consumption for newly built, rebuilt and expanded projects should lead the industry, with water saving facilities designed, constructed and operating in conjunction with main work. To establish a directory of units under key monitoring in water consumption. By 2020, total water consumption nationwide should be controlled below 670 billion m<sup>3</sup>. (Led by Ministry of Water Resources and participated by National Development and Reform Commission, Ministry of Industry and Information Technology, Ministry of Housing and Urban-Rural Development, Ministry of Agriculture, etc.)

Strictly controlling groundwater overexploitation. Before exploitation and utilization of groundwater in areas susceptible to geological disasters such as surface subsidence, ground fracture and karst collapse, risk assessment of geological disasters should be done. Strict control should be exercised over exploitation of deep confined water, geothermal water and mineral water development should be subject to strict water and mining permits. To standardize motor-pumped well construction and management according to the law, screen and register completed motor-pumped wells and close down unapproved self-provided wells and those falling within coverage of public water supply network. To formulate groundwater overexploitation prevention plans for areas suffering surface subsidence, seawater intrusion, etc. To carry out comprehensive treatment of groundwater overexploitation areas in North China and prevent industrial and agricultural production as well as service industry in overexploitation areas from new consumption of groundwater. Agricultural infrastructure projects in Beijing-Tianjin-Hebei Region, such as land reclamation, agricultural development and poverty alleviation, should not be conditioned by well digging. Before the end of 2017, it is required to complete demarcation of groundwater exploitation forbidden areas, limited areas and surface subsidence control areas, with one-year early completion in regions such as Beijing-Tianjin-Hebei Region, the Yangtze River Delta and Pearl River Delta. (Led by Ministry of Water Resources and Ministry of Land and Resources, participated by National Development and Reform Commission, Ministry of Industry and Information Technology, Ministry of Finance, Ministry of Housing and Urban-Rural Development, Ministry of Agriculture, etc.)

(9) Increasing water use efficiency. To establish water use efficiency assessment systems such as index of water consumption per 10000 Yuan GDP, and include fulfillment of water saving targets into performance evaluation for local governments. To include unconventional sources of water such as reclaimed water, rainwater and brackish water into uniform allocation of water resources. By 2020, water consumption per 10000 Yuan GDP and water consumption per 10000 Yuan industrial added value decrease by more than 35% and 30% respectively compared with 2013. (Led by Ministry of Water Resources and participated by National Development and Reform Commission, Ministry of Industry and Information Technology, Ministry of Housing and Urban-Rural Development, etc.)

Paying attention to industrial water saving. To establish a list of technologies, processes, products and equipment for water use encouraged and abandoned by the state and perfect water quota standards for industries with large water consumption. To carry out water saving diagnosis, water balance test and water use efficiency assessment, and exercise strict control over water quota. By 2020, power, iron and steel, textile, papermaking, petroleum and petrochemical, chemical, food fermentation and other water-intensive industries should reach advanced quota standard. (Led by Ministry of Industry and Information Technology and Ministry of Water Resources, and participated by National Development and Reform Commission, Ministry of Housing and Urban-Rural Development, General Administration of Quality Supervision, Inspection and Quarantine, etc.)

Strengthening water saving in cities and towns. It is prohibited to produce or sell products or equipment not in compliance with water saving standards. Public buildings must be equipped with water saving devices, where water nozzles, closet tanks and other domestic water devices not meet relevant standards should be abandoned within a deadline. To encourage households to select and use water saving devices. To replace and refit water supply networks operating for over 50 years and made of outdated materials. By 2017, leak rate of public water supply networks nationwide should be controlled within 12%; by 2020, this should be controlled within 10%. To actively pursue low-impact development and construction model and construct rainwater collecting and utilizing facilities integrating blockage, seepage, storage, use and drainage. Permeable area of hardened ground in new urban areas should reach above 40%. By 2020, water-deficient cities at prefecture level and above should all reach national standard requirements for water saving cities, with one-year early completion in regions such as Beijing-Tianjin-Hebei Region, the Yangtze River Delta and Pearl River Delta. (Led by Ministry of Housing and Urban-Rural Development and participated by National Development and Reform Commission, Ministry of Industry and Information Technology, Ministry of Water Resources, General Administration of Quality Supervision, Inspection and Quarantine, etc.)

Developing agricultural water saving. To popularize water-saving irrigation techniques such as channel seepage control, pipeline water delivery, sprinkling irrigation and micro irrigation, and improve irrigation water measuring facilities. To advance large-scale efficient water-saving irrigation and popularize water saving and drought resistance technology for crops in the Northeast, Northwest, Yellow River area, Huaihe River area, etc. By 2020, rehabilitation and water saving reform should be basically completed in large irrigated areas and key medium-sized irrigated areas, with area of water saving irrigation engineering nationwide reaching about 700 million mu and effective utilization coefficient of farmland irrigation water reaching 0.55 or above. (Led by Ministry of Water Resources and Ministry of Agriculture, participated by National Development and Reform Commission, Ministry of Finance, etc.)

