

2012 年

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# 全国水利发展统计公报

2012 Statistic Bulletin  
on China Water Activities

中华人民共和国水利部 编

Ministry of Water Resources, People's Republic of China



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# 2012 STATISTIC BULLETIN ON CHINA

## WATER ACTIVITIES

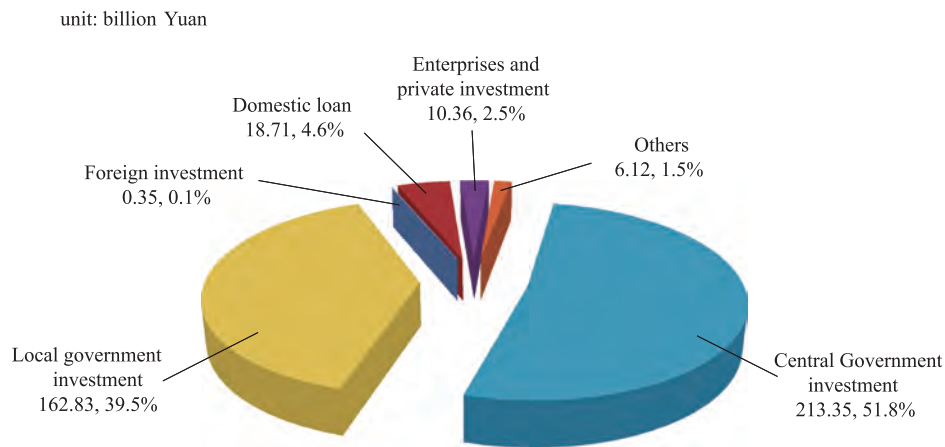
Ministry of Water Resources, People's Republic of China

In the year of 2012, the Communist Party of China (CPC) held the 18th national congress successfully, and a remarkable achievement had been obtained in all aspects of the country. This year, water management and development has embarked on a new stage, moreover water reform and development has produced an effective result. The water departments at all levels have fully implemented the decisions made by the Central Committee of CPC and the State Council to benefit people with water, conducted solid work for a glorious future with united efforts, forged ahead with determination, pioneering and innovative spirit. All of these have provided great support to the realization of “nine consecutive growth” of grain production as well as healthy and continuous development of economy and social harmony in China. As a result, water sector kept a momentum of better and fast development.

### I. Investment in Fixed Assets

The total investment in fixed assets from the water sector was up to 411.72 billion Yuan in 2012, a 23.0% increase comparing to the year of 2011. Divided by sources, 213.35 billion Yuan was financed by the Central Government, 36.7% increase, among which 162.30 billion Yuan from MWR, 46.70 billion Yuan from the special funds of South-North Water Diversion Project, 4.35 billion Yuan from other departments; 162.83 billion Yuan financed by local governments, 14.1% increase; 0.35 billion Yuan of foreign investment, 43.9% decrease; 18.71 billion Yuan of domestic loans, 17.3% decrease; 10.36 billion Yuan from enterprises and private sector, 52.9% increase; and 6.12 billion Yuan from other sources, 0.6% increase.

## Total fixed assets investment plan of water sector



A total of 162.30 billion Yuan came from funds allocation of Central Government in 2012, among which 89.106 billion Yuan from central government budget, 2.75 billion Yuan from Water Construction Funds and 70.444 billion Yuan from Special Funding of Central Government Budget. Divided by the types of projects: 70.625 billion Yuan for flood control, taking 43.53%; 81.293 billion Yuan for water resources project, taking 50.09%; 6.266 billion Yuan for soil and water conservation and ecological improvement, taking 3.86%; and 4.089 billion Yuan for special projects, taking 2.52%.

A total of 20,501 water projects were under construction in 2012, with a total investment of 1370.31 billion Yuan, with an increase of 16.4% comparing to that of the year before. The projects with Central Government finance were 7,839 with an increase of 54.1% comparing to the year before. The total funds used by projects under construction reached 801.70 billion Yuan and increased 23.6% comparing to the year before. There were 13,364 newly-constructed projects in 2012, with an increase of 30.0% and newly-added investment was 334.8 billion Yuan with a decrease of 6.8%.

Completed investment of water project in 2012 amounted to 396.42 billion Yuan, with an increase of 87.82 billion Yuan or 28.5% increase. In which, 273.65 billion Yuan put into construction project with a increase of 30.1%; 23.78 billion Yuan for installation with an increase of 95.4%; 17.81 billion Yuan for purchase of machinery, electric equipment and instruments, with an increase of 54.6%; and 81.18 billion Yuan for other purposes (including compensation of resettlement and land acquisition), with an increase of 8.8%.

	2007 (billion Yuan)	2008 (billion Yuan)	2009 (billion Yuan)	2010 (billion Yuan)	2011 (billion Yuan)	2012 (billion Yuan)	increase (%)
Yearly Completed	94.49	108.82	189.40	231.99	308.60	396.42	28.5
Construction project	67.25	78.15	129.72	152.49	210.32	273.65	30.1
Installation project	4.65	6.74	11.34	10.96	12.17	23.78	95.4
Procurement of instruments and equipment	5.68	6.00	12.50	12.45	11.52	17.81	54.6
Others (including compensation for resettlement and land expropriation)	16.91	17.93	35.84	56.09	74.59	81.18	8.8

In the total completed investment, 142.60 billion Yuan was allocated to the construction of flood control projects, 191.16 billion Yuan for the construction of water resources projects, 11.81 billion Yuan for soil and water conservation and ecological restoration, and 50.86 billion Yuan for special projects, such as hydropower development and capacity building.

