中国水利普查

CHINA CENSUS FOR WATER

第一次全国水利普查公报

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中华人民共和国水利部

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根据国务院决定，2010—2012 年开展第一次全国水利普查，普查的标准时点为 2011 年 12 月 31 日，普查时期为 2011 年度。普查范围为中华人民共和国境内（未含香港特别行政区、澳门特别行政区和台湾地区）河流湖泊、水利工程、重点经济社会取用水户以及水利单位等。普查主要内容包括河流湖泊基本情况、水利工程基本情况、经济社会用水情况、河流湖泊治理保护情况、水土保持情况、水利行业能力建设情况。本次普查按照“在地原则”，以县级行政区划为基本工作单元，采取全面调查、抽样调查、典型调查和重点调查等多种调查形式进行。

国务院第一次全国水利普查领导小组办公室采用二阶段分层抽样法，在全国 31 个省级水利普查区内进行了事后质量抽查。抽查结果显示，水利普查对象综合漏报率为 0.11‰，指标汇总数据的平均误差率为 6.20‰，数据质量符合预期目标。

经国务院批准，现将水利普查主要成果公布如下。

一、河湖基本情况

河流。共有流域面积 50 平方公里及以上河流 45203 条，总长度为 150.85 万公里；流域面积 100 平方公里及以上河流 22909 条，总长度为 111.46 万公里；流域面积 1000 平方公里及以上河流 2221 条，总长度为 38.65 万公里；流域面积 10000 平方公里及以上河流 228 条，总长度为 13.25 万公里（详见表 1）。

湖泊。常年水面面积 1 平方公里及以上湖泊 2865 个，水面总面积 7.80 万平方公里（不含跨国界湖泊境外面积）（详见表 2）。其中：淡水湖 1594 个，咸水湖 945 个，盐湖 166 个，其他 160 个。

表 1　河流分流域数量汇总表

流域面积 / 流域（区域）	50 平方公里及以上（条）	100 平方公里及以上（条）	1000 平方公里及以上（条）	10000 平方公里及以上（条）
合计	**45203**	**22909**	**2221**	**228**
黑龙江	5110	2428	224	36
辽河	1457	791	87	13
海河	2214	892	59	8
黄河流域	4157	2061	199	17
淮河	2483	1266	86	7
长江流域	10741	5276	464	45
浙闽诸河	1301	694	53	7
珠江	3345	1685	169	12
西南西北外流区诸河	5150	2467	267	30
内流区诸河	9245	5349	613	53

表 2　湖泊分流域数量汇总表

湖泊面积 / 流域（区域）	1 平方公里及以上（个）	10 平方公里及以上（个）	100 平方公里及以上（个）	1000 平方公里及以上（个）
合计	**2865**	**696**	**129**	**10**
黑龙江	496	68	7	2
辽河	58	1	0	0
海河	9	3	1	0
黄河流域	144	23	3	0

续表

湖泊面积 / 流域（区域）	1 平方公里及以上（个）	10 平方公里及以上（个）	100 平方公里及以上（个）	1000 平方公里及以上（个）
淮河	68	27	8	2
长江流域	805	142	21	3
浙闽诸河	9	0	0	0
珠江	18	7	1	0
西南西北外流区诸河	206	33	8	0
内流区诸河	1052	392	80	3

二、水利工程基本情况

水库。共有水库 98002 座，总库容 9323.12 亿立方米（详见表 3）。其中：已建水库 97246 座，总库容 8104.10 亿立方米；在建水库 756 座，总库容 1219.02 亿立方米。

表 3　不同规模水库数量和总库容汇总表

水库规模	合计	大型			中型	小型		
		小计	大(1)	大(2)		小计	小(1)	小(2)
数量（座）	**98002**	756	127	629	3938	93308	17949	75359
总库容（亿立方米）	**9323.12**	7499.85	5665.07	1834.78	1119.76	703.51	496.38	207.13

水电站。共有水电站 46758 座，装机容量 3.33 亿千瓦（详见表 4）。其中：在规模以上水电站中，已建水电站 20866 座，装机容量 2.17 亿千瓦；在建水电站 1324 座，装机容量 1.10 亿千瓦。