(10) Scientifically conserving water resources. To perfect water resources conservation assessment system. To strengthen supervision and management of water function zones and make strict assessment of assimilative capacity of water bodies. (Led by Ministry of Water Resources and participated by National Development and Reform Commission, Ministry of Environmental Protection, etc.)

Strengthening water dispatch and management in rivers, lakes and reservoirs. To perfect water dispatch plans. To take measures such as gate-dam combined dispatch and ecological water compensation, make reasonable arrangements for gate-dam discharging capacity and time frame, maintain basic ecological water demand on rivers and lakes, and emphasize on guarantee of ecological basic flow in dry seasons. To intensify construction of water conservancy projects and give full play to the role of water conservancy projects in water quality improvement. (Led by Ministry of Water Resources and participated by Ministry of Environmental Protection)

Scientifically measuring ecological flow. To set up pilot projects in the Yellow River basin, Huaihe River basin, etc. and measure ecological flow (water level) by stages and batches to provide important reference for basin water dispatch. (Led by Ministry of Water Resources and participated by Ministry of Environmental Protection)

#### **IV. Strengthening of Sci-Tech Support**

(11) Disseminating and demonstrating appropriate technologies. To accelerate the popularization and application of technical results, particularly appropriate technologies for drinking water purification, water conservation, water pollution control and recycling utilization, urban rainwater collection and utilization, safe reuse of reclaimed water, water ecological restoration, and prevention and control of pollution from livestock and poultry farming. To improve the evaluation system of environmental protection, reinforce the construction of the platform to share national environmental technology achievements, and promote technical results sharing and transformation. To give full play to the role of enterprises as technological innovation subjects, drive the establishment of a technology innovation strategy alliance among key water treatment enterprises, scientific research institutions and higher education institutions, and demonstrate and spread state-of-art technologies for emission reduction by source control as well as for cleaner production. (Led by Ministry of Science and Technology and participated by National Development and Reform Commission, Ministry of Industry and Information Technology, Ministry of Environmental Protection, Ministry of Housing and Urban-Rural Development, Ministry of Water Resources, Ministry of Agriculture and State Oceanic Administration).

(12) Making great efforts to develop prospective technologies. To integrate sci-tech resources, and through national plan for science and technology (special projects and funds), speed up research and development of technologies used for advanced waste treatment for key industries, low-cost and high-standard treatment of domestic sewage, sea water desalination and industrial high salinity sewage desalination, treatment of trace toxic pollutants in drinking water, groundwater pollution remediation, dangerous chemical accidents and emergency disposal of sea oil spill. To make researches on impacts of organic matters, heavy metals and other water environmental benchmark as well as water pollution on human health, new pollutant risk evaluation, water environmental damage evaluation, sources of drinking water supplemented by high-quality reclaimed water. To reinforce international exchange and cooperation on water conservation, prevention and control of agricultural non-point source pollution, monitoring and early warning of water environment, and

water treatment process technology and equipment. (Led by Ministry of Science and Technology, and participated by 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 Water Resources, Ministry of Agriculture and National Health and Family Planning Commission)

(13) Striving to develop environmental protection industry. To regulate environmental industry market. To thoroughly review laws, regulations and rules on environmental protection market access and operational action standardization, and put to an end the regulations and practices obstructing the formation of national unified environmental protection market and fair competition. To improve methods and technical standards for managing bidding and tendering in design, construction and operation for environmental facilities. To boost the development of advanced water conservation, pollution treatment, remediation technology and equipment industrialization. (Led by National Development and Reform Commission, and participated by Ministry of Science and Technology, Ministry of Industry and Information Technology, Ministry of Finance, Ministry of Environmental Protection, Ministry of Housing and Urban-Rural Development, Ministry of Water Resources and State Oceanic Administration)

Speeding up environmental protection service industry. To make clear responsibilities and duties of supervision departments, pollution discharge enterprises and environmental protection enterprises, and perfect risk sharing and performance guarantee. To encourage the development of, including, system design, complete equipment, engineering construction, commissioning and operation, general contracting model of environmental services used for maintenance and management, and governmental and social capital cooperation model. Focusing on sewage treatment, refuse disposal and industrial parks, to promote pollution treatment by third party. (Led by National Development and Reform Commission and Ministry of Finance, and participated by Ministry of Science and Technology, Ministry of Industry and Information Technology, Ministry of Environmental Protection and Ministry of Housing and Urban-Rural Development)

#### **V. Give full play to the function of market mechanism**

(14) Straightening out price taxes. To speed up water price reform. Cities at county level and above should fully implement the system of residential ladder water price before the end of 2015, and qualified municipal towns should also promote such system in an active way. By the end of 2020, to carry out full implementation of progressive price-adding system of water consumption in excess of quota and planned amount for non-residential water consumption. To deepen comprehensive reform on agricultural water price. (Led by National Development and Reform Commission, and participated by Ministry of Finance, Ministry of Housing and Urban-Rural Development, Ministry of Water Resources, and Ministry of Agriculture, etc.)