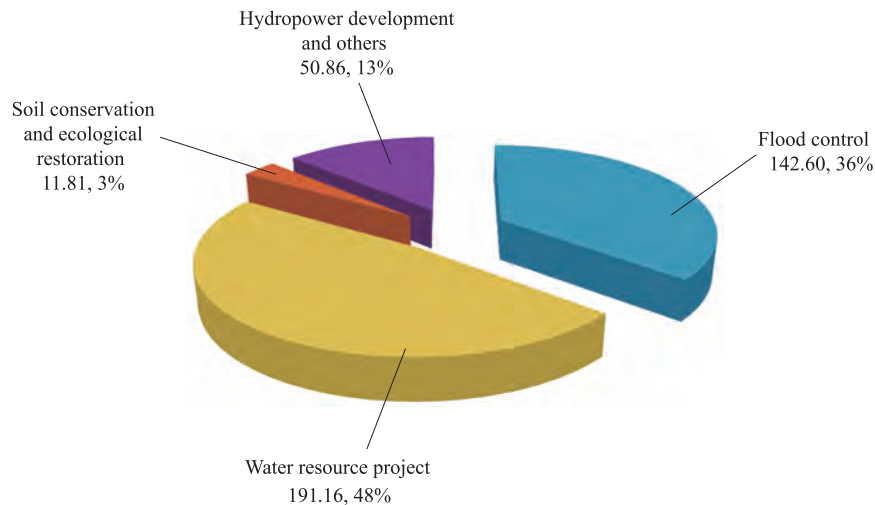
The completed investment for seven major river basins reached 336.39 billion Yuan, of which 60.04 billion Yuan was invested in river basins in the southeast,

southwest and northwest of China. Moreover, completed investments in eastern, northeast, middle and western regions were 115.40 billion Yuan, 29.39 billion Yuan, 123.72 billion Yuan and 127.92 billion Yuan respectively, accounting 29.1%, 7.4%, 31.2%, and 32.3% of the total.

Of this total completed investment, the Central Government contributed 66.54 billion Yuan, and local governments contributed 329.88 billion Yuan. Large- and medium-sized projects completed investment of 116.95 billion Yuan; small-sized and other projects completed 279.47 billion Yuan; newly-constructed project completed 255.37 billion Yuan; and reconstruction and expansion completed 141.05 billion Yuan.

#### Completed investment of projects in 2012

unit: billion Yuan

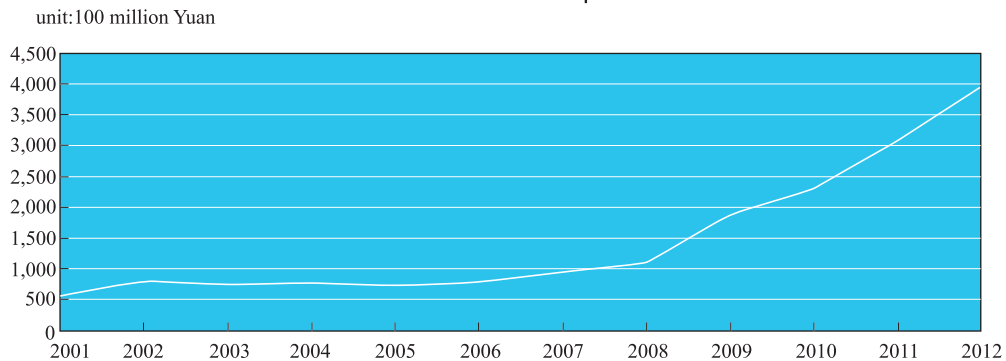


The projects that has partially put into operation were 708. The projects put into full operation were 10,282 with a newly increased fixed asset of 137.13 billion Yuan. The newly-added fixed assets totaled 275.66 billion Yuan in 2012 and the rate of

investment transferred into fixed assets was 69.5% . By the end of 2012, the accumulated investment in projects under construction was 890.60 billion Yuan, and the completion rate was 65.0% , a 6.5% increase over 2011. The newly increased fixed assets of projects under-construction had a value of 577.53 billion Yuan, and the rate of investment transferred into fixed assets was 64.8% , an increase of 3.2% comparing to 2011.

The civil works completed of earth, stone and concrete structures in 2012 were 3.44 billion m<sup>3</sup> , 470 million m<sup>3</sup> , and 70 million m<sup>3</sup> respectively. By the end of 2012, the ratio of complete quantity of earthwork, stonework, concrete of the under-construction projects were 71.9% , 57.7% , and 65.6% respectively.

Completed of Fixed Assets Investment



## II. Key Water Projects Construction

**Harness of large rivers and lakes.** There were 1282 river harness projects under construction that had spent 110.53 billion Yuan, accounting for 53.0% of the total completed investment. There were 12,446 km of river channels trained in 2012, and 9,904 km of which completed. According to the guidance of the State Council issued in the 2010 Working Conference for Huaihe River Harness and the Guidelines for

Recent Activities of Furthering Huaihe River Harness, the early-stage preparation of 38 project for furthering Huaihe River harness made new progress. National Development and Reform Commission approved two projects for implementation, namely Improvement of lowland in major plain in the Huaihe River Basin and training of Huaihe River Channel of Entering into the Yangtze River. The other projects, including Diverting Water from Huaihe River to Yihe River, Strengthening of Embankment of Hongze Lake and relocation of people lived in the retention basin in the Huaihe River Basin and shore areas of the mainstream of the Huaihe River, had been accelerated. The construction of river training project were under going smoothly, including short-term flood control for lower reaches of the Yellow River, Yellow River Ningxia-Inner Mongolia Section, Songhua River Mainstream, Nenjiang River Mainstream, Liao River Mainstream, Taihu Basin Comprehensive Regulation, Xijiang River Mainstream in Guangxi Province, Major Embankment Construction in Guangdong and Duliujian Flood Relief Channel in Tianjin.

**Reservoir projects.** There were 339 reservoir projects under construction in 2012, with an accumulative investment of 138.77 billion Yuan, accounting for 63.5% of the total completed investment. Key reservoir projects of Shuangfengsi in Hebei, Centianhe in Hunan and Jinfoshan in Chongqing were initiated for construction. The other projects fastened the speed of construction, such as those continued projects of Yellow River Haibowan, Jinling in Liaoning, Xiajiang in Jiangxi, Hekoucun in Henan, Water Diversion to Lijiang River in Guangxi, Hongling in Hainan, Tingzikou in Sichuan, Xiaozhongdian in Yunnan, Qianzhong in Guizhou, and Kensiwate in Xinjiang Production Construction Corps. There were 6,289 hazard venerable reservoirs completing repair or reinforcement, with an accumulated investment of 45.06 billion Yuan, accounting for 80.0% of the total completed investment. The Central Government spending for reinforcement of large and medium reservoirs as well as some small reservoirs of great significance reached to 23.30 billion Yuan, and 3,016 reservoirs completed reinforcement.



