

2015 STATISTIC BULLETIN ON CHINA WATER ACTIVITIES

Ministry of Water Resources, P. R. China

The year of 2015 is a crucial ending for the implementation of 12th Five-Year Plan and also a year that we had made achievements in water reform although we faced great challenges in water management and arduous tasks in making beneficial use of water. Under the strong leadership of the Party Central Committee and the State Council, we advanced with pioneering spirit to overcome difficulties and conducted solid work. Great achievements had been obtained in water governance and management that provided a backbone for “12 continuous increases” of grain yield and made contribution to stimulate economic growth, promote transformation and upgrading and improve people's well-being and livelihood in China.

I. Investment in Fixed Assets

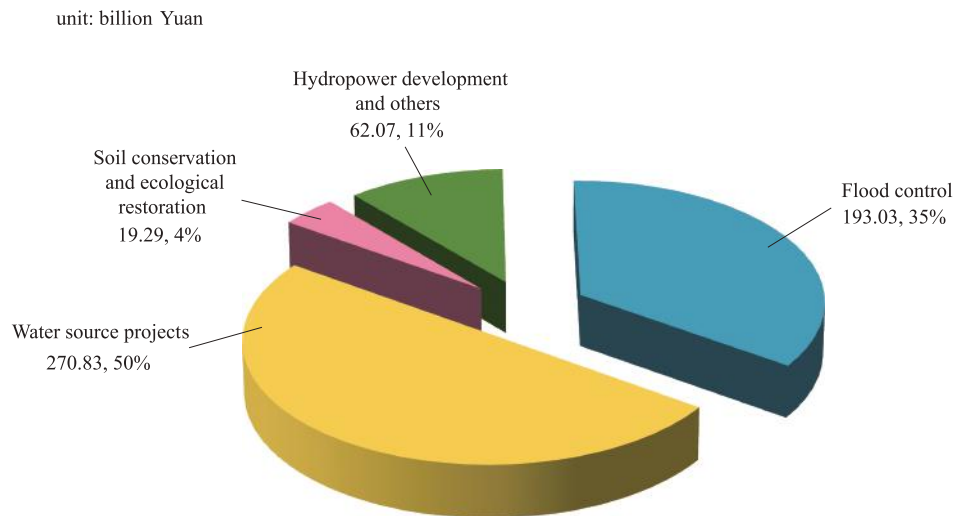
Completed investment for water project construction in 2015 amounted to 545.22 billion Yuan, with an increase of 136.91 billion Yuan or 33.5% comparing to the year before. In which, 415.08 billion Yuan put into construction projects with a 34.5% increase; 22.88 billion Yuan for installation with an increase of 23.7%; 19.87 billion Yuan for purchase of machinery, electric equipment and instruments, with a decrease of 3.6%; and 87.39 billion Yuan for other purposes (including compensation of resettlement and land acquisition), with an increase of 44.3%.

	2009 /billion Yuan	2010 /billion Yuan	2011 /billion Yuan	2012 /billion Yuan	2013 /billion Yuan	2014 /billion Yuan	2015 /billion Yuan	increase /%
Yearly Completed	189.40	231.99	308.60	396.42	375.76	408.31	545.22	33.5
Construction project	129.72	152.49	210.32	273.65	278.28	308.64	415.08	34.5
Installation project	11.34	10.96	12.17	23.78	17.36	18.50	22.88	23.7
Procurement of instruments and equipment	12.50	12.45	11.52	17.81	16.11	20.61	19.87	-3.6
Others (including compensation for resettlement and land expropriation)	35.84	56.09	74.59	81.18	64.02	60.56	87.39	44.3

In the total completed investment, 193.03 billion Yuan was allocated to the construction of flood control projects, 270.83 billion Yuan for the construction of water resources projects, 19.29 billion Yuan for soil and water conservation and ecological restoration, and 62.07 billion Yuan for special projects, such as hydropower development and capacity building.

The completed investment for seven major river basins reached 442.50 billion Yuan, of which 102.72 billion Yuan was invested in river basins in the southeast, southwest and northwest of China. Moreover, completed investments in eastern, middle, western and northeast regions were 210.47 billion Yuan, 91.32 billion Yuan, 188.27 billion Yuan and 55.16 billion Yuan respectively, accounting 38.6%, 16.7%, 34.6%, 10.1% of the total.

Completed Investment of Projects in 2015



Of this total completed investment, the Central Government contributed 10.91 billion Yuan, and local governments contributed 534.31 billion Yuan. Large and medium-sized projects completed investment of 86.00 billion Yuan; small-sized and other projects completed 459.22 billion Yuan; newly-constructed project completed 400.77 billion Yuan; and reconstruction and expansion completed 144.45 billion Yuan.

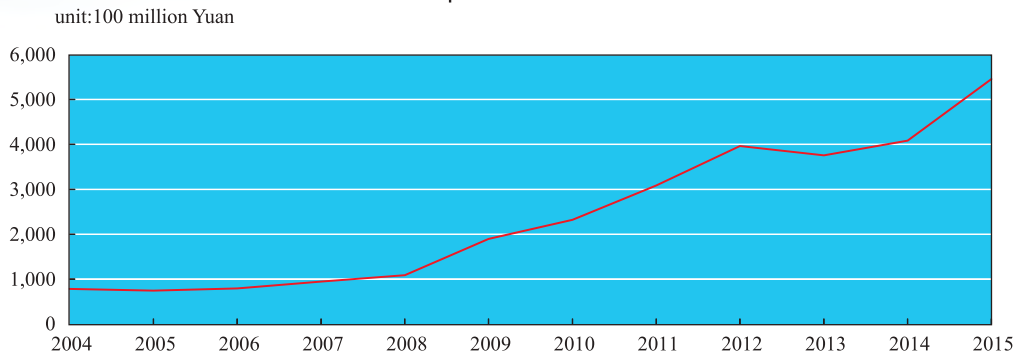
In 2015, the newly increased fixed assets of projects under-construction valued 437.35 billion Yuan. By the end of 2015, the accumulated investment in projects under construction was 1,459.07 billion Yuan, and the rate of completed investment reached 64.6%. The newly-added fixed assets totaled 898.00 billion Yuan and the rate of investment transferred into fixed assets was 61.5%, an increase of 2.7% comparing to 2014.