Improving charge policies. To amend management regulations on collection of municipal sewage treatment charges, emission charges and water resource charges, raise collection standards in a reasonable way, and collect all due charges. Standard charges for municipal sewage treatment should not be lower than costs for sewage treatment and sludge treatment. Standard charges for groundwater resources should be higher than that for surface water, and that for groundwater resources in over-exploited areas should be higher than that for groundwater resources in non-over-exploited areas. (Led by National Development and Reform Commission and Ministry of Finance, and participated by Ministry of Environmental Protection, Ministry of Housing and Urban-Rural Development, and Ministry of Water Resources, etc.)

Improving taxation policies. To carry out taxation preference policies with respect to environmental protection, energy and water conservation, and integrated utilization of resources in accordance with laws. Tariff should be exempted in imported key components that are necessary for the manufacturing state-supported large environmental protection equipment by domestic enterprise. To accelerate legislation on environmental protection tax and reform on resource taxes and fees. To include energy-intensive and high-pollution products into the collection scope of consumption tax. (Led by Ministry of Finance and State Administration of Taxation, and participated by National Development and Reform Commission, Ministry of Industry and Information Technology, Ministry of Commerce, General Administration of Customs, and General Administration of Quality Supervision, Inspection and Quarantine, etc.)

(15) Promoting diversified financing. To guide the investment of social capital. To push forward the establishment of financing guarantee funds and the development of environmental protection equipment financing and leasing services. To spread pledge financing guarantee by equity, income rights, franchise rights and emission permits. To encourage the investment of more social capitals into water environmental protection by providing environmental performance contract services and authorizing development and management rights. (Led by People's Bank of China, National Development and Reform Commission, and Ministry of Finance, and participated by Ministry of Environmental Protection, Ministry of Housing and Urban-Rural Development, China Banking Regulatory Commission, China Securities Regulatory Commission, and China Insurance Regulatory Commission, etc.)

Increasing governmental capital inputs. To strengthen supports of central government spending on water environmental protection projects belonging to central government powers and responsibilities, and rationally undertake water environmental protection projects partly belonging to central and local governmental powers and responsibilities, with more support to underdeveloped areas and key areas; to study special transfer payment and substitute subsidies with rewards. Local people's governments at different levels should focus on sewage treatment, sludge disposal, channel improvement, drinking water source protection, livestock pollution prevention and control, water ecological restoration, and emergency decontamination. To provide necessary guarantee to classify costs for environmental monitoring capacity construction and operation. (Led by Ministry of Finance and participate by National Development and Reform Commission and Ministry of Environmental Protection, etc.)

(16) Setting up incentive mechanism. To improve a leading system of water conservation and environmental protection. To encourage advanced enterprises and industrial agglomeration areas committed to energy saving and emission reduction to meet higher standards for water use efficiency and pollution intensity. To give support to the demonstration of cleaner production, water conservation and pollution control. (Led by National Development and Reform Commission, and participated by Ministry of Industry and Information Technology, Ministry of Finance, Ministry of Environmental Protection, Ministry of Housing and Urban-Rural Development, and Ministry of Water Resources, etc.)

Implementing green credit. To give full play to the role of policy bank and other financial institutions in water environmental protection, with focus on circular economy, sewage treatment, water resource conservation, water ecological environmental protection, and clean and renewable energy utilization. To strictly restrict lending to enterprises violating environmental laws. To strengthen the building of environmental credit system in order to construct promise-keeping encouragement and credit-loss punishment mechanism, and by enhancing coordination in environmental protection, banking, security and insurance, to set up environmental credit evaluation system at different levels. To encourage such industries with high environmental risks as heavy metal industry, petrochemical industry and hazardous chemical transport industry to cover environmental pollution liability insurance. (Led by People's Bank of China, and participated by Ministry of Industry and Information Technology, Ministry of Environmental Protection, Ministry of Water Resources, China Banking Regulatory Commission, China Securities Regulatory Commission, and China Insurance Regulatory Commission, etc.)

Implementing trans-boundary water environment compensation. To explore horizontal fund subsidy, counterpart assistance and industrial transfer, set up trans-boundary water environment compensation mechanism, and carry out compensation pilot projects. To deepen pilot projects for paid use and trading of emission permit. (Led by Ministry of Finance, and participated by National Development and Reform Commission, Ministry of Environmental Protection, and Ministry of Water Resources, etc.)

## **VI. Tightening of environmental law enforcement and supervision**

(17) Improving regulation standards. To perfect laws and regulations. To accelerate the pace of formulating laws and regulations with respect to water pollution control, marine environmental protection, emission permit, environmental management of chemicals. To research the formulation of laws and regulations with respect to environmental quality objective management, environmental functional zones planning, water conservation and recycling use, drinking water source protection, pollution liability insurance, water function zone supervision and administration, groundwater management, environmental monitoring, ecological flow security, ships and land-based pollution control. To study and draft local water pollution prevention and control regulations based on actual conditions in that area. (Led by Office of Legislative Affairs, and participated by 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 Transport, Ministry of Water Resources, Ministry of Agriculture, National Health and Family Planning Commission, China Insurance Regulatory Commission, and State Oceanic Administration, etc.)