**Water allocation projects.** The yearly investment for water allocation projects reached to 264.50 billion Yuan. The completed investment in these projects had accumulated to 193.74 billion Yuan, accounting for 73.2% of the total completed investment. Project initiated included 147 designed units out of phase-I of eastern and middle routes of South-to-North Water Diversion Project, with a total investment of 223.27 billion Yuan. The completed investment of this project accumulated to 202.92 billion Yuan, of which the completed investment in 2012 was 65.29 billion Yuan. Continued projects, including Diverting River from Songhua River to Jilin, Wuxikou in Jiangxi, Drought Relief in Central Part of Guangxi, Xiaojingou in Sichuan, Water Diversion from Niulanjiang River to Dianchi, Phase-I of Water Diversion from Taohe River in Central Part of Gansu, and Drought Relief in Central Part of Ningxia, all accelerated pace of construction.

**Irrigation, drainage and rural water supply.** The under-constructed projects for providing safe drinking water attracted 80.50 billion Yuan of investment in the whole year, with an accumulated investment of 66.24 billion Yuan. The newly increased capacity helped 72.94 million people access to safe drinking water. By the end of 2012, the rural population with safe drinking water increased to 750 million. The beneficial rural population who have centralized water supply made up a percentage of 67.90% of the total. The Central Government allocated 12.157 billion Yuan to complete rehabilitation of 244 large irrigation districts for water conservation and water saving, 13 newly-constructed irrigated districts in Sanjiang Plain, continuous construction of 116 medium irrigation districts for water saving, rehabilitation of 125 large irrigation and drainage pumping stations, 74 demonstration projects of water-saving irrigations and 48 pilot projects in pastureland. In addition, 20.308 billion Yuan from central government finance invested to small-scale farmland waterworks for irrigation and drainage and rural water supply. The newly-added effective irrigated area reached 2,151,000 ha; moreover, new-increased water-saving irrigated area reached 2,953,000 ha, Meanwhile, 200 million Yuan allocated to

schistosome prevention projects that conducted in the Yangtze River Basin.

**Rural hydropower and electrification.** A total of 500 million Yuan of investment from Central Government used by 365 rural hydropower and electrification projects in 26 provinces (autonomous regions or municipalities directly under the Central Government) and another 500 million Yuan for 130 Small Hydropower for Fuel Projects in 18 provinces and Xinjiang Production Construction Corps. Another 483 million Yuan released from the Central Government were used as subsidy to Hubei, Hunan and Chongqing for the construction of 546 pilot projects for efficiency improvement and increase of installed capacity in rural areas. The completed investment of rural hydropower station construction amounted to 23.8 billion Yuan; the newly increased hydropower stations were 600, with a total installed capacity of 3.40 million kW. The completed investment for rural electricity network in the whole country was 5.0 billion Yuan; the newly increased capacity of 110 kV substation or above was 3.05 million kVA; the newly increased capacity of 35 (66) kV substation was 0.98 million kVA; the capacity of distribution transformer was 2.57 million kVA. The newly increased 10 kV high pressure transmission line was 16,000 km and low pressure line was 34,000 km.

**Soil and water conservation.** A yearly investment of 5.466 billion Yuan had been arranged for soil and water conservation and ecological restoration project construction; the allocated funds for soil and water conservation and ecological restoration projects under construction reached 45.85 billion Yuan; the completed investment reached 28.22 billion Yuan. The newly-increased areas with soil conservation measures were up to 44,000 km<sup>2</sup>, of which the areas under National Major Project for Soil Conservation reached to 16,100 km<sup>2</sup>. The newly increased forest protected areas were up to 25,900 km<sup>2</sup> in 2012. There had been 3,400 small watersheds with comprehensive measures of soil and water conservation; 340 silt

retention dams built on the Loess Plateau; and 2100 landslides brought under control. The newly built terrace lands increased 524,000 ha. Check dams had silted a land area of 27,000 ha. Newly-created forestland for soil conservation reached 1,564,000 ha and grassland 406,000 ha. More than 900 counties had been listed as national major project counties for soil and water conservation. The pilot project construction for erosion control in slope farmland extended to 140 counties in 22 provinces. The completed area of slope for terraced field reached 267,000 ha.

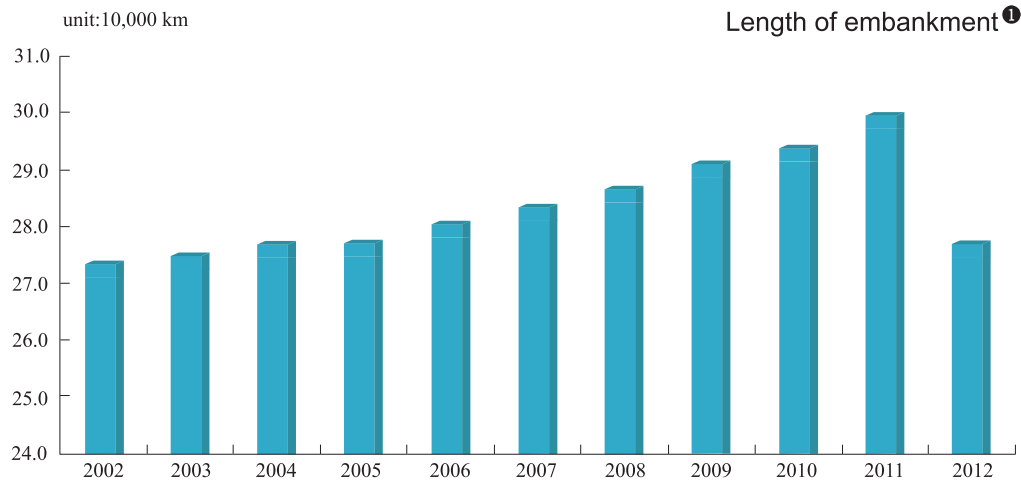
**Capacity building.** The completed investment for capacity building was 7.18 billion Yuan in 2012, of which 1.38 billion Yuan was spent on procurement of communication equipment for flood control, 3.07 billion Yuan for hydrological facilities, 200 million Yuan for scientific research and education facilities, 1.46 billion Yuan for early-stage work, and 1.06 billion Yuan for others.