A total of 25,184 water projects were under construction in 2015, with a total

investment of 2, 258. 07 billion Yuan, with an increase of 15. 7% comparing to that of the year before. The projects with central government finance were 21, 437 with an increase of 42. 1% comparing to the year before. The total funds used by projects under construction reached 1, 511. 95 billion Yuan and increased 41. 2% comparing to the year before. There were 16, 702 newly-constructed projects in 2015, with an increase of 23. 6% and newly-added investment was 538. 90 billion Yuan with a increase of 26. 0%.

In 2015, the completed civil works of earth, stone and concrete structures were 3. 76 billion m³, 600 million m³, and 80 million m³ respectively. By the end of 2015, the ratio of complete quantity of earthwork, stonework, concrete of the under-construction projects were 77. 8% , 78. 4% , and 62. 3% respectively.

Completed Investment of Fixed Assets Investment



II. Key Water Projects Construction

Harness of large rivers and lakes. In 2015, there were 5, 730 river harness projects under construction, including 600 flood control embankment

construction, 803 projects for large river and main tributary control and 4,029 medium and small river control works and 298 flood diversion and storage areas or other projects. By the end of 2015, the accumulated investment in projects under construction was 328.14 billion Yuan, with a completion rate of 54.5%. There were 17,250 km of river channels being trained and 11,424 km of which completed within the year.

Reservoir projects. There were 296 reservoir projects under construction in 2015. By the end of 2015, the completed investment of under-construction projects reached 163.59 billion Yuan, accounting for 55.6% of the total completed investment. There were 2,622 hazard-vulnerable reservoirs completing repair or reinforcement in 2015. By the end of 2015, the completed investment was 23.95 billion Yuan, accounting for 77.0% of the total completed investment. A total of 2,413 small and medium hazard-vulnerable reservoirs completed repair or reinforcement in 2015.

Water allocation projects. The yearly investment for water allocation projects reached to 463.43 billion Yuan. The completed investment had accumulated to 342.96 billion Yuan, accounting for 74.0% of the total. The investment for under-constructed projects of phase-I of eastern and middle routes of South-to-North Water Diversion Project was 261.95 billion Yuan and accumulated completed investment reached 259.00 billion Yuan. The completed investment in 2015 totaled 4.68 billion Yuan.

Water allocation projects had been running smoothly in 2015. Main works of Water Diversion from Huai River to North of Anhui were completed. The gate of Guizhou Qianzhong Water Complex was closed for water impoundment. Phase-I of Jiayan Water Complex and Water Diversion in Northwest of Guizhou had completed supply

of water, electricity and road and site clearing. Damming of Sanhekou Water Complex was realized for transfer water from Han to Wei River. Huangjinxia Water Complex was initiated for construction. Tunnel of Main Channel for Water Diversion from Datong River to Huangshui River in Qinghai was completed for trial operation. Phase-I of Water Supply by Diverting Water from Taohe River in Gansu was put into trial operation. Other projects including Phase-II of Water Supply by Diverting Water from Taohe River, Water Allocation in North of Hubei, Water Diversion for Nandu River in Hainan and Water Diversion from Yellow River to Hebei and Baiyangdian Wetlands, were all started construction.



Irrigation, drainage and rural water supply. The investment to the under-constructed projects for providing safe drinking water worthies 106.39 billion Yuan, with an accumulated investment of 89.38 billion Yuan. The newly increased capacity helped 67.09 million rural residents and school teachers and students access to safe drinking water. By the end of 2015, the beneficial rural population who have centralized water supply made up a percentage of 82.4% of the total. The Central Government allocated 19.14 billion Yuan (including 16.83 billion Yuan listed in Key Water Project) for completion of counterpart systems and rehabilitation of 151 large irrigation districts for water saving purpose, 10 newly-constructed irrigation districts, rehabilitation of large irrigation and drainage pumping stations in 10 provinces, construction of demonstration projects for large-scale extension and benefit increase of water-saving irrigation systems in 30 provinces (autonomous regions or municipalities) as well as water projects constructed by Xinjiang Production and Construction Corps and in pastureland. In addition, 31.79 billion Yuan from central government finance invested to build small-scale farmland waterworks for irrigation and drainage and water supply in rural areas. The newly-added effective irrigated area reached 1,798,000 ha; moreover, new-added water-saving irrigated area was 2,725,000 ha. Meanwhile, 200 million Yuan was allocated to schistosome prevention projects.

Rural hydropower and electrification. In 2015, the completed investment of rural hydropower station construction amounted to 24.40 billion Yuan; the newly increased hydropower stations were 360, with a total installed capacity of 2.41 million kW. The completed investment for rural electricity network in the whole country was 6.4 billion Yuan; the newly increased capacity of 110 kV substation or above was 2.95 billion kVA; the newly increased capacity of 35 (63) kV substation was 1.77 million kVA; the capacity of distribution transformer was 4.55 million kVA. The newly constructed 10 kV or above high pressure transmission line was 17,000 km and low pressure line was 30,000 km.

Soil and water conservation. An investment of 36.60 billion Yuan had been arranged for soil and water conservation and ecological restoration project construction in 2015 and 27.78 billion Yuan were invested. The newly-added areas with soil conservation measures were 54,000 km², of which the areas under National Major Project for Soil Conservation were 16,000 km². The newly-added forest protected areas reached 19,000 km². There had been 1,934 small watersheds with comprehensive measures of soil and water conservation and 236 silt retention dams built on the Loess Plateau. The newly built basic farmlands were 590,000 ha (including 483,000 ha of terrace lands and 13,000 ha of silted land). Newly-created forestland for soil conservation reached 1,408,000 ha and grassland 323,000 ha.

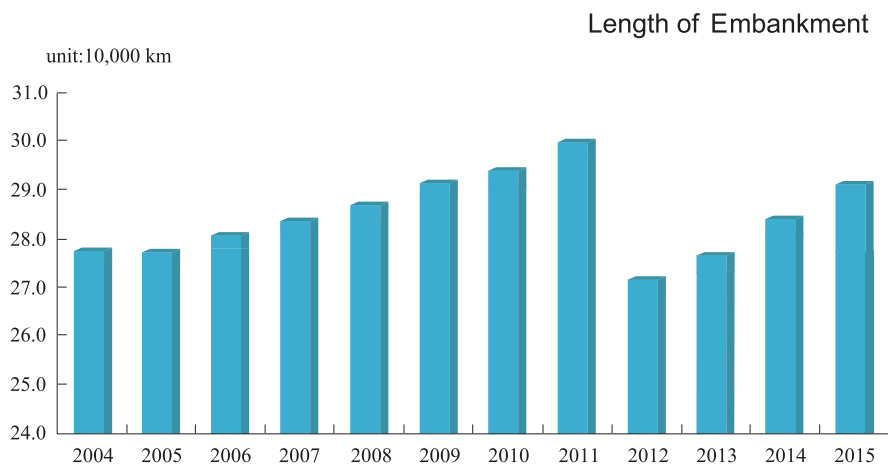
Capacity building. The completed investment for capacity building in 2015 was 3.33 billion Yuan, of which 0.94 billion Yuan spent on procurement of communication equipment for flood control, 0.99 billion Yuan for hydrological facilities, 0.13 billion Yuan for scientific research and education facilities, 0.94 billion Yuan for early-stage work, and 0.33 billion Yuan for others.