Improving standard system. To formulate and revise standards for groundwater, surface water and marine environment quality as well as pollutant emission standard for urban sewage treatment, sludge disposal, return water of farmland irrigation. To improve special emission limit, pollution control technology policy and cleaner production evaluation index system for water pollutants in key industries. Local government could draw up stricter local water pollutant emission standards than relevant national standards. (Led by Ministry of Environmental Protection, and participated by National Development and Reform Commission, 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, and General Administration of Quality Supervision, Inspection and Quarantine, etc.)

(18) Strengthening law enforcement. All pollutant discharging units must achieve environmentally acceptable discharges according to the law. Industrial enterprises should be inspected of pollutant discharge one by one, with acceptable enterprises required to take measures to ensure stably reaching relevant standards; unacceptable enterprises and those with total discharge amount exceeding the limit should be given "yellow card" as a warning and be subject to limited production or suspension for rectification; enterprises which cannot meet relevant requirements after rectification should be given "red card" and subject to termination of business and closedown. The list of environmental "yellow card" and "red card" winning enterprises will be regularly made public from 2016 on. Pollutant discharging units should be spot checked regularly for whether the discharge meets relevant standard, with results published to the public. (In charge of Ministry of Environmental Protection)

To improve environmental supervision and law enforcement mechanism characterized by supervision at national level, patrol at provincial level and inspection at prefecture level, strengthen coordination among environmental protection, public security, supervisory and other departments and units, establish a sound mechanism for coordination between administrative enforcement of law and criminal justice, and perfect provisions on cases transfer, acceptance, filing, reporting, etc. To strengthen supervision of environmental protection work carried out by local people's governments and departments concerned, and research to establish a national environmental ombudsman system. (Led by Ministry of Environmental Protection and participated by [Ministry of Industry and Information Technology](#)~~Ministry of Housing and Urban-Rural Development~~, Ministry of Public Security, State Commission Office of Public Sectors Reform, etc.)

Cracking down environmental illegal behaviors. To give a heavy blow to such environmental illegal behaviors as discharging and dumping waste water containing toxic and hazardous pollutants and sewage containing pathogens through private concealed conduit or seepage wells, seepage pits and karst caves, falsification of monitoring data, abnormal use of water pollutant treatment facilities, or unauthorized removal and idling of water pollutant treatment facilities. Those accountable for ecological damages should assume compensation liability strictly. Serious investigations should be made into illegal behaviors such as unauthorized approval, construction before approval, construction while pending approval and failure to file for environmental examination and acceptance during pilot production in the field of environmental impact assessment (EIA) on construction projects. Those who constitute a crime should be prosecuted for criminal liabilities according to the law. (Led by Ministry of Environmental Protection and participated by Ministry of Public Security, Ministry of Housing and Urban-Rural Development, etc.)

(19) Enhancing supervision level. To improve basin coordination mechanism. To establish sound trans-departmental, trans-regional and trans-waters discussion and coordination mechanisms for water environment protection, give play to roles of supervisory offices in environmental protection areas and basin water resources protection agencies, and explore and establish a land-sea ecosystem protection and restoration mechanism. Governments at all levels and departments upstream and downstream basins should strengthen coordination and cooperation, hold regular conferences or consultations, and implement joint monitoring and law enforcement, emergency linkage and information sharing. Areas such as Beijing-Tianjin-Hebei Region, the Yangtze River Delta and Pearl River Delta should establish a linkage and coordination mechanism for water pollution prevention and control before the end of 2015. To establish a water environment

protection and management system for strict supervision of all pollutant discharges. (Led by Ministry of Environmental Protection and participated by Ministry of Transport, Ministry of Water Resources, Ministry of Agriculture, State Oceanic Administration, etc.)

Perfecting water environment monitoring network. To make unified planning and setting for monitoring sections (sites). To improve capabilities of all-index water quality monitoring for drinking water sources, aquatic organism monitoring, groundwater environment monitoring, chemical substances monitoring and technical support for environmental risks prevention and control. A united water environment monitoring network should be established in areas such as Beijing-Tianjin-Hebei Region, the Yangtze River Delta and Pearl River Delta before the end of 2017. (Led by Ministry of Environmental Protection and participated by National Development and Reform Commission, Ministry of Land and Resources, Ministry of Housing and Urban-Rural Development, Ministry of Transport, Ministry of Water Resources, Ministry of Agriculture, State Oceanic Administration, etc.)