### III. Key Water Structures

**Embankments and water gates.** Grade-V more than the length of river embankments from in the whole country reached to 277,300 km<sup>①</sup>. Of which, 177,500 km of embankment met the standard, with a percentage of 64.0% of the total up to standard. The length of embankment met the standard of Grade-I and Grade-II increased to 27,900 km, with a percentage of 73.60% of the total. These embankments can protect 570 million people and 43 million ha of cultivated land. The number of water gates with a flow of 5 m<sup>3</sup>/s and above reached to 97,256, of which 862 were large water gates, 7,962 flood diversion sluices, 17,229 drainage/return water sluices, 5,813 tidal barrages, 10,955 water diversion intakes and 55,297 controlling gates.

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

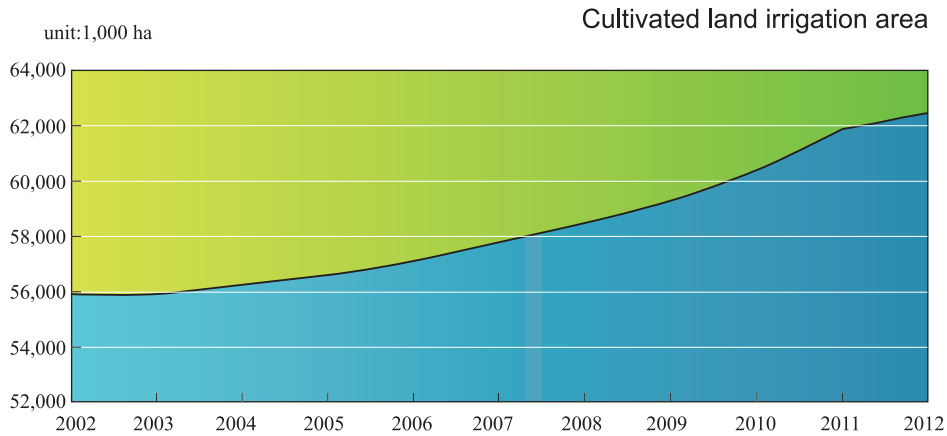


**Reservoirs and water complexes.** The total number of reservoir in China boosted to 97, 543, with a storage capacity of 825. 5 billion m<sup>3</sup>, of which 683 belong to large reservoirs with a total capacity of 649. 3 billion m<sup>3</sup>, accounting for 78. 7% of the total; 3, 758 medium-sized reservoirs with a total capacity of 106. 4 billion m<sup>3</sup>, accounting for 12. 9% of the total. The percentage of large and medium reservoirs up to the safety standard ranked 95. 2% of the total.

**Irrigation.** Irrigation districts with an area equal or above 2,000 mu added to 22, 318, with a total cultivated land irrigated area of 33. 898 million ha. In which, the irrigation districts equal or above 500, 000 mu were 177, with a total cultivated land irrigation area of 6. 242 million ha; the irrigation districts covering an area from 300, 000 to 500, 000 mu were 280, with a total cultivated land irrigation area of 5. 018 million ha. By the end of 2012, the total cultivated land irrigated area reached to 62. 491 million ha that accounted to 52. 1% of the total cultivated area. Water-saving

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

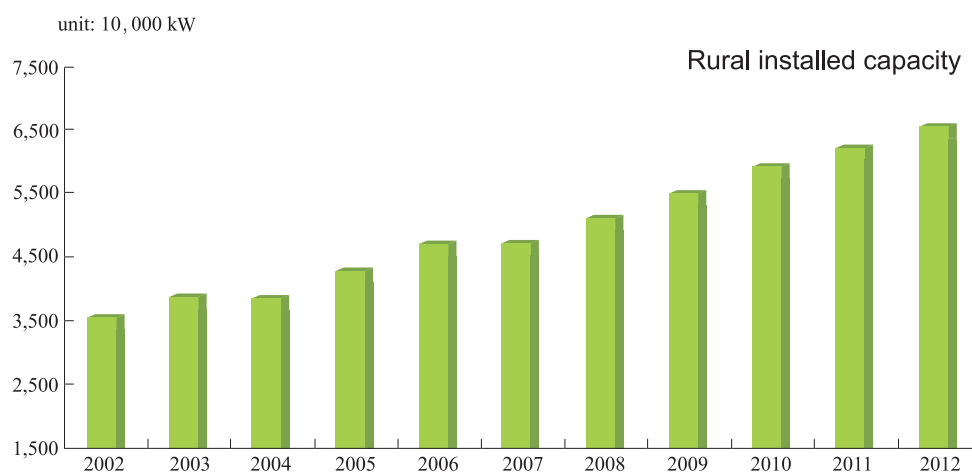
irrigated area reached to 31.217 million ha that applied with water-saving irrigation technologies, among which 12.823 million ha of land had lined canals, 7.526 million ha installed low-pressure pipes, 6.600 million ha equipped with sprinkler or drip or infiltration irrigation, 4.267 million ha had other water-saving methods.



**Tube wells and pumping stations.** A total of 4.543 million water supply tube wells were excavated in the whole country, with a daily water abstraction capacity equal or larger than 20 m<sup>3</sup> or an inner diameter larger than 200 mm. A total of 89,328 pumping stations that have an installed flow of 1 m<sup>3</sup>/s or installed voltage above 50 kW had been installed, among which 346 belong to larger pumping stations, 3,641 medium-size and 85,341 small-size pumping stations. The fixed electro-mechanical pumping stations increased to 434,000, with an installed capacity of 27.16 million kW. The installed capacity of movable equipment of irrigation and drainage or drip irrigation amounted to 25.63 million kW.