表 4　不同规模水电站数量和装机容量汇总表

水电站规模		数量（座）	装机容量（万千瓦）
合计		**46758**	**33288.93**
规模以上（装机容量≥500 千瓦）	小计	22190	32729.79
	大（1）型	56	15485.50
	大（2）型	86	5178.46
	中型	477	5242.00
	小（1）型	1684	3461.38
	小（2）型	19887	3362.45
规模以下（装机容量＜500 千瓦）		24568	559.14

水闸。过闸流量 1 立方米每秒及以上水闸 268476 座，橡胶坝 2685 座（详见表 5）。其中：在规模以上水闸中，已建水闸 96226 座，在建水闸 793 座；分（泄）洪闸 7919 座，引（进）水闸 10970 座，节制闸 55137 座，排（退）水闸 17198 座，挡潮闸 5795 座。

表 5　不同规模水闸数量汇总表

水闸规模		数量（座）	比例（%）
合计		**268476**	
规模以上（过闸流量≥5 立方米每秒）	小计	97019	100
	大型	860	0.9
	中型	6332	6.5
	小型	89827	92.6
规模以下（1 立方米每秒≤过闸流量＜5 立方米每秒）		171457	

堤防。堤防总长度为 413679 公里（详见表 6）。5 级及以上堤防长度为 275495 公里，其中：已建堤防长度为 267532 公里，在建堤防长度为 7963 公里。

表 6　不同级别堤防长度汇总表

堤防级别	合 计	1 级	2 级	3 级	4 级	5 级	5 级以下
长度（公里）	**413679**	10739	27286	32669	95523	109278	138184
比例（%）	**100**	2.6	6.6	7.9	23.1	26.4	33.4

泵站。共有泵站 424451 座（详见表 7）。其中：在规模以上泵站中，已建泵站 88365 座，在建泵站 698 座。

表 7　不同规模泵站数量汇总表

泵站规模		数量（座）
合计		**424451**
规模以上（装机流量≥1 立方米每秒或装机功率≥50 千瓦）	小计	89063
	大型	299
	中型	3714
	小型	85050
规模以下（装机流量＜1 立方米每秒且装机功率＜50 千瓦）		335388

农村供水。共有农村供水工程 5887.46 万处，其中：集中式供水工程 92.25 万处，分散式供水工程 5795.21 万处。农村供水工程总受益人口 8.12 亿人，其中：集中式供水工程受益人口 5.49 亿人，分散式供水工程受益人口 2.63 亿人。

塘坝窖池。共有塘坝 456.51 万处，总容积 303.17 亿立方米；窖池 689.31 万处，总容积 2.52 亿立方米。

灌溉面积。共有灌溉面积 10.02 亿亩，其中：耕地灌溉面积 9.22 亿亩，园林草地等非耕地灌溉面积 0.80 亿亩。

灌区建设。共有设计灌溉面积 30 万亩及以上的灌区 456 处，灌溉面积 2.80 亿亩；

设计灌溉面积1万（含）～30万亩的灌区7316处，灌溉面积2.23亿亩；50（含）～1万亩的灌区205.82万处，灌溉面积3.42亿亩。

地下水取水井。共有地下水取水井9749万眼，地下水取水量共1084亿立方米（详见表8）。

表8　不同规模地下水取水井数量和取水量汇总表

取水井类型			数量（万眼）	取水量（亿立方米）
合计			**9749**	**1084**
机电井		小计	5383	1040
	灌溉	小计	848	753
		井管内径≥200毫米	407	613
		井管内径＜200毫米	441	140
	供水	小计	4535	287
		日取水量≥20立方米	39	217
		日取水量＜20立方米	4496	70
人力井			4366	44

地下水水源地。共有地下水水源地1847处（详见表9）。

表9　不同规模地下水水源地数量汇总表

地下水水源地规模	数量（个）	比例（%）
合计	**1847**	**100**
小型水源地（0.5万立方米≤日取水量＜1万立方米）	824	44.6
中型水源地（1万立方米≤日取水量＜5万立方米）	870	47.1
大型水源地（5万立方米≤日取水量＜15万立方米）	137	7.4
特大型水源地（15万立方米≤日取水量）	16	0.9