Increasing environmental regulation capability. To strengthen training professional techniques such as environmental monitoring, environmental supervision and environmental emergency response, strictly implement employment with certificates system for law enforcement and monitoring personnel, and enhance environmental law enforcement at the grassroots level, with villages and towns (streets) as well as industrial parks equipped with necessary environmental regulatory staff if possible. Cities and counties should adopt grid administration for environmental regulation from 2016 on. (In the charge of Ministry of Environmental Protection)

## **VII. Effective Strengthening of water environmental management**

(20) Strengthening management on environmental quality objectives. To define targets of water quality protection of all kinds of water body, and investigate whether such targets are met. Regions that fail to meet water quality standards should develop plans to specify pollution treatment tasks of pollutant discharge units within catchment areas. To define control measures and duration to meet standards, report plans to the people's governments at the next higher level for filing, and promulgate such plans to the society on a regular basis, starting from 2016. Regions that fail to meet water quality targets should be given a listed supervisory and a regional restricted approval of new projects if necessary. (Led by Ministry of Environmental Protection and participated by Ministry of Water Resources)

(21) Deepening control over total pollutant emissions. To improve pollutant statistical monitoring system, and include various pollution sources from industry, urban life, agriculture and mobile sources into field of investigation. To select total nitrogen, total phosphorus, heavy metal and other pollutants having prominent effects on water environment quality, to study the proper approach to include them into the basin and regional total pollution emissions control obligatory index system. (Led by Ministry of Environmental Protection, and participated by National Development and Reform Commission, Ministry of Industry and Information Technology, Ministry of Housing and Urban-Rural Development, Ministry of Water Resources, and Ministry of Agriculture, etc.)

(22) Tightening environmental risk control. To prevent environmental risks. To evaluate industrial enterprises along rivers, lakes and reservoirs, environmental and health risks of industrial agglomeration areas regularly and implement prevention and control measures. To evaluate environmental and health risks of existing chemical substances, make public the list of chemicals under priority control by the end of 2017, strictly limit manufacturing and usage of high-risk chemicals, and gradually phase out. (Led by Ministry of Environmental Protection, and participated by Ministry of Industry and Information Technology, National Health and Family Planning Commission, State Administration of Work Safety, etc.)

Proper dealing with water pollution incidents. Local people's government at different levels should formulate and improve contingency plan for dealing with water pollution incidents, specify liability subjects, define warning, forecasting and response program, emergency disposal and guarantee measures, and release early warning information subject to laws. (Led by Ministry of Environmental Protection, and participated by Ministry of Housing and Urban-Rural Development, Ministry of Water Resources, Ministry of Agriculture, and National Health and Family Planning Commission, etc.)

(23) Fully implementing pollution discharge permit. To issue pollutant discharge license in accordance with laws. By the end of 2015, to issue all licenses for key state-monitored pollution sources and pilot areas implementing paid use and trading of pollutant emission right. (In the charge of Ministry of Environmental Protection)

Strengthening license management. To include category, concentration, total amount, whereabouts and so on of pollutant discharge into the scope of license management for the purpose of water quality improvement and environmental risks prevention. To forbid pollution discharge without license or not in accordance with the license. To strengthen regulation of marine pollution discharge and research to establish marine pollutant discharge license system. To complete construction of national pollutant discharge license management information platform before the end of 2017. (Led by Ministry of Environmental Protection and participated by State Oceanic Administration)

## **VIII. Full Guarantee of Water Ecological Environment Safety**

(24) Guaranteeing safe sources of drinking water. To regulate drinking water safety throughout the process ranging from source of water to faucet. Local people's government at different levels and water suppliers should regularly monitor, test and assess the drinking water safety status, e.g., of the sources, from the water supply plants and in the faucets at users, and make public the relevant information quarterly by cities at prefecture level and above from 2016 on. All cities at county level and above should follow to make public the information on drinking water safety from 2018 on. (Led by Ministry of Environmental Protection and participated by National Development and Reform Commission, Ministry of Finance, Ministry of Housing and Urban-Rural Development, Ministry of Water Resources, National Health and Family Planning Commission, etc.)

Strengthening protection of drinking water source environment. To carry out standardized construction of drinking water sources, remove illegal constructions and sewage outfalls within drinking water source protection areas according to the law. Cities at prefecture level and above with a single water source should basically complete construction of standby water sources or emergency water sources before the end of 2020 or earlier if possible. To strengthen protection and water quality testing of rural drinking water sources. (Led by Ministry of Environmental Protection and participated by National Development and Reform Commission, Ministry of Finance, Ministry of Housing and Urban-Rural Development, Ministry of Water Resources, National Health and Family Planning Commission,



etc.)

Preventing and controlling groundwater pollution. To make regular investigations and assessments of environmental conditions in areas such as centralized groundwater drinking water source replenishment area. Enterprises engaged in petrochemical production, storage and sales and areas such as industrial parks, mining areas and refuse landfills should undergo necessary anti-seepage treatment. Underground petrol tanks at gasoline stations should all be updated as double-layer tanks or equipped with anti-seepage installments before the end of 2017. Abandoned mines, drilled wells and water intake wells should be closed and backfilled. To publish a list of groundwater pollution sites with great environmental risks and seriously affecting public health within areas such as Beijing-Tianjin-Hebei Region, and carry out pilot repair projects. (Led by Ministry of Environmental Protection and participated by Ministry of Finance, Ministry of Land and Resources, Ministry of Housing and Urban-Rural Development, Ministry of Water Resources, Ministry of Commerce, etc.)