**Rural hydropower and electrification.** By the end of 2012, hydropower stations built in rural areas totaled 45,799, with an installed capacity of 65.686 million kW, accounting for 26.4% of the total in China. The annual power generation by these hydropower

stations reached to 217.3 billion kWh, accounting for 25.1% of the total power generation of the whole country. It enabled 560,000 people access to electricity.

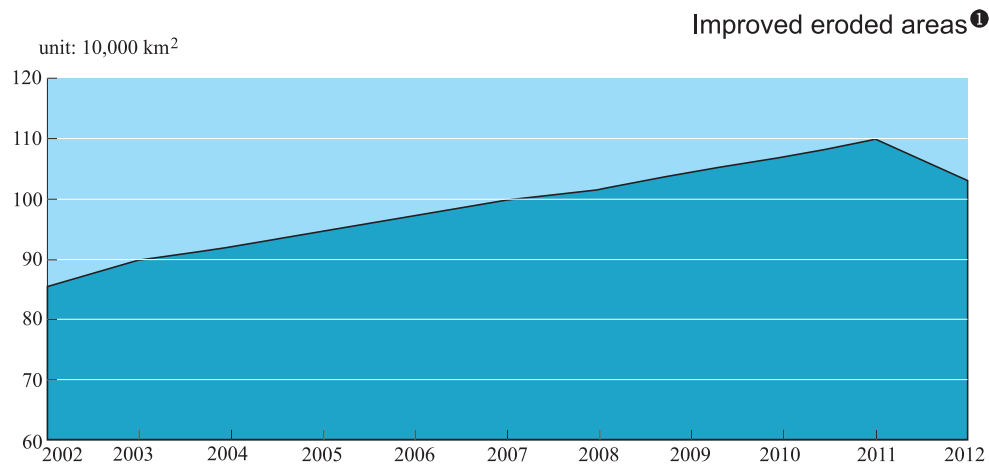


**Soil and water conservation.** In 2012, the restored eroded areas equaled to 1.0295 million km<sup>2</sup><sup>①</sup>; ecological restoration areas accumulated to 746,000 km<sup>2</sup>. A total of 301 ecologically-sound small watershed had been constructed. After the completion of Phase-II of National Soil and Water Conservation Network and Information System, there were 715 soil and water conservation monitoring points were built and ready for completion check and acceptance. Early stage work has been initiated for National Basic Information Platform for Soil and Water Conservation.

**Hydrology and informationization.** By the end of 2012, the number of hydrological stations of all kinds increased to 70,179 in the whole country, including 3,214 national basic hydrologic stations, 378 special hydrologic stations, 5,317 gauging stations, 35,637 precipitation stations, 10,030 water quality stations,

① The data of the restored eroded areas in 2012 were revised according to the data of First National Census for Water.

13,726 groundwater monitoring stations, 11 evaporation stations, 58 experimental stations, and 1808 soil moisture monitoring stations. China has built 16,494 telegram reporting stations and 1,039 hydrologic forecast stations. A total of 277 water environment monitoring centers (sub-center) put into operation that cover nearly all major rivers, lakes and reservoirs in China.



The water conservancy informatization which had opened a new era for an all round and multi-layer development. The PCs and servers of varied kinds that connected to the internet reached 71,069 and 3,053 respectively. The on store capacity of equipment installed in the water resources departments at or above the provincial level reached 1,384,704.1 GB. A total of 78,720 information gathering points were installed that may received all kinds of water information, among which 44,460 were automatic information gathering points. Database under routine operation reached 600, with a storage capacity of 261,899.5 GB. Thirty video conference systems were installed in river basin commissions or water resources departments that realize coverage of all organizations at a lower level. A total of 734 administrative

① The data of the restored eroded areas in 2012 were revised according to the data of First National Census for Water.

licensing systems were displaced on the websites of government agencies at all levels. Through internet, various kinds of administrative licenses, in a total number of 440, can be obtained. The business application system of all kinds operated by water resources departments at or above the provincial level may cover nearly all aspects of water administration and business.

#### IV. Utilization and Protection of Water Resources

According to preliminary statistics, the availability of water resources in 2012 totaled 2,952.69 billion  $\text{m}^3$ , 6.6% more than normal years and a 27.0% increase comparing to that the year before. Mean annual precipitation was 688.0 mm, 7.1% more than normal years and 18.2% more than the year before. By the end of 2012, total water storage of 583 large reservoirs reached 324.06 billion  $\text{m}^3$ , 25.64 billion  $\text{m}^3$  more compared with that of the year before; total water storage of 3,271 medium-size reservoirs increased to 41.56 billion  $\text{m}^3$ , 4.12 billion  $\text{m}^3$  more than that of the year before.

In 2012, the total water supplied by waterworks reached 613.12 billion  $\text{m}^3$ , while 80.8% of which came from abstraction of surface water, 18.5% from groundwater aquifer and 0.7% from other water sources. The total water consumption<sup>①</sup> reached to 613.12 billion  $\text{m}^3$ , of which domestic use amounted to 73.97 billion  $\text{m}^3$  (in which urban domestic water use took 74.3%) or 12.1% of the total; industrial use 138.07 billion  $\text{m}^3$  or 22.5% of the total; agricultural water use 390.25 billion  $\text{m}^3$  or 63.6% of the total and environmental flow of 10.83 billion  $\text{m}^3$  or 1.8% of the total. Comparing to the year 2010, domestic water use increased by 6.74 billion  $\text{m}^3$ ,

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① Relevant data of water supply and consumption in 2012 are from preliminary statistics. Comparing to that in 2010, water use of livestock was removed from domestic water use to agricultural water use.



industrial use decreased by 6.66 billion m<sup>3</sup>, agricultural water use increased by 11.99 billion m<sup>3</sup> and environmental flow decreased by 1.15 billion m<sup>3</sup>.