III. Key Water Structures

Embankments and water gates. In 2015, the completed river embankments from Grade-I to Grade-V in the whole country had a total length of 291,400 km^①. Of which, 196,500 km of embankment met the standard, with a percentage of 67.4% of the total up to standard. The length of embankment met the standard of Grade-I and Grade-II were 31,200 km, with a percentage of 78.2% of the total. These embankments can protect 586 million people and 40,800 ha of cultivated land. The number of water gates with a flow of 5 m³/s or above increased to

① The length of embankment before 2011 includes embankment below Grade-V.

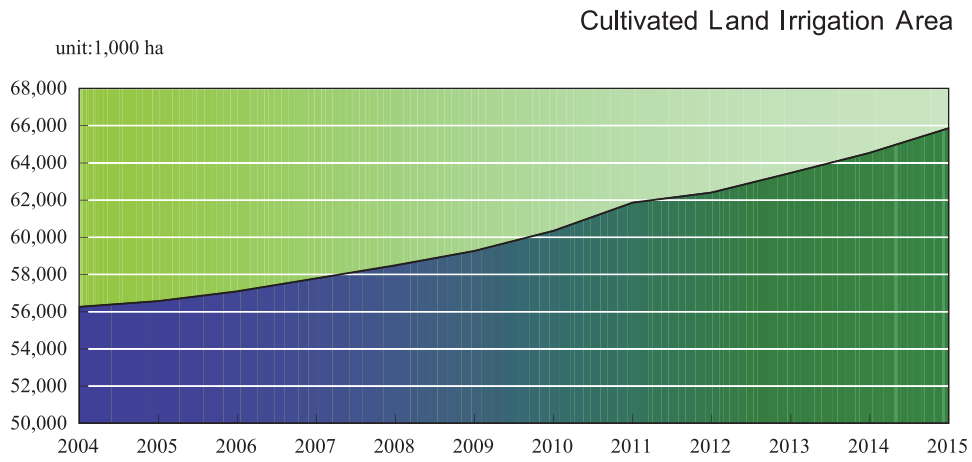
103,964, of which 888 were large water gates, 10,817 flood diversion sluices, 18,800 drainage/return water sluices, 5,364 tidal barrages, 14,296 water diversion intakes and 54,687 controlling gates.



Reservoirs and water complexes. There were 97,988 reservoirs built in China, with a total storage capacity of 858.1 billion m^3 , of which 707 belong to large reservoirs with a total capacity of 681.2 billion m^3 , accounting 79.4% of the total; 3,844 medium-sized reservoirs with a total capacity of 106.8 billion m^3 , accounting 12.4% of the total. The percentage of large and medium reservoirs up to the safety standard ranked 93.3% of the total.

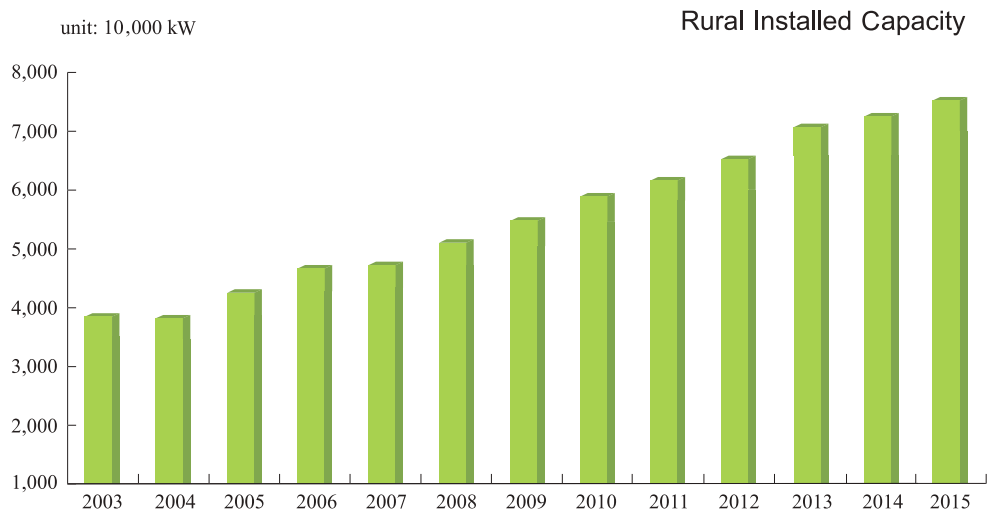
Irrigation. Irrigation districts with an area equal or above 2,000 mu added to 22,573, with a total cultivated land irrigated area of 36.341 million ha. In which, the irrigation districts equal or above 500,000 mu were 176, with a total cultivated land irrigated area of 12.024 million ha; the irrigation districts covering an area from 300,000 to 500,000 mu were 280, with a total cultivated land irrigated area of

5.663 million ha. By the end of 2015, National irrigation area reached to 72.061 million ha, the total cultivated land irrigated area reached to 65.873 million ha that accounted to 48.7% of the total cultivated area in China. The areas with water-saving irrigation facilities was totaled 31.060 million ha, among which 9.012 million ha equipped with sprinkler or micro irrigation systems and 8.912 million ha installed low-pressure pipes.