三、经济社会用水情况

经济社会年度用水量为 6213.2 亿立方米，其中：居民生活用水 473.6 亿立方米，农业用水 4168.2 亿立方米，工业用水 1203.0 亿立方米，建筑业用水 19.9 亿立方米，第三产业用水 242.1 亿立方米，生态环境用水 106.4 亿立方米。

四、河湖开发治理情况

河湖取水口。共有河湖取水口 638908 个（详见表 10）。

表 10　不同规模河湖取水口数量汇总表

河湖取水口规模	数量（个）	比例（%）
合计	**638908**	**100**
规模以上（农业取水流量≥0.20 立方米每秒，其他用途年取水量≥15 万立方米）	121848	19.1
规模以下（农业取水流量<0.20 立方米每秒，其他用途年取水量<15 万立方米）	517060	80.9

地表水水源地。共有地表水水源地 11662 处（详见表 11）。

表 11　不同水源类型地表水水源地数量汇总表

地表水水源地类型	数量（处）	比例（%）
合计	**11662**	**100**
河流型	7107	60.9
湖泊型	169	1.5
水库型	4386	37.6

治理保护河流。全国有防洪任务的河段长度为 373910 公里。其中：已治理河段总长度为 123571 公里，占有防洪任务河段总长度的 33.0%；在已治理河段中，治理达标河段长度为 64624 公里。

五、水土保持情况

土壤侵蚀。土壤水力、风力侵蚀面积 294.91 万平方公里（详见表 12）。

表 12　土壤水力、风力侵蚀面积汇总表

土壤侵蚀类型	面积（万平方公里）	比例（%）
合计	**294.91**	**100**
水力侵蚀	129.32	43.85
风力侵蚀	165.59	56.15

水力侵蚀面积 129.32 万平方公里，按侵蚀强度分，轻度 66.76 万平方公里，中度 35.14 万平方公里，强烈 16.87 万平方公里，极强烈 7.63 万平方公里，剧烈 2.92 万平方公里。风力侵蚀面积 165.59 万平方公里，按侵蚀强度分，轻度 71.60 万平方公里，中度 21.74 万平方公里，强烈 21.82 万平方公里，极强烈 22.04 万平方公里，剧烈 28.39 万平方公里。

侵蚀沟道。西北黄土高原区侵蚀沟道 666719 条，东北黑土区侵蚀沟道 295663 条。

水土保持措施面积。水土保持措施面积为 99.16 万平方公里，其中：工程措施 20.03 万平方公里，植物措施 77.85 万平方公里，其他措施 1.28 万平方公里。

淤地坝。共有淤地坝 58446 座，淤地面积 927.57 平方公里，其中：库容在 50 万～500 万立方米的骨干淤地坝 5655 座，总库容 57.01 亿立方米。

六、水利行业能力建设情况

水利行政机关及其管理的企（事）业单位 43632 个，从业人员 133.63 万人，其中：大专及以上学历人员 58.97 万人，高中（中专）及以下学历人员 74.66 万人。

乡镇水利管理单位 29416 个，从业人员 20.55 万人，其中：具有专业技术职称的人员为 10.20 万人。

注释

[1] 本公报中数据均为初步汇总数。

[2] 工程规模、等级的划分如下：

1. 水库

大（1）型水库：总库容≥10 亿立方米；大（2）型水库：1 亿立方米≤总库容＜10 亿立方米；中型水库：0.1 亿立方米≤总库容＜1 亿立方米；小（1）型水库：0.01 亿立方米≤总库容＜0.1 亿立方米；小（2）型水库：0.001 亿立方米≤总库容＜0.01 亿立方米。

2. 水电站

大（1）型水电站：装机容量≥120 万千瓦；大（2）型水电站：30 万千瓦≤装机容量＜120 万千瓦；中型水电站：5 万千瓦≤装机容量＜30 万千瓦；小（1）型水电站：1 万千瓦≤装机容量＜5 万千瓦；小（2）型水电站：装机容量＜1 万千瓦。