Water consumption per capita in 2012 was 454 m<sup>3</sup>. In average Water use of 10,000 Yuan GDP (at comparable price of 2010) was 130 m<sup>3</sup>, a 14% decrease comparing with that in 2010. Water use of industrial production value added per 10,000 Yuan (at comparable price of 2010) was 72 m<sup>3</sup>, 20% less comparing to that of the year 2010.

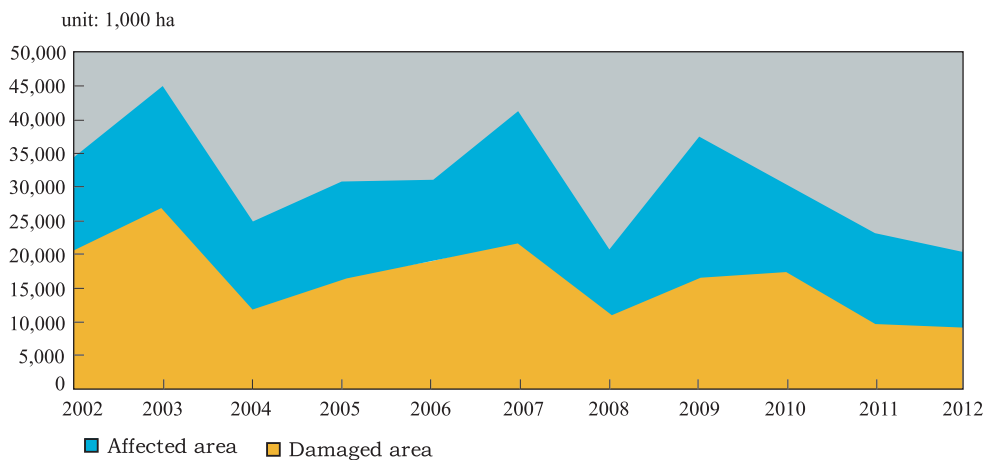
According to the result of water quality assessment on river sections of more than 201,000 km, rivers with better water quality that comply with or supper than class-III standard occupied 67.0% of the total.

## V. Flood Control and Drought Relief

Generally speaking, no extraordinary flood and waterlogging happened in 2012. Nevertheless, a total of 11.218 million ha of cultivated land were affected by floods, resulting in 5.871 million ha damaged, 120 million people relocated, 673 people dead, and 159 missing. A total of 590,000 houses were destroyed and 184 cities suffered from inundation. The disasters resulted in 267.5 billion Yuan of direct economic losses, among which the loss with water infrastructures reached 46.8 billion Yuan. The provinces or autonomous regions of Sichuan, Gansu, Hebei, Beijing, Inner Mongolia, Zhejiang, Shandong and Liaoning suffered heavily from these disasters. The death toll or the number of missing caused by mountain flood covered 75% of the total in 2012. Economic loss caused by typhoon equaled to 24% of the total direct economic loss of flood and waterlogging disasters.

Less severe drought occurred in 2012 in China. However, provinces of Yunnan and Hubei suffered from severe droughts. The farmland affected by droughts reached 9.333 million ha, of which 3.509 million ha damaged, with a direct economic losses of 53.3 billion Yuan. A total of 16.37 million urban and rural population and 8.48 million man-fed 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 2012, the funds allocated to flood control and drought relief amounted to 9.445 billion Yuan, among which 592 million spent on structural measures, 2.775 billion Yuan for extraordinary flood defense, 1.92 billion Yuan for extraordinary drought relief, 4.138 billion Yuan for mountain flood prevention and control and 20 million Yuan for emergency water diversion to ease the drought.

The year of 2012 saw a great victory in the battle of flood defense and drought relief. There were no break in major embankment and failure of large and medium dams. These embankments protected 4.413 million ha of cultivated land and 134 cities. The economic benefits of flood control and disaster reduction amounted to 89.2 billion Yuan. Safe drinking water was provided to 13.03 million people in rural and urban areas as well as 8.05 million big animals and livestock for solving

temporary problems of water shortage. The area with anti-drought measures reached 17.266 million ha that prevented a loss of 31.4 billion kg of grain.

## VI. Water Management and Reform

**Water resources planning and early-stage work.** There were 32 plans of varied kinds approved in 2012, among which 5 master plans approved by the State Council; and 27 plans approved by the Ministry of Water Resources (MWR). The Ministry of Water Resources continued to push forward the work of long and medium term planning for balancing national water supply and demand and facilitated. Preparation and revision of master plans of seven river basin commissions has made considerable progress. The approval of master plans of Yangtze River Basin and Liao River Basin was completed by the State Council. Master plans of the Yellow River, Huai River, Hai River, Peral River, Songhuajiang and Taihu has entering into consulting and reporting stage. National Plan for Water Resources Protection was initiated and its technical outlines passed the appraisal. A number of key water resources plans had been worked out, such as Master Plan for National Irrigation Development, National Plan for Erosion Control of Slope Farmland, 12<sup>th</sup> Five-Year Plan for Large and Medium Reservoir Construction and National Special Plan for Targeted Poverty Reduction. A total of 56 projects were delivered to NDRC for approval, with a total investment of 321.85 billion Yuan. Among which NDRC approved 37, with a total investment of 150.40 billion Yuan, including 9 project proposals with a total investment of 39.83 billion Yuan, 19 feasibility studies with a total investment of 42.49 billion Yuan and 9 preliminary designs with a total investment of 68.09 billion Yuan.

**Water legislation and administrative enforcement.** In 2012, the ministry approved/extended 1,462 administrative water permits, among which 70

qualification identifications for water resources assessment organizations; 1 water resources assessment reports of construction project; 434 qualification certificates of supervisors for water conservancy project construction; 116 qualification certificates of quality inspection of water conservancy project; 360 soil and water conservation plans of water development and construction projects; 24 pre-approvals of environmental impact assessment reports of water and hydropower project; 253 approvals of soil and water conservation plan of production and construction projects; 152 check and acceptance of soil and water conservation plans of construction projects; 15 qualification certificates of survey and assessment for hydrology and water resources; and 37 licenses of headstock gear utilization.