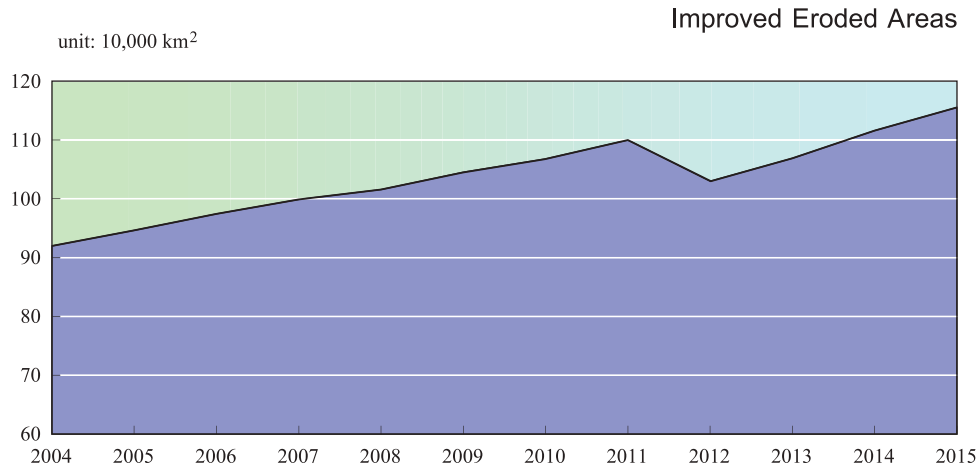


Tube wells and pumping stations. A total of 4.832 million water supply tube wells, with a daily water abstraction capacity equal or larger than 20 m³ or an inner diameter larger than 200 mm, were employed in the whole country. A total of 91,795 pumping stations that have an installed flow of 1 m³/s or installed voltage above 50 kW had been installed, among which 368 belong to larger pumping stations, 4,178 medium-size and 87,249 small-size pumping stations.

Rural hydropower and electrification. By the end of 2015, hydropower stations built in rural areas totaled 47,340, with an installed capacity of 75.83 million kW, accounting for 23.8% of the total in China. The annual power generation by these hydropower stations reached to 235.1 billion kWh, accounting for 21.1% of the total power generation in China.



Soil and water conservation. By the end of 2015, the restored eroded areas reached 1.1558 million km²; ecological restoration areas accumulated to 800,000 km². A total of 640 ecologically-clean small watersheds had been constructed. Dynamic monitoring for soil and water loss had been conducted in 18 key areas of national importance, 16 protection and control areas of national importance and 1 centralized area of production and construction project, with a total sampling monitoring area of 586,100 km². Positional observation was applied to 65 typical small watersheds of various types of soil erosion and 91 typical monitoring sites.



Hydrology and informationization. By the end of 2015, the number of hydrological stations of all kinds increased to 99,575 in the whole country, including 3,151 national basic hydrologic stations, 2,555 special hydrologic stations, 11,180 gauging stations, 49,403 precipitation stations, 14 evaporation stations, 1,856 soil moisture monitoring stations, 14,560 water quality stations, 16,800 groundwater monitoring stations and 56 experimental stations. There were 45,863 various kinds of hydrological monitoring stations that provide hydrological information to flood control commanding headquarters at and above the county level; 1,247 various kinds of hydrological monitoring stations that provide forecast information. A total of 311 water environment monitoring centers (sub-centers) put into operation. Water quality of nearly all major rivers, lakes and reservoirs in China are monitored. Water ecology monitoring has been initiated.

The servers of varied kinds installed in the water resources departments at or above the provincial level reached 4,567, among which internet server 1,311, servers outside the web 3,256. There were 84,503 counterpart net-connected computers of various kinds, among which 17,827 for inter net and 66,676 for outer net. The

storage capacity of all kinds of on-line store equipment installed in the water resources departments at or above the provincial level reached 5,545,750.87 GB. Currently, we have installed 426 small satellite station, 1,535 other satellite networks, 47 portable satellite stations, 1,921 wireless broadband access terminals and 1,222 cluster communication terminals. A total of 140,482 information gathering points were installed for water departments at or above the provincial level, among which 110,622 were automatic information gathering points.

IV. Water Resources Utilization and Protection

The availability of water resources in 2015 totaled 2,796.26 billion m^3 , 0.9% more than multi-year average. Mean annual precipitation was 660.8 mm, 2.8% more than multi-year average and 3.7% more than the year before. By the end of 2015, total water storage of 624 large reservoirs reached 358.72 billion m^3 , 1.44 billion m^3 more compared with that of the year before; total water storage of 3,378 medium-size reservoirs were 45.01 billion m^3 , 4.16 billion m^3 more than that in early 2015.

In 2015, the total water supply amounted to 610.32 billion m^3 , among which 81.4% came from surface water, 17.5% from underground aquifers and 1.1% from other water sources. The total water consumption amounted to 610.32 billion m^3 , of which domestic use amounted to 79.35 billion m^3 (in which urban domestic water use occupied 77%) or 13.0% of the total; industrial use 133.48 billion m^3 or 21.9% of the total; agricultural water use 385.22 billion m^3 or 63.1% of the total and environmental flow of 12.27 billion m^3 or 2.0% of the total. Comparing to that of the year before, water consumption raised by 0.83 billion m^3 , in which domestic water use increased by 2.69 billion m^3 , industrial use decreased by 2.13 billion m^3 , agricultural water use decreased by 1.68 billion m^3 and environmental flow increased by 1.95 billion m^3 .

Water consumption per capita in 2015 was 445 m³ in average. Water use of 10,000 Yuan GDP (at comparable price of the same year) was 90 m³, a 30% decrease at comparable price of that in 2010. Water use of industrial production value added per 10,000 Yuan (at comparable price of the same year) was 58.3 m³, 37% less at comparable price of that in 2010.

According to the result of water quality assessment on river sections of 235,000 km, rivers with better water quality that comply with or super than class-III standard occupied 74.2% of the total.