(25) Deepening pollution prevention and control in key basins. To formulate and implement water pollution prevention and control planning for seven major basins. To research and establish function zoning management systems for basin water ecological environment. To take specific measures for chemical oxygen demand, ammonia nitrogen, total phosphorus, heavy metal and other pollutants influencing human health and intensify the treatment thereof. Rivers flowing into eutrophic lakes and reservoirs should be subject to total nitrogen discharge control. By 2020, the Yangtze River and Pearl River should enjoy good overall water quality; the water quality of the Songhua River, the Yellow River, the Huaihe River and the Liao River should be further improved on the basis of mild contamination; while contamination of the Haihe River should be relieved. The Three Gorges Reservoir Region should maintain good water quality, and water diversion projects such as South-to-North Water Diversion Project and Luanhe-Tianjin Water Diversion Project should guarantee water quality safety. Eutrophication of Taihu Lake, Chaohu Lake and Dianchi Lake should be improved. Contamination of lakes such as Baiyangdian Lake, Ulansuhai Nur, Hulun Lake and Ebinur Lake should be reduced. Areas with small environmental capacity, fragile ecological environment and high environmental risk should be subject to special discharge limits for water pollutants. Local authorities may expand the execution scope of special discharge limits in accordance with respective water environment quality improvement needs. (Led by Ministry of Environmental Protection and participated by National Development and Reform Commission, Ministry of Industry and Information Technology, Ministry of Finance, Ministry of Housing and Urban-Rural Development, Ministry of Water Resources, etc.)

Strengthening protection of good water bodies. To conduct ecological environmental safety assessment for headwaters and rivers, lakes and reservoirs whose present water quality is at or better than Grade III, and formulate and implement ecological environmental protection plans. Basin such as Dong River, Luanhe River, Thousand-island Lake and Nansi Lakes should get the tasks completed before the end of 2017. Rivers in Zhejiang and Fujian Provinces, in southwest and northwest parts of China as well as trans-boundary water bodies should maintain stable water quality. (Led by Ministry of Environmental Protection and participated by Ministry of Foreign Affairs, National Development and Reform Commission, Ministry of Finance, Ministry of Water Resources, State Forestry Bureau, etc.)

(26) Enhancing environmental protection in offshore areas. To implement pollution prevention and control plans for offshore areas. To focus on treatment of pollution at estuaries and bays such as Yellow River estuary, Yangtze River estuary, Minjiang River estuary, Pearl River estuary, Liaodong Bay, Bohai Bay, Jiaozhou Bay, Hangzhou Bay and Beibu Gulf. To implement total nitrogen discharge control in coastal cities at prefecture level and above. To research and establish total pollution discharge system in key sea areas. To regulate the setup of sewage outlets to the sea and clear up all the illegal or unreasonably set ones before the end of 2017. By 2020, rivers flowing into seas in coastal provinces (autonomous regions and municipalities), water bodies worse than Grade V should be basically eliminated. To raise access threshold for marine projects. (Led by Ministry of Environmental Protection and State Oceanic Administration, and participated by National Development and Reform Commission, Ministry of Industry and Information Technology, Ministry of Finance, Ministry of Housing and Urban-Rural Development, Ministry of Transport, Ministry of Agriculture, etc.)

Advancing ecologically healthy aquaculture. To designate restricted aquaculture areas in key rivers and lakes and nearshore areas. To implement standardized transformation of aquaculture ponds and nearshore aquaculture net cages, and encourage capable fishery enterprises to engage in offshore aquaculture and intensive aquaculture if possible. To vigorously popularize artificial feed and gradually reduce the use of iced or fresh trash fish as feed. To strengthen management of aquaculture inputs, standardize and limit the use of chemical medicine such as antibiotics in accordance with the law, and carry out special treatment to address the problem. By 2015, aquaculture area should be controlled to around 2.20 million hectares. (In the charge of Ministry of Agriculture)

Exercising strict control over environmental hormone chemicals pollution. Before the end of 2017, to complete investigations into the production and use of environmental hormone chemicals, monitor and assess risks of water sources, agricultural products planting areas and centralized aquaculture areas, and take measures to phase out, restrict and replace environmental hormone chemicals. (Led by Ministry of Environmental Protection and participated by Ministry of Industry and Information Technology, Ministry of Agriculture, etc.)