A total of 41 sand excavation zones were approved in the middle and lower reaches of the Yangtze planned. In 2012, there were 31 permits issued for allowing sand excavation business, with a total sand mining of 75.29 million ton. The sand mining boats that got licenses reached 259 in 2012. The investigated illegal cases totaled 54,842 and 47,569 or 86.74% of them resolved. The retrieved economic losses reached 185.70 million Yuan. A total of 5,410 water disputes resolved, and 99.87 million Yuan retrieved. In 2012, there were 10 administrative reconsideration cases received by the Ministry of Water Resources that all being settled.

**Water affairs management.** A total of 1,923 water affairs bureaus or water resources bureaus have been created at or above county level and assigned the responsibilities of water affairs management, which accounted for 78.9% of the total cities and counties. Among 1,469 established bureaus, 4 at provincial level, 7 at sub-provincial level, 212 at prefecture or city level, and 1,246 at county level. The utilities managed by water affairs bureaus own 3,785 water plants, 491,000 km of water supply pipes, with a daily water supply of 177.58 million m<sup>3</sup> and annual water

supply of 35.06 billion  $\text{m}^3$ . A total of 2,030 sewage treatment plants put into operation, with a total pipeline of 242,000 km long and daily treatment capacity of 87.86 million  $\text{m}^3$ . The annual sewage treatment reached to 23.13 billion  $\text{m}^3$  in total.

A total of 2,446 water enterprises or companies created under these water affair bureaus, with fixed assets equal to 182.98 billion Yuan, and annual income of 43.78 billion Yuan as well as a loss of 340 million Yuan. The total investment putting into water industry in urban area amounted to 113.77 billion Yuan. Water sources for cities and counties totaled 4,537, with an annual water supply capacity of 105.27 billion  $\text{m}^3$ . The amount of recycled water use in cities (counties) increased to 4.43 billion  $\text{m}^3$ ; while water supplied by unconventional sources despite of utilization of recycled water also added to 57.58 billion  $\text{m}^3$ . Water tariff of these water supply schemes ranged from 0.01 to 6.0 Yuan/ $\text{m}^3$ , among which water resources fees of surface water ranged from 0.002 to 2.0 Yuan/ $\text{m}^3$  and water resources fees of groundwater resources ranged from 0.01 to 10.0 Yuan/ $\text{m}^3$ .

**Reform in project construction and management.** Reform of national water project management system had completed and passed check and acceptance. Estimation of total managerial staff and operation and maintenance cost for all 12,240 water project management units had been completed, and 98.2% of these organizations completed division of its type of operation, i. e. either totally self managed business or operated with government subsidy. The two estimation costs of 18.09 billion Yuan had been covered, with a rate of 87%, among which managerial staff at 9.89 billion Yuan, accounting 91% of the total; O&M cost at 8.20 billion Yuan, accounting 83% of the total. More than 7,579 organizations completed reorganization by separating functions of management and maintenance of water utilities (include separation of managerial and maintenance functions within the organization), accounted for 61.9% of the total.

The total number of water and hydropower construction companies awarded Super General Construction Contractor remained as 10. A total of 195 companies were approved to be Class-I Professional Contractors. A total of 50,579 people registered as supervisor engineers for water project construction and 11,872 people received Class-I Registered Certificate of Constructor in specialty of water and hydropower project. Another 42 enterprises got Class-A qualification of supervisors for water and hydropower project construction in 2012, 70 got the Class-B qualification and 219 got the Class-C qualification. Another 10 enterprises got Class-A qualification of supervisors of soil and water conservation project construction in 2012, 33 got the Class-B qualification and 69 got the Class-C qualification. Another 5 enterprises obtained Class-A qualification of supervisors for electromechanical and metal equipment manufacture and 11 obtained Class-B qualification. A total of 21 enterprises got the qualification (no grading is defined) of supervisors for environment protection of water project construction. In 2012, another 22 enterprises became Class-A quality inspection organizations for geotechnical engineering approved; 27 won the Class-A quality inspection organizations for concrete structures; 8 won the Class-A quality inspection organizations for metal structures; 6 Class-A quality inspection organizations for mechanical and electronic equipment; and 17 won Class-A quality inspection organizations for measuring and gauging tools.

**Reform in rural water resources management.** The total number of Water User Associations (WUAs) established in the whole country reached to more than 78,000, and about 240 million mu of irrigated areas were under the operation of these associations that amounted to 25.9% of the total effective irrigated areas in China. The guidelines for implementing reform of management system of small waterworks in rural areas were promulgated. Implementation of property system reform covered more than 7 million small waterworks for farmland irrigation and drainage in rural areas, by means of auction, lease, contracting and shareholding cooperation etc.

**Soil and water conservation.** A total of 28, 000 Soil and Water Conservation Plans in water development projects examined and approved, of which 253 belong to large-scale construction projects developed by MWR and cover an area of 2, 970. 5 km<sup>2</sup>. A total of 5, 720 soil and water conservation projects completed check and acceptance. Capacity building was initiated for second group of 788 counties for soil and water conservation supervision and management. Rules for Implementation of National Agricultural Comprehensive Development and Soil Conservation Project came into force.

**Water pricing reform.** In 2012, water supply for agricultural irrigation was at a cost of 0. 2589 Yuan/m<sup>3</sup>, among which the estimated cost of water supplied by state-owned enterprises was 0. 1751 Yuan/m<sup>3</sup> and cost of water supply at the end-canal system was 0. 0838 Yuan/m<sup>3</sup>. Agricultural water charge was 0. 0919 Yuan/m<sup>3</sup>, about 35. 5% of the cost, among which water charge by state-owned enterprise was 0. 0621 Yuan/m<sup>3</sup> and cost at the end canal system was 0. 0298 Yuan/m<sup>3</sup>. The average collection rate of agricultural water charge was 75. 97%. The actual collection rate in demonstration areas reached about 95% in average, thanks to the pilot project construction in 125 counties in 20 provinces/autonomous regions.

**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 ) . Water resources department shall take whole responsibility for integrating water resources management in 14 provinces. 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 expanded the coverage of safety supervision to over 95% .