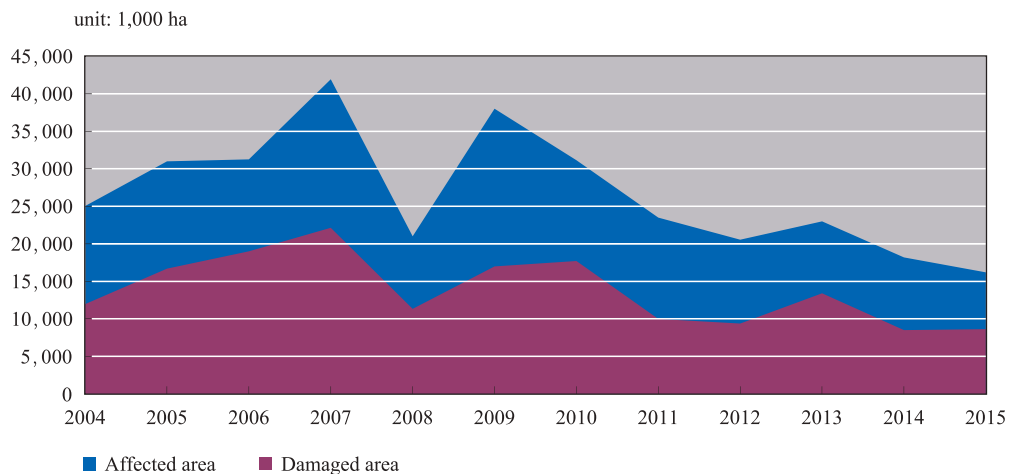
V. Flood Control and Drought Relief

Generally speaking, no large scale damages occurred as a result of flood and water-logging disasters in 2015. Nevertheless, a total of 6.132 million ha of cultivated land were affected by floods, resulting in 3,054,000 ha damaged, 76.00 million people affected, 319 people dead, and 81 missing. A total of 150,000 houses were destroyed and 168 cities suffered from inundation. The disasters resulted in 166.1 billion Yuan of direct economic losses, among which the loss with water infrastructures reached 25.4 billion Yuan. The flood stricken areas were relatively concentrated that mainly affected Jiangsu, Zhejiang, Anhui, Fujian, Jiangxi, Hubei, Hunan, Sichuan, Guizhou and Yunnan. The death toll or the number of missing caused by mountain flood took 71% of the total in 2015. The direct economic loss caused by typhoons took 41% of the total loss as a result of flood and waterlogging disasters.

In 2015, no large scale drought occurred in the whole country. Drought affected province (autonomous regions) mainly included Inner Mongolia, Hebei, Liaoning and Shandong. The farmland affected by droughts reached 10.067 million ha, of which 55.77 million ha damaged, with a direct economic losses of 57.9 billion

Yuan. A total of 8.36 million urban and rural population and 8.07 million man-feed big animals and livestock suffered from temporary drinking water difficulties due to water shortage caused by these droughts.

Flood or Drought Affected and Damaged Areas

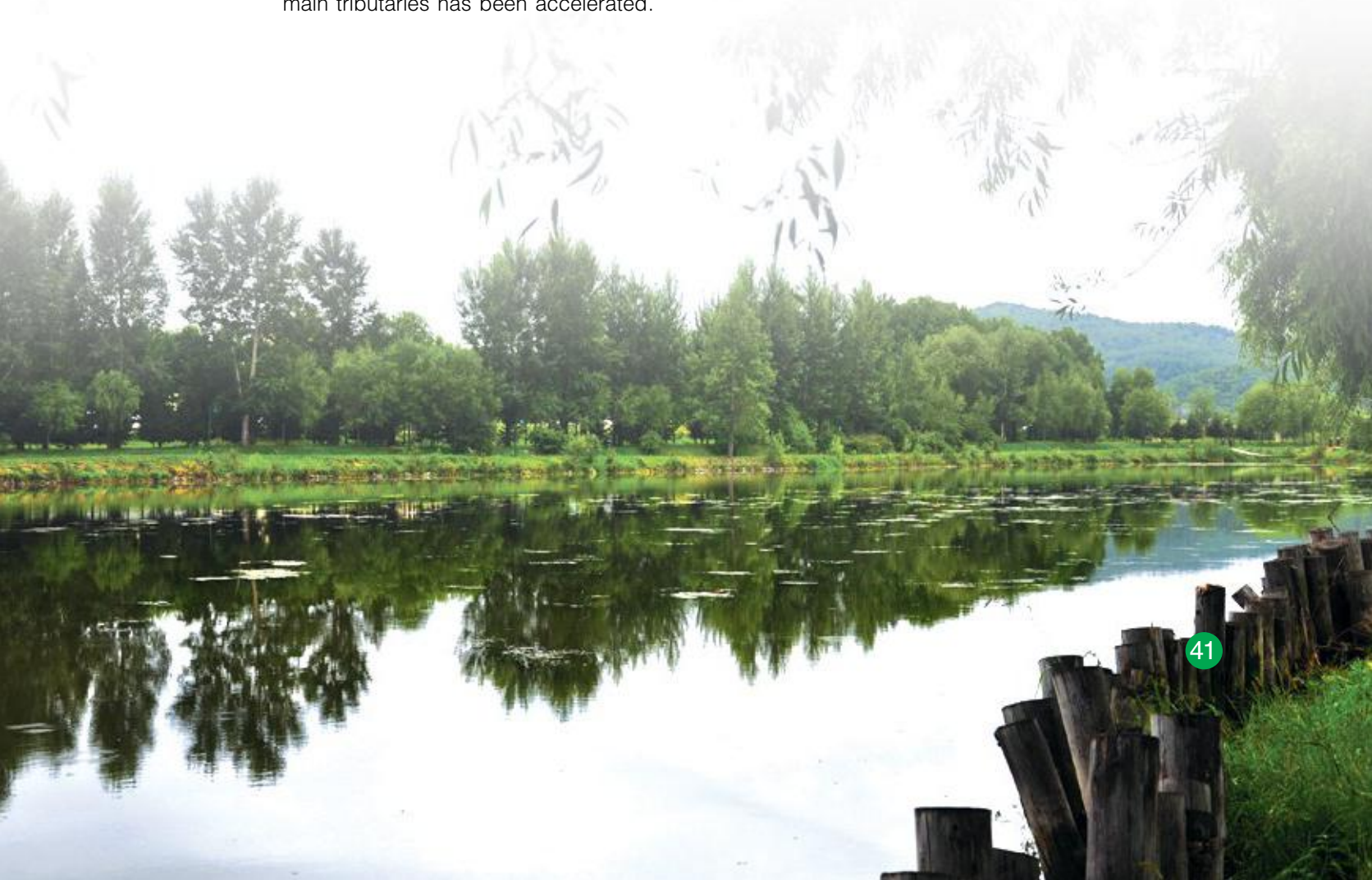


In 2015, the funds allocated to flood control and drought relief amounted to 2.91 billion Yuan, among which 2.36 billion Yuan for extraordinary flood defense and 550 million Yuan for extraordinary drought. The flood control works protected 1.134 million ha of cultivated land and 77 cities from flooding. The efforts of flood control and disaster reduction generated 42.2 billion Yuan of economic benefits. Safe drinking water was provided to 6.91 million people in rural and urban areas as well as 6.53 million big animals and livestock for alleviating temporary water shortage. The area with anti-drought measures reached 16.556 million ha that prevented a loss of 22.6 billion kg of grain. The accumulative input for flood disaster relief was 3.44 million person-time, 10,000 vessel-time, 153,000 shifts of transportation and 165,000 shifts of mechanical equipment. The consumed materials valued 1.31 billion Yuan. The person-time of emergency evacuation was 6.28 million. The person-time of rescue from flooding reached 490,000. The labor input for drought

relief was 30.05 million person-time. There were 3.10 million tube wells, 36,000 pumping stations, 19.28 million mobile devices and 484 million various kinds of water transporting vehicle employed for drought relief.