3. 水闸

大型水闸：过闸流量≥1000 立方米每秒；中型水闸：100 立方米每秒≤过闸流量＜1000 立方米每秒；小型水闸：过闸流量＜100 立方米每秒。

4. 堤防

1 级：防洪（潮）[重现期（年）] ≥100；2 级：50≤防洪（潮）[重现期（年）] ＜100；3 级：30≤防洪（潮）[重现期（年）] ＜50；4 级：20≤防洪（潮）[重现期（年）] ＜30；5 级：10≤防洪（潮）[重现期（年）] ＜20；5 级以下：防洪（潮）[重现期（年）] ＜10。

5. 泵站

大型泵站：装机流量≥50 立方米每秒或装机功率≥1 万千瓦；中型泵站：10 立方米每秒≤过闸流量＜50 立方米每秒或 0.1 万千瓦≤装机功率＜1 万千瓦；小型泵站：装机流量＜10 立方米每秒或装机功率＜0.1 万千瓦。

[3] 1 公顷＝15 亩。

According to the decision of the State Council, the first national census for water was conducted in the period of 2010 – 2012. December 31, 2011 is set as the standard time point and the year of 2011 is defined as the census period. The scope of census covers rivers and lakes, water structures, major water abstractors for social and economic use, and water-related institutions etc. within the territory of the People's Republic of China (excluding Hong Kong Special Administrative Region, Macao Special Administrative Region and Taiwan). The main contents of census include basic conditions of rivers and lakes, basic conditions of water structures, water use of economies and society, management and protection of rivers and lakes, soil and water conservation and capacity building of the water sector. The census follows "the principle of localization", and selects the county level administration as the basic working unit and applies multiple methods of survey such as comprehensive survey, sampling survey, typical survey and key project survey.

Two-phase stratified sampling method was employed by the Office of the State Council Leading Group of First National Census for Water, to conduct samples survey in 31 census areas at provincial level in China. The overall results of post-survey quality examination through random check indicates that the quality of census data is able to meet the expectation, with a missing report rate of 0.11‰ and an average error rate of 6.20‰ for the summary data of index.

With the approval of the State Council, the results of water census are published as follows.

1. Basic Conditions of Rivers and Lakes

Rivers. There are 45,203 rivers with individual catchment area of 50 km^2 or above and a combined length of 1,508.5 thousand km, 22,909 rivers with individual catchment area of 100 km^2 or above and a combined length of 1,114.6 thousand km, 2,221 rivers with individual catchment area of 1,000 km^2 or above and with a combined length of 386.5 thousand km, 228 rivers with individual catchment area of 10,000 km^2 or above and a combined length of 132.5 thousand km (Refer to Table 1 for the details).

Table 1 Summary statistics of the number of rivers by river basins

Catchment area / River basin (Region)	50 km^2 or above	100 km^2 or above	1,000 km^2 or above	10,000 km^2 or above
Total	**45,203**	**22,909**	**2,221**	**228**
Heilongjiang River	5,110	2,428	224	36
Liaohe River	1,457	791	87	13
Haihe River	2,214	892	59	8
Yellow River	4,157	2,061	199	17
Huaihe River	2,483	1,266	86	7
Yangtze River (Changjiang)	10,741	5,276	464	45
Rivers in Zhejiang and Fujian	1,301	694	53	7
Pearl River	3,345	1,685	169	12
Rivers flowing into sea in Southwest and Northwest China	5,150	2,467	267	30
Rivers not flowing into sea	9,245	5,349	613	53

Lakes. There are 2,865 lakes with individual perennial water surface area of 1 km^2 or above and combined water surface area of 78 thousand km^2 (excluding the parts of transboundary lakes outside the border of China) (Refer to Table 2 for the details). Among these lakes, 1,594 are freshwater lakes, 945 saltwater lakes, 166 salt lakes and 160 others.

Table 2 Summary statistics of the number of lakes by river basins

River basin (Region) \ Lake area	1 km^2 or above	10 km^2 or above	100 km^2 or above	1,000 km^2 or above
Total	**2,865**	**696**	**129**	**10**
Heilongjiang River	496	68	7	2
Liaohe River	58	1	0	0
Haihe River	9	3	1	0
Yellow River	144	23	3	0
Huaihe River	68	27	8	2
Yangtze River (Changjiang)	805	142	21	3
Rivers in Zhejiang and Fujian	9	0	0	0
Pearl River	18	7	1	0
Rivers flowing into sea in Southwest China and Northwest China	206	33	8	0
Rivers not flowing into sea	1,052	392	80	3

2. Basic Conditions of Water Structures

Reservoirs. The number of reservoirs in China totals 98,002, with a combined storage capacity of 932.312 billion m^3 (Refer to Table 3 for the details). Among these reservoirs, 97,246 are completed, with a total storage capacity of 810.410 billion m^3, and 756 are under construction, with a total storage capacity of 121.902 billion m^3.