(27) Treating black and odorous water bodies in cities. To take measures such as source control and sewage interception, garbage cleanup, dredging and desilting and ecological restoration to intensify treatment of black and odorous water bodies and make public the treatment information every half a year. Built-up areas in cities at prefecture level and above should complete examination of water bodies and publish name of black and odorous water bodies, people in charge and compliance deadlines before the end of 2015; these areas should achieve no large-area floaters on rivers, no garbage on river banks and no illegal sewage outfalls before the end by 2017, and reach goals of treatment of black and odorous water bodies before the end of 2020. Built-up areas in municipalities directly under the central government, provincial capitals and municipalities with independent planning status should be basically free from black and odorous water bodies before the end of 2017. (Led by Ministry of Housing and Urban-Rural Development, and participated by Ministry of Environmental Protection, Ministry of Water Resources, Ministry of Agriculture, etc.)

(28) Protecting water and wetlands ecosystems. To strengthen protection of water ecology in rivers and lakes, and scientifically designate ecological red lines. It is prohibited to encroach upon space for water conservation, e.g., natural wetlands, with any encroachment eliminated within a deadline. To enhance construction and protection of water conservation forests, carry out wetland protection and restoration, and intensify returning farmland to forests, grassland or wetland. To strengthen ecological construction of

riverside (lakeside) greenbelts, and build vegetation buffer strips and isolation strips on both sides of rivers. To intensify protection of natural reserves for wild aquatic animals and plants as well as reserves for fisheries genetic resources, carry out in-situ and ex-situ conservation of rare and endangered aquatic organisms and important fisheries genetic resources, and increase aquatic biodiversity. To formulate and implement protection plans for aquatic biodiversity in seven key basins before the end of 2017. (Led by Ministry of Environmental Protection and State Forestry Administration, and participated by Ministry of Finance, Ministry of Land and Resources, Ministry of Housing and Urban-Rural Development, Ministry of Water Resources, Ministry of Agriculture, etc.)

Protecting marine ecology. To intensify protection of typical ecosystems such as coastal wetlands (mangrove forests, coral reefs, sea grass beds, etc.), estuaries and bays as well as important fisheries areas such as spawning grounds, feeding grounds, wintering grounds and migration pathways, implement enhancement and releasing, and construct artificial fish reefs. To make researches on, for example, marine ecological compensation and redress, and implement marine ecological restoration. To faithfully implement sea reclamation regulation program, strictly manage and supervise sea reclamation, forbid sea reclamation in key bays, core areas and buffer areas of marine natural reserves, key areas and reserved areas of marine special reserves, important estuary areas, important coastal wetland areas, important sandy coastlines and sand source protected sea areas, special protected islands as well as important fishery sea areas, and impose strict restriction on sea reclamation in ecologically fragile and sensitive areas and sea areas with poor self-cleaning capacity. To seriously investigate and deal with illegal sea reclamation behaviors and hold people concerned accountable. To include protection of natural coastlines into performance assessment for coastal local governments. By 2020, natural coastlines possession ratio nationwide should be no lower than 35% (excluding island coastlines). (Led by Ministry of Environmental Protection and State Oceanic Administration, and participated by National Development and Reform Commission, Ministry of Finance, Ministry of Agriculture, State Forestry Bureau, etc.)

#### **V. Defining and Fulfilling the Responsibilities of Each Party**

(29) Strengthening water environment protection responsibility of local governments. Local People's Governments at different levels, as executors of the Action Plan, should formulate and publish respective work plans for water pollution prevention and control before the end of 2015, and determine year by year key tasks and annual objectives by basins, areas and industries. It is required to continuously improve policy measures, increase capital investment, coordinate urban and rural water pollution control, intensify regulation and ensure full completion of all tasks. Work plans of provinces (autonomous regions and municipalities) should be submitted to the State Council for future reference. (Led by Ministry of Environmental Protection and participated by National Development and Reform Commission, Ministry of Finance, Ministry of Housing and Urban-Rural Development, Ministry of Water Resources, etc.)

(30) Strengthening coordination and linkage. To establish a national coordination mechanism for water pollution prevention and control and regularly research and solve major problems. Departments concerned should seriously fulfill respective responsibilities for water pollution prevention and control in line with the assignment of responsibilities. Ministry of Environmental Protection should intensify united guidance, coordination and supervision and report work progress to the State Council in time. (Led by Ministry of Environmental Protection and participated by National Development and Reform Commission, Ministry of Science and Technology, Ministry of Industry and Information Technology, Ministry of Finance, Ministry of Housing and Urban-Rural Development, Ministry of Water Resources, Ministry of Agriculture, State Oceanic Administration, etc.)