VI. Water Management and Reform

Water resources planning and early-stage work. In 2015, there were 25 water resources plans approved by the government agencies at the central level; two plans approved by the State Council including National Water and Soil Conservation Plan; 23 plans approved by the Ministry of Water Resources including Comprehensive Management Plan for Nanyunhe River and Comprehensive Plan of Water Resources for Three River Sources Area in Qinghai Province. Preparation of the National 13th Five-Year Plan on Water Development and special subject plans were all completed. Other plans such as Development and Protection Plan for Yangtze Economic Belt and Coastlines as well as Planning Layout for Water Intakes, Pollution Discharge Outlets and Emergency Water Sources in Yangtze Economic Belt and so on. Preparation work of comprehensive plans for major river basins and main tributaries has been accelerated.



In 2015, a total of 63 projects were delivered to NDRC for approval, with a total investment of 402.558 billion Yuan. NDRC approved 64 water-related projects, including 16 project proposals, 40 feasibility study reports, 7 budgetary estimates and 1 project plan, with a total investment of 474.233 billion Yuan. There were 36 preliminary designs approved by MWR, with a total investment of 218.992 billion Yuan.

Water legislation and administrative enforcement. In 2015, the ministry has authorized/extended 1,155 water-related administrative approvals or permits, including 36 preliminary design documents of water construction projects, 3 water resources assessment reports, 3 approvals for evaluation reports of flood impact by non-flood control project, 258 approvals of soil and water conservation plan of production and construction projects; 172 check and acceptance of soil and water conservation plans of construction projects; 67 licenses of headstock gear utilization; 5 qualification certificates of survey and assessment for hydrology and water resources; and 483 approvals/extensions of qualification certificates of supervising organs of water-related projects.

In 2015, the investigated illegal cases totaled 30,188 and 27,588 or 91.4% of them resolved. A total of 3,206 water disputes were accepted and 3,079 resolved. There were 19 administrative reconsideration cases received by the Ministry of Water Resources that all being settled.

Water affairs management. There are 2,684 administrative regions at or above the county level assigning the responsibilities of water affairs management to newly-created water authorities or existed water resources bureaus, accounting for 83.2% of the total in China. Among 1,536 established water authorities, 4 at provincial level, 8 at sub-provincial level, 230 at prefecture or city level, and 1,294 at county level. There were 2,551 water plants operated by utilities under

these water authorities, with 476,000 km of water supply pipes, a daily water supply of 17,375 million m³ and annual water supply of 32.59 billion m³. A total of 4,082 sewage treatment plants were under operation, with a total pipeline of 395,000 km long and daily treatment capacity of 202.45 million m³/d. The annual amount of sewage treatment reached to 43.92 billion m³.

Reform in project construction and management. Reform of state-owned water management institutional system has been deepened. Full funding has been provided for managerial staff and operation and maintenance in the water sector. Government procurement has been highlighted for bettering off services for operation and maintenance of water projects. Professionalized, intensified and socialized management of water projects has made considerable progress.

In 2015, a total of 21.7 billion Yuan had been used for covering cost of managerial staff and operation and maintenance of 13,115 water utilities, which covered 83.0% of the total. The funds used for basic expenses for staff of public utilities were 12.60 billion Yuan that covered 92.0%; while the funds used for operation and maintenance of water facilities were 9.1 billion Yuan that covered 74.0%. Reform of management system by separating functions of administration with operation was adopted in 9,402 utilities, accounted for 72.0% of the total.

In 2015, another 34 enterprises were approved as Class-A qualification of supervisors for water and hydropower project construction, 93 got Class-B qualification and 144 got the Class-C qualification. Another 13 enterprises got Class-A qualification of supervisors for soil and water conservation project construction, 30 got the Class-B qualification and 40 got the Class-C qualification. There were 1 enterprise obtained Class-A qualification of supervisors for electromechanical and metal equipment manufacture and 6 obtained Class-B

qualification. A total of 22 enterprises got the qualification (no classification is given) of supervisors for environment protection of water project construction. There were 21 enterprises obtained Class-A quality inspection organizations for geotechnical engineering approved; 18 obtained Class-A quality inspection organizations for concrete structures; 5 obtained Class-A quality inspection organizations for metal structures; 3 obtained Class-A quality inspection organizations for mechanical and electronic equipment; and 8 obtained Class-A quality inspection organizations for measuring and gauging tools.

By the end of 2015, the approved national water scenery spots reached 719, including 340 reservoirs, 147 natural rivers and lakes, 140 lake or riverine cities, 39 wetlands, 27 irrigation districts and 26 soil conservation areas.



Reform in rural water resources management. Reform of property right system of small irrigation and drainage system has been deepened. Innovative approaches have been adopted for reform and innovation of operation and maintenance system for 100 counties that selected as pilot projects. Preliminary results have been obtained and targets of “clear ownership, specified duties and responsibilities, funds guarantee, proper utilization of fund and sustainable development” have been realized in some irrigation schemes. A mechanism of “using price for subsidy and construction before subsidy” has been perfected in 57 pilot projects. Financial subsidies for operation and maintenance of irrigation schemes were allocated to 61 pilot projects. Multi-dimensional governance pattern such as self-construction and operation, government procurement public service and farmer water user association have been applied in 71 pilot project counties. Ownership of water structures in 17 pilot counties was further defined that smoothed the way for property mortgage. Reform of property right system has been conducted in nearly 8 million small irrigation schemes in the whole country. The coverage rates of cost of basic personal expenses in large irrigation districts as well as operation and maintenance of public-good waterworks reached to 69% and 48% respectively. A total of 29,351 township (river basin) water stations were rebuilt or newly-built in the country. Water User Associations (WUAs) established in the whole country reached to 83,400 and managed 294 million mu of irrigated land that occupied 29.7% of the total in China.

Soil and water conservation. A total of 29,000 soil and water conservation plans of development and construction projects were examined and approved, covering a scope of 3,117 km² for protection and control; A total of 5,900 soil and water conservation projects completed check and acceptance.