Table 3 Summary statics of reservoirs of various scales and total storage capacities

Scale of reservoir	Total	Large-size			Medium-size	Small-size		
		Sub-total	Large Type-Ⅰ	Large Type-Ⅱ		Sub-total	Small Type-Ⅰ	Small Type-Ⅱ
Number	**98,002**	756	127	629	3,938	93,308	17,949	75,359
Total storage (100 million m^3)	**9,323.12**	7,499.85	5,665.07	1,834.78	1,119.76	703.51	496.38	207.13

Hydropower stations. The number of hydropower stations totals 46,758 in China, with combined installed capacity of 333 million kW (Refer to Table 4 for the details). Among them, 20,866 are completed, with combined installed capacity of 217 GW and 1,324 are under construction, with combined installed capacity of 110 GW.

Table 4 Summary statistics of hydropower stations of various scales and their installed capacities

Scale of hydropower stations		Number	Installed capacity (10,000 kW)
Total		**46,758**	**33,288.93**
Installed capacity ⩾500 kW	Sub-total	22,190	32,729.79
	Large Type-Ⅰ	56	15,485.50
	Large Type-Ⅱ	86	5,178.46
	Medium-size	477	5,242.00
	Small Type-Ⅰ	1,684	3,461.38
	Small Type-Ⅲ	19,887	3,362.45
Installed capacity<500 kW		24,568	559.14

Sluices. There are 268,476 sluices with a flow capacity of 1 m^3/s or above and 2,685 rubber dams (Refer to Table 5 for the details) in China. Among them, there are

96,226 completed sluices, 793 under-constructed sluices, 7,919 flood diversion/discharge sluices, 10,970 water intake/control sluices, 55,137 regulating sluices, 17,198 water drainage sluices and 5,795 tidal sluices.

Table 5 Summary statistics of sluices of various scales

Sluices		Number	Percentage (%)
Total		**268,476**	
Passing gate flow≥5 m^3/s	Sub-total	97,019	100
	Large-size	860	0.9
	Medium-size	6,332	6.5
	Small-size	89,827	92.6
Below (1 m^3/s≤passing gate flow<5 m^3/s)		171,457	

Embankments. The total length of embankment in China reaches 413,679 km (Refer to Table 6 for the details). The total length of grade-5 embankment is 275,495 km, among which 267,532 km is completed and 7,963 km is under construction.

Table 6 Summary statistics of embankment of various grades

Grade of embankment	**Total**	Grade-1	Grade-2	Grade-3	Grade-4	Grade-5	Below Grade-5
Total length (km)	**413,679**	10,739	27,286	32,669	95,523	109,278	138,184
Percentage (%)	**100**	2.6	6.6	7.9	23.1	26.4	33.4

Pumping stations. There are a total of 424,451 pumping stations in China (Refer to Table 7 for the details). Among them, 88,365 are completed and 698 are under construction.

Table 7 Summary statistics of pumping stations of various sizes

Scale of pumping stations		Number
Total		**424,451**
Above scale (installed capacity≥1 m^3/s or installed capacity≥50 kW)	Sub-total	89,063
	Large-size	299
	Medium-size	3,714
	Small-size	85,050
Below scale (installed flow <1 m^3/s and installed capacity <50 kW		335,388

Water supply in rural areas. There are a total of 58,874.6 thousand water supply projects in rural areas of China, among which 922.5 thousand are of centralized type and 57,952.1 thousand are of distributed type. The beneficiary population of these projects reach 812 million, among whom 549 million are beneficiaries of centralized water supply rojects and 263 million are those of distributed ones.

Small reservoirs and ponds. A total of 4,565.1 thousand small reservoirs were built in China, with combined storage capacity of 30.317 billion m^3. The country also has 6,893.1 thousand cellars and ponds with a total storage capacity of 252 million m^3.