**Production safety supervision.** The campaign of “Safety Production Year” has been further implemented. A total of 16,317 “Rectification Actions” were taken against illegal production and operation, as well as construction activities, with 14,025 illegal cases investigated and prosecuted. A total of 10994 safety production inspection teams were organized to investigate more than 61,703 production and operation units. Potential safety hazard of 26,670 cases and 748 high risk cases were checked out and corrected. Funds putting into removal of hidden danger and risk accumulated to 2.956 billion Yuan. Generally speaking, safe production was realized in the water sector as no significant accident happened in 2012, except 15 production accidents and 22 people dead. There were 102 inspection teams that completed inspection and recheck of 293 construction projects, as well as 4,747 check of projects. The inspected projects were within 8 categories: major countries for small on-farm waterworks construction; hydrological monitoring system of medium and small rivers; non-structural measures for mountain flood disaster prevention in counties; pilot project for comprehensive control of soil erosion on slope farmland; medium and small river harness; rehabilitation of large irrigation drainage pumping stations; water complex and water source projects; reinforcement of key small hazard venerable reservoirs. There were 1,295 various issues founded, and 178 notification were released. Self-inspection of 1,117 projects was conducted by provincial water department and 7,567 notification were released for correction of violating activities.

**Reservoir resettlement.** The resettled population of 11 large dam projects totaled approximately 50,000 in 2012, including dams of Tingzikou, Xiajiang, Jinling, Qingshan, Haibowan, Lijiang, Qianzhong, Pangduo, Hongling, Xiaozhongdian and Longkou that distributed in 11 provinces (autonomous regions or municipalities). There were 62 relocation sites built for about 40,000 relocated rural residents. The constructed houses for resettlement extended to 1 million km<sup>2</sup> that occupied 18,000 mu of land. Roughly 20,000 relocated people were covered



by the post-relocation support project.

**Water science and technology.** A total of 500 million Yuan had been allocated to science and technology projects, including 4 National Key Technology R&D Program being listed, 66 public-interest scientific research projects of the water sector, and 56 projects in “948 Plans”, National Agricultural Science and Technology Achievements Transformation Fund Programs and MWR Key Technological Achievements Extension Plans. 5 water technological achievements won the National Sci-Tech Advance Award. By the end of 2012, there had 12 national level or ministerial level labs being formed, and 12 technical research centers established. Special funds for procurement and repairing of equipment of national scientific institutions amounted to 113.55 million Yuan. A total of 713 sectoral technical norms and standards are still functioning. A total of 319 technical standard of water sector are under review (revision) . There were 96 technical norms and standards listed in the Table of 2008 Standard System of Technical Norms and Specifications.

**International cooperation.** A total of 46 multilateral cooperation and exchange activities were successfully conducted, with 5 bilateral cooperation agreements and 4 multilateral cooperation agreement signed. Under the fixed mechanism for bilateral exchange of government agencies, 7 meeting were organized and held. Two projects with loans from international financial organizations, namely World Bank financed Changjiang and Pearl River Watershed Rehabilitation Project and ADB financed Songhuajiang Flood Management Project, with a total borrowing of 250 million US dollars. Key plain and low-lying land harness project in Huai River Basin was formally initiated, with a World Bank loan of 200 million US dollars. There were 9 grant projects under implementation, with a total grant of 44 million US dollars.

## VII. Current Status of Water Sector

**Employees and salaries.** The employees of water sector were totaled 1.07 million, a 0.5% increase comparing to that the year before. Of which the employees with long-term post amounted to 1.034 million, a 0.9% increase. In the employees with long-term post, the staff working in the agencies directly under the Ministry of Water Resources was 74,000, a 1.3% decrease over the year before; the staff working in local agencies was 0.96 million, a 1.1% increase. The total salary for the employees with long-term post in the whole country was 38.91 billion Yuan in 2012, a 10.7% increase comparing to that of 2011. The average salary per employee with long-term post was 37,692 Yuan, a 9.9% increase over 2011. Of which the per capita salary of agencies directly under MWR was 78,695 Yuan, a 6.9% increase, and the average salary per employee with long-term post of local agencies was 34,512 Yuan, a 10.7% increase.

### Employees and Salaries

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
number of in service staff (10 <sup>4</sup> persons)	128.9	122.9	118.2	110.5	109.2	106.8	105.6	103.7	106.6	102.5	103.4
of which, staff of MWR and agencies under MWR (10 <sup>4</sup> persons)	6.4	6.4	6.4	6.6	6.8	7.2	7.2	7.2	7.4	7.5	7.4
Local agencies (10 <sup>4</sup> persons)	122.5	116.5	111.8	103.9	102.3	99.6	98.4	96.5	96.3	95.0	96.0
salary of in-service staff (10 <sup>8</sup> Yuan)	136.3	140.6	157.1	159.8	184.3	211.3	234.4	264.7	297.9	351.4	389.1
average salary (Yuan/ person)	10,652	11,443	13,054	13,969	16,776	19,573	22,143	25,633	28,816	34,283	37,692

**Reconnaissance and design.** The number of reconnaissance and design institutions obtained Class-A qualification increased to 82 in 2012, and institutions awarded class-B qualification increased to 308 and institutions awarded Class-C qualification added up to 690, with a total staff of more than 80,000.

**Water scenic spots.** There number of water scenic spots approved at national level accumulated to 518, among which 274 were reservoir recreation areas, 96 natural rivers and lakes, 71 urban rivers and lakes, 34 wetlands, 22 irrigation districts, and 21 water and soil conservation areas.

**Notes:**

1. The data in this bulletin do not include those of Hong Kong, Macao and Taiwan.
2. The main index of national water resources development in 2012 has integrated with the data of First National Census for Water. But relevant data of water supply and consumption in 2012 are from preliminary statistics.
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 was based on designed irrigated area that reached or upper to 10,000 mu.
4. Statistics of rural hydropower refers to the hydropower stations with an installed capacity of 50,000 kW or lower than 50,000 kW.

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