In 2015, Measures for Implementation (Regulations) of Soil and Conservation Law were promulgated in 6 provinces (autonomous regions or municipalities) .

Provincial Administrative Methods for Collection and Utilization of Compensation Fee for Soil Conservation were issued in 8 provinces (autonomous regions or municipalities). By the end of 2015, there were 27 provinces (autonomous regions or municipalities) promulgated the implementing provisions or regulations of Soil and Water Conservation Law; and 17 provinces (autonomous regions or municipalities) made public the standards for the collection of compensation fee.

Water pricing reform. Reform of pricing system for agricultural water use has been promoted by means of innovative management, price adjustment, financial subsidy and counterpart structures. Pilot projects in 80 counties of 27 provinces (excluding Tibet, Hainan, Zhejiang and Shanghai) had been implemented with an area of 2.02 million mu or 25,000 mu per county in average. Water saving and benefit increase had been realized thanks to the reform, for water saving in the pilot area reached 100 m³ per mu and irrigation cycle shortened by 20% in average.



Reform of hydropower management system. Transformation of water use right on parable basis has been implemented in 17 provinces (autonomous regions, municipalities) . Administrative rules and regulations for water-power resource development and utilization were promulgated in 16 provinces (autonomous regions, municipalities) . It was stipulated by 12 provinces that water resources department shall take whole responsibility for integrating water resources management. Safety production has been reinforced for electric generation in rural areas by means of introducing approaches of “ specifying person-in-charge of production and supervision” , which had been carried out at each level.

Production safety supervision. In 2015, there were 6 production accidents with 10 people dead. A variety of safe production supervision and special-subject inspections were conducted, and 29,000 potential hazards were detected and 5,000 potential hazards were eliminated. The database created by the reporting system of safe production information has been updated that contained basic data of 60,947 water enterprises or public institutions and 386,949 water utilities as well as 66,193 data that relevant to potential safety hazard. Monthly reports of potential safety hazard and accidents had been submitted by 53,445 water enterprises or public institutions on time. There were 45 water enterprises passed the examination during the first level-I standard evaluation for water safety production. Performance evaluation had been completed for 4,185 persons in charge of construction enterprises, projects and professional safety production managers.

On-site investigations to 1,240 construction projects had been undertaken by 265 inspection teams for 8 times. A total of 200 rectification documents were released to each province regarding to projects with striking problems. By means of project inspection, special inspection and major inspection, investigations had been conducted to those projects that has specific time limit made by the State Council for completion, mainly including key construction projects for water conservation

and supply, water sources, medium-size reservoir and river harness, and also safe drinking water provision in rural areas, medium and small river harness and strengthening of small reservoirs with potential risks. The scope of investigation covered all provinces except Tibet. Self-inspection of provincial water administrative departments had been encouraged and a total of 535 inspection groups were sent out for reviewing 2,096 projects.

Reservoir resettlement. According to uncompleted statistics, there were 169 large and medium reservoirs under construction in 2015, with 309 concentrated relocation sites constructed and centralized newly-constructed housing of 1.95 million km². The resettled population was 100,800, among which 89,100 were relocated rural residents and 11,700 relocated urban residents. A total of 79,200 of resettled people were arranged for production activities, including 44,400 arranged for agricultural production with a year by year compensation for 5,000 persons; 22,100 arranged by monetary compensation (arranged by themselves); 2,900 people joined pension plans, 600 people seeking help from relatives and friends and 4,200 people with other arrangements.

Water science and technology. A total of 300 million Yuan had been allocated to science and technology projects, including identification of 2 National Key Technology R&D Supporting Program, 37 special-subject and water-related scientific research projects of public interest, and 55 projects listed in "948 Plans", National Agricultural Science and Technology Achievements Transformation Fund Programs and MWR Key Technological Achievements Extension Plans. Four water technological achievements won the National Sci-Tech Advance Award. By the end of 2015, the numbers of national level or ministerial level labs were 12, and technical research centers were 15. Special funds for procurement and repairing of equipment of national scientific institutions amounted to 108.90 million Yuan. There were 835 ministerial technical norms and standards that still be effective; 160 water-related

technical standards under review (revision) . There were 106 technical norms and standards listed in the Table of Water-related Technical Standard System.

International cooperation. A total of 70 multilateral cooperation and exchange activities were successfully conducted, with 3 bilateral cooperation agreement signed. Under the fixed mechanism for bilateral exchange of government agencies, 7 meetings were organized and held. Two projects with loans borrowed from international financial organizations such as the World Bank are undertaking, with a total borrowing of 280 million U S dollars. The World Bank has completed appraisal of Key Plain and Low-lying Land Harness in Huai River Basin project with a loan borrowing of 200 million US dollars. There were 4 governmental cooperation projects under implementation, 2 special projects for international cooperation and science and technology at national level got approval, having a funding of 5.40 million Yuan. There were 9 special projects for international cooperation and science and technology at national level under implementation, with a funding of 21.01 million Yuan.

VII. Current Status of Water Sector

Employees and salaries. In 2015, the employees of water sector were totaled 0.974 million, a 2.6% decrease comparing to that the year before. Of which the employees with long-term post amounted to 0.947 million, a 2.5% decrease. In the employees with long-term post, the staff working in the agencies directly under the Ministry of Water Resources was 66,000, a 1.6% decrease over the year before; the staff working in local agencies was 0.881 million, a 2.6% decrease. The total salary for the employees with long-term post in the whole country was 52.94 billion Yuan, and the average salary per employee with long-term post was 55,870 Yuan.

Employees and Salaries

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
number of in service staff/10 ⁴ persons	110.5	109.2	106.76	105.57	103.74	106.63	102.47	103.4	100.5	97.1	94.7
of which, staff of MWR and agencies under MWR/10 ⁴ persons	6.6	6.8	7.15	7.22	7.20	7.42	7.51	7.4	7.0	6.7	6.6
Local agencies /10 ⁴ persons	103.9	102.3	99.61	98.35	96.54	96.26	94.96	96.0	93.5	90.4	88.1
salary of in-service staff/10 ⁸ Yuan	159.8	184.3	211.28	234.37	264.74	297.91	351.37	389.1	415.3	451.4	529.4
average salary / (Yuan/person)	13,969	16,776	19,573	22,143	25,633	28,816	34,283	37,692	41,453	46,569	55,870

Water project constructors. In 2015, there were 15 general construction contractors awarded highest qualification for water resources and hydropower project construction; 215 general construction contractors awarded grade-I qualification. There were 17,538 registered constructors awarded grade-I qualification.