(31) Fulfilling entity responsibilities of pollutant discharging units. All kinds of pollutant discharging unit should strictly execute environmental laws, regulations and systems, enhance construction and operation management of pollution control facilities, carry out monitoring on their own and fulfill responsibilities such as pollution control, discharge reduction, and environmental risks prevention. Central and state-owned enterprises should take the lead in fulfillment of these responsibilities while enterprises within industrial agglomeration areas should explore and establish an environmental protection self-discipline mechanism. (Led by Ministry of Environmental Protection and participated by State-owned Assets Supervision and Administration Commission of the State Council)

(32) Exercising strict assessment of targets and tasks. The State Council and people's governments of provinces (autonomous regions and municipalities) should sign liability statements for water pollution prevention and control targets, disaggregate and implement targets and tasks, and put "two responsibilities for one post" into practice. Assessment should be made on the implementation of the Action Plan by basins, areas and sea areas every year, with assessment results made public and regarded as an important basis for comprehensive assessment and evaluation of the leadership and leading cadres. (Led by Ministry of Environmental Protection and participated by the Organization Department of the CPC Central Committee)

Assessment results should be regarded as a reference for allocation of funds with respect to water pollution prevention and control. (Led by Ministry of Finance and National Development and Reform Commission, and participated by Ministry of Environmental Protection)

In the event of failure to pass annual assessment, it is required to interview with persons in charge of the people's governments at provincial level and departments concerned thereof to propose correction advices and supervise; and limited approval should be implemented for EIA of construction projects of relevant areas and enterprises. In case of failure to effectively respond to a water environment pollution event due to ineffective work, ineffective fulfillment of responsibilities, etc., data intervention and falsification as well as failure to complete annual targets and tasks, it is required to hold the liability of relevant units and personnel in accordance with laws and disciplines. Leading cadres making blind decisions regardless of ecological environment, which result in deterioration of water environment quality and serious consequences should be put on record and given punishment from party organization or a party or policy discipline punishment in respective of the seriousness of the case, with those already leaving the posts being held liable for life. (Led by Ministry of Environmental Protection and participated by Ministry of Supervision)

#### **X. Strengthening of Public Participation and Social Supervision**

(33) Making environmental information public according to the law. To take into overall consideration factors such as water environment quality and whether it meets relevant standard, and publish lists of the best and worst 10 cities nationwide and water environment conditions in provinces (autonomous regions and municipalities). Cities with poor water environment, which cannot meet relevant standard after improvement, should be deprived of honors such as environmental protection model city, ecological civilization

construction demonstration area, water saving city, garden city and hygienic city, which should also be made public. (Led by Ministry of Environmental Protection and participated by National Development and Reform Commission, Ministry of Housing and Urban-Rural Development, Ministry of Water Resources, National Health and Family Planning Commission, State Oceanic Administration, etc.)

People's governments of provinces (autonomous regions and municipalities) should regularly publish water environment quality status in cities (autonomous prefectures and leagues) at prefecture level within respective administrative regions. Key pollutant discharging units identified by the state should make public name, discharging mode, concentration, total amount and excessive discharge of key pollutants they generate as well as construction and operation of pollution prevention and control facilities, actively receiving social supervision. To research and release data on environmental-friendly indexes in industrial agglomeration areas, pollutant discharge intensity in key industries, urban environmental-friendly indexes, etc. (Led by Ministry of Environmental Protection and participated by National Development and Reform Commission, Ministry of Industry and Information Technology, etc.)

(34) Strengthening social supervision. To provide training and consultation on laws and regulations for water pollution prevention and control to the public and social organizations, invite them to participate in the whole process of important environmental protection law enforcement actions and investigation into major water pollution events. To make public typical cases of violation of environmental laws. To establish a sound reporting system and give a full play to "12369" environmental protection reporting hotline and network platform. To solve environmental complaints reported by the masses within a deadline; informers may be rewarded once verified. To fully listen to public opinions on key decisions and construction projects by means of public hearing, collection via the Internet, etc. To actively pursue environmental nonprofit litigations. (In the charge of Ministry of Environmental Protection)

(35) Forming a public participation pattern. To establish the code of conduct that "everyone is responsible for water saving and clean water". To strengthen publicity and education, include knowledge on water resources, water environment protection and water regime in national education system, and increase public awareness of objective laws of economic and social development and environmental protection. To launch social practice activities for environmental protection, relying on social practice bases for national primary and secondary schools in respect of water saving education, water and soil conservation education, environmental education, etc. To support the work of environmental nongovernmental organizations and volunteers. To advocate new fashion of green consumption, organize mass creating activities, such as environmental protection communities, schools and families, promote water conservation and encourage purchase and use of water saving and environmental labelling products. (Led by Ministry of Environmental Protection and participated by Ministry of Education, Ministry of Housing and Urban-Rural Development, Ministry of Water Resources, etc.)

With rapid development of new industrialization, informatization, urbanization and agricultural modernization, China is facing onerous and arduous tasks of water pollution prevention and control. Local authorities and all departments concerned should properly deal with the relation between economic and social development and ecological civilization construction, define subjects of law enforcement and liability in the light of the requirement of "local authorities fulfilling in-situ responsibilities while departments strengthening industrial regulation" and achieve each performing and dedicated to its own functions, defining priorities, making comprehensive treatment and being pragmatic and efficient. Also, in the spirit of "clutching a piece of iron and you should leave your handprint on it, while step onto the stone and you should leave your footprint on it", they should exercise strict control over the implementation according to laws and rules, so as to ensure achievement of national water environment control and protection objectives as scheduled and contribute to realizing the Two Centenary Goals and the China Dream of the great rejuvenation of Chinese nation.