Irrigated areas. Irrigated area in China reaches 1.002 billion mu, of which 922 million mu of cultivated land and 80 million mu of garden and grassland are under effective irrigation.

Construction of irrigation districts. A total of 456 irrigation districts with individual designed irrigation area of 300 thousand mu or above were constructed in China, with combined irrigation area of 280 million mu. The number of irrigation districts with individual designed irrigated area from 10 thousand (equal or exceed) mu to 300 thousand mu totals 7,316, with combined irrigation area of 223 million mu. The number of irrigation

districts with individual designed area from 50 (equal or exceed) mu to 10 thousand mu totals 2,058.2 thousand, with combined irrigation area of 342 million mu.

Groundwater abstraction wells. A total of 974.9 million groundwater abstraction wells were drilled in China, with a total quantity of 108.4 billion m^3 water withdrawn annually (Refer to Table 8 for the details).

Table 8 Summary statistic of groundwater abstraction wells of various types and total quantity of water withdrawal

Type of water abstraction wells			Number of wells	Quantity of water withdrawal (1,000 million m^3)
Total			**9,749**	**1,084**
Tube well		Sub-total	5,383	1,040
	Irrigation	Sub-total	848	753
		Inner diameter of well tube ≥200 mm	407	613
		Inner diameter of well tube <200 mm	441	140
	Water supply	Sub-total	4,535	287
		Daily water abstraction ≥20 m^3	39	217
		Daily water abstraction <20 m^3	4,496	70
Manual wells			4,366	44

Groundwater sources. There are a total of 1,847 groundwater sources in China (Refer to Table 9 for the details).

Table 9 Groundwater sources of various scales

Scale of groundwater sources	Number of water sources	Percentage (%)
Total	**1,847**	**100**
Small-size water source (5,000 m^3 ≤daily water abstraction <10,000 m^3)	824	44.6
Medium-size water source (10,000 m^3 ≤daily water abstraction<50,000 m^3)	870	47.1
Large-size water source (50,000 m^3 ≤daily water abstraction<150,000 m^3)	137	7.4
Super-large-size water source (150,000 m^3 ≤daily water abstraction)	16	0.9

3. Water Use of the Economy and Society

The total quantity of annual water use of the economy and society amounts to 621.32 billion m^3, among which 47.36 billion m^3 is for domestic water use, 416.82 billion m^3 for agricultural use, 120.30 billion m^3 for industrial use, 1.99 billion m^3 for building industries, 24.21 billion m^3 for tertiary industry and 10.64 billion m^3 for ecological and environmental usage.

4. Development and Harnessing of Rivers and Lakes

Water intakes of rivers and lakes. There are a total of 638,908 water intakes placed along rivers and lakes (Refer to Table 10 for the details).

Surface water sources. There are a total of 11,662 surface water sources (Refer to Table 11 for the details).

Table 10 Summary statistics of water intakes of various scales

Size of water intakes placed along rivers and lakes	Number of water intakes	Percentage (%)
Total	**638,908**	**100**
Above scale (water abstraction for irrigation ≥0.20 m^3/s, water abstraction for other usages≥150,000 m^3)	121,848	19.1
Below scale (water abstraction for irrigation <0.20 m^3/s, water abstraction for other usages<150,000 m^3)	517,060	80.9

Table 11 Surface water sources of various types

Type of surface water sources	Number of sources	Percentage (%)
Total	**11,662**	**100**
River	7,107	60.9
Lake	169	1.5
Reservoir	4,386	37.6

River harnessing and protection. The combined length of river courses requiring flood defense stands at 373,910 km in China. The length of river courses with engineering harnessing amounts to 123,571 km, making up 33.0% of all river courses requiring flood defense. Among harnessed river courses, 64,624 km has reached the flood control standard.

5. Soil and Water Conservation

Soil erosion. The total area of territory suffering from water erosion and wind erosion stands at 2,949.1 thousand km^2 (Refer to Table 12 for the details).