Appendix: Main Index of National Water Resources Development (2010 – 2015)

Name of index	Unit	2010	2011	2012	2013	2014	2015
1. Irrigated area	10 ³ ha	66352	67743	67780	69481	70652	72061
2. Farmland irrigated area	10 ³ ha	60348	61682	62491	63473	64540	65873
Newly-increased in 2015	10 ³ ha	1722	2130	2151	1552	1648	1798
3. Water-saving irrigated area	10 ³ ha	27314	29179	31217	27109	29019	31060
4. Irrigation districts over 10,000 mu	Unit	5795	5824	7756	7709	7709	7773
Irrigation districts over 300,000 mu	Unit	349	348	456	456	456	456
Farmland irrigated areas in irrigation districts over 10,000 mu	10 ³ ha	29415	29748	30087	30216	30256	32302
Farmland irrigated areas in irrigation areas over 300,000 mu	10 ³ ha	15658	15786	11260	11252	11251	17686
5. Rural population accessible to safe drinking water	10 ⁴ people	6717	6398	7294	6343	6600	6709
6. Flooded or waterlogging area under control	10 ³ ha	21692	21722	21857	21943	22369	22713
7. Controlled or improved eroded area	10 ⁴ km ²	106.8	109.7	103.0	106.9	111.6	115.5
8. Reservoirs	Unit	87873	88605	97543	97721	97735	97988
Large-sized	Unit	552	567	683	687	697	707
Medium-sized	Unit	3269	3346	3758	3774	3799	3844
Total storage capacity	10 ⁸ m ³	7162	7201	8255	8298	8394	8581
Large-sized	10 ⁸ m ³	5594	5602	6493	6529	6617	6812
Medium-sized	10 ⁸ m ³	930	954	1064	1070	1075	1068
9. Total water supply capacity of water projects in a year	10 ⁸ m ³	6022	6107	6142	6183	6095	6103
10. Length of dikes	10 ⁴ km	29.4	30.0	27.2	27.7	28.4	29.1
Cultivated land under protection	10 ³ ha	46831	45418	42597	42573	42794	40844
Population under protection	10 ⁴ people	59853	59697	56566	57138	58584	58608
11. Water gates	Unit	43300	44306	97256	98192	98686	103964

Continued

Name of index	Unit	2010	2011	2012	2013	2014	2015
Large-sized	Unit	567	599	862	870	875	888
12. Total installed capacity at the end of 2015	10 ⁴ kW	21157	23007	24881	28026	30183	31937
Power generation in 2015	10 ⁸ kWh	6813	6507	8657	9304	10661	11143
13. Installed capacity of rural hydropower at the end of 2015	10 ⁴ kW	5924.0	6212.3	6568.6	7118.6	7322.1	7583.0
Power generation of 2015	10 ⁸ kWh	2044	1757	2173	2233	2281	2351
14. Completed investment of water project in 2015	10 ⁸ yuan	2319.9	3086.0	3964.2	3757.6	4083.1	5452.2
Divided by different sources							
(1) Budget	10 ⁸ yuan	918.1	898.8	1291.5	1136.8	1282.1	1549.7
(2) Special fund of budget	10 ⁸ yuan	94.8	29.2	25.4	12.7	2.4	14.2
(3) Special subject finance	10 ⁸ yuan	-	564.8	1004.2	937.5	1159.3	1892.1
(4) Water construction fund	10 ⁸ yuan	215.2	79.6	120.0	108.1	132.4	142.1
(5) Construction funds of key water conservancy project	10 ⁸ yuan	-	437.8	434.9	425.0	136.8	80.4
(6) Land sale revenue	10 ⁸ yuan	-	12.1	25.8	30.6	87.1	85.1
(7) Water resources fee	10 ⁸ yuan	-	18.2	21.5	38.5	57.5	67.7
(8) Domestic loan	10 ⁸ yuan	337.4	270.3	265.6	172.7	299.6	338.6
(9) Foreign funds	10 ⁸ yuan	1.3	4.4	4.1	8.6	4.3	7.6
(10) Self-raising funds	10 ⁸ yuan	316.2	406.8	350.4	360.7	339.9	573.1
(11) Enterprises and private investment	10 ⁸ yuan	48.0	74.9	113.4	160.7	89.9	187.9
(12) Bonds	10 ⁸ yuan	2.5	3.9	5.2	1.7	1.7	0.4
(13) Other sources	10 ⁸ yuan	386.5	285.1	302.4	364.0	490.1	513.3
Divided by different purposes ;							
(1) Flood control project	10 ⁸ yuan	684.6	1018.3	1426.0	1335.8	1522.6	1930.3

Continued

Name of index	Unit	2010	2011	2012	2013	2014	2015
(2) Water resources project	10 ⁸ yuan	1070.5	1284.1	1911.6	1733.1	1852.2	2708.3
(3) Soil and water conservation and ecological recovery	10 ⁸ yuan	85.9	95.4	118.1	102.9	141.3	192.9
(4) Hydropower projects	10 ⁸ yuan	105.4	109.0	117.2	164.4	216.9	152.1
(5) Capacity building	10 ⁸ yuan	19.6	40.2	59.6	52.5	40.9	29.2
(6) Early-stage work	10 ⁸ yuan	24.9	42.0	40.7	40.7	65.1	101.9
(7) Others	10 ⁸ yuan	329.1	496.9	291.1	328.2	244.2	337.5

Notes:

1. The data in this bulletin do not include those of Hong Kong, Macao and Taiwan.
2. Irrigated area in 2013 is integrated with data of first national survey on water resources. Other key indicators for water development and statistical data in 2012 is also integrated with the data of first national survey on water resources. Among which, the length of embankment is further clarified as grade-V or above after the data is integrated with that of first national survey on water resources.
3. The number of irrigation districts at 10,000 mu and its irrigated area is calculated based on the number of irrigation districts that have 10,000 mu of effective irrigated area or above in 2011. However, the statistics in 2012 is based on designed irrigated area that reached or upper to 10,000 mu. Correction is made to the irrigated areas of irrigation districts over 300,000 mu in 2015.
4. Statistics of rural hydropower refer to the hydropower stations with an installed capacity of 50,000 kW or lower 50,000 kW. Among which the national installed capacity of hydropower and its annual power generation by the end of 2015 are sourced from Statistics of China Power Industry issued by China Electricity Council.