Table 12 Summary statistics of total eroded areas due to water and wind erosion

Types of soil erosion	Area (10,000 km^2)	Percentage (%)
Total	**294.91**	**100**
Water erosion	129.32	43.85
Wind erosion	165.59	56.15

The total area of territories suffering from water erosion is 1,293.2 thousand km^2, which, according to the severity of erosion, are categorized into 667.6 thousand km^2 of slightly eroded lands, 351.4 thousand km^2 of moderately eroded level, 168.7 thousand km^2 of highly eroded level and 76.3 thousand km^2 of severely eroded level and 29.2 thousand km^2 of extremely eroded level. The total area of territory suffering from wind erosion hits 1,655.9 thousand km^2, which, according to the severity of erosion, are categorized into 716.0 thousand km^2 of slightly eroded lands, 217.4 thousand km^2 of moderately eroded level, 218.2 thousand km^2 of highly eroded level, 220.4 thousand km^2 of severely eroded level and 283.9 thousand km^2 of extremely eroded level.

Eroded valleys and gullies. The eroded valleys and gullies in Loess Plateau areas in Northwest China totals 666,719, and the number of those in black earth areas in Northeast China totals 295,663.

Areas with water and soil conservation measures. The total area of territory benefitting from water and soil conservation measures reaches 991.6 thousand km^2, among which 200.3 thousand km^2 benefits from structural measures, 778.5 thousand km^2 from biological measures and 12.8 thousand km^2 from other measures.

Silt retention dams. A total of 58,446 silt retention dams have been built, with a silted land area of 927.57 km^2. Among them, backbone silt retention dams with a storage capacity from 500 thousand m^3 to 5 million m^3 add up to 5,655, boasting of a total storage capacity of 5.701 billion m^3.

6. Capacity Building in the Water Sector

The number of water administration agencies, water enterprises and government-affiliated

institutions in China stands at 43,632 in total, employing 1,336.3 thousand people, among whom 589.7 thousand are junior college graduates or holders of higher degrees and 746.6 thousand are high school or technical school graduates or holders of lower degree.

The number of township-level water administrative units stands at 29,416 in total, employing 205.5 thousand people, among whom 102.0 thousand possess professional or technical titles and certificates.

Notes

[1] The data in this bulletin are all preliminary summaries of census results.

[2] The classification of the scale and grade of water structures is as follows.

1. Reservoir

Large Type-Ⅰ reservoir: total storage ≥1 billion m^3; Large Type-Ⅱ reservoir: 0.1 billion m^3 ≤total storage <1 billion m^3; Medium-size: 10 million m^3 ≤total storage<0.1 billion m^3; Small Type-Ⅰ reservoir: 1 million m^3 ≤total storage<10 million m^3; Small Type-Ⅱ reservoir: 0.1 million m^3 ≤total storage<1 million m^3.

2. Hydropower station

Large Type-Ⅰ hydropower station: installed capacity≥1.20 million kW; Large Type-Ⅱ hydropower station: 0.3 million kW≤installed capacity<1.2 million kW; Medium-size hydropower station: 0.05 million kW≤installed capacity<0.30 million kW; Small Type-Ⅰ hydropower station: 10,000 kW ≤installed capacity<50,000 kW; Small Type-Ⅱ hydropower station: installed capacity<10,000 kW.

3. Sluice

Large-size Sluice: flow capacity≥1,000 m^3/s; Medium-size Sluice: 100 m^3/s≤flow capacity< 1,000 m^3/s; Small-size Sluice: flow capacity<100 m^3/s.

4. Embankment

Grade-1: flood (tidal) control [recurrence period (year)] ≥100; Grade-2: 50≤flood (tidal) control [recurrence period (year)] <100; Grade-3: 30≤flood (tidal) control [recurrence period (year)] <50; Grade-4: 20≤flood (tidal) control [recurrence period (year)] <30; Grade-5: 10≤flood (tidal) control [recurrence period (year)] <20; Below Grade-5: flood (tidal) control [recurrence period (year)] <10.

5. Pumping station

Large-size pumping station: installed capacity of flow≥50 m^3/s or installed capacity ≥10,000 kW; Medium-size pumping station: 10 m^3/s≤flow capacity<50 m^3/s or 1,000 kW≤installed capacity<10,000 kW; Small-size pumping station: installed capacity of flow<10 m^3/s or installed capacity <1,000 kW.

[3] 1 hectare (ha) =15 mu.