

2016 年

全国水利发展统计公报

2016 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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2016 年是实施“十三五”规划的开局之年，也是水利改革发展中极不平凡的一年。在党中央、国务院的坚强领导下，广大水利干部职工锐意进取、开拓创新，攻坚克难、真抓实干，治水兴水高潮迭起，水利工作成效显著，实现了“十三五”水利改革发展良好开局，为经济社会持续健康发展提供了有力的水利支撑和保障。

1

水利固定资产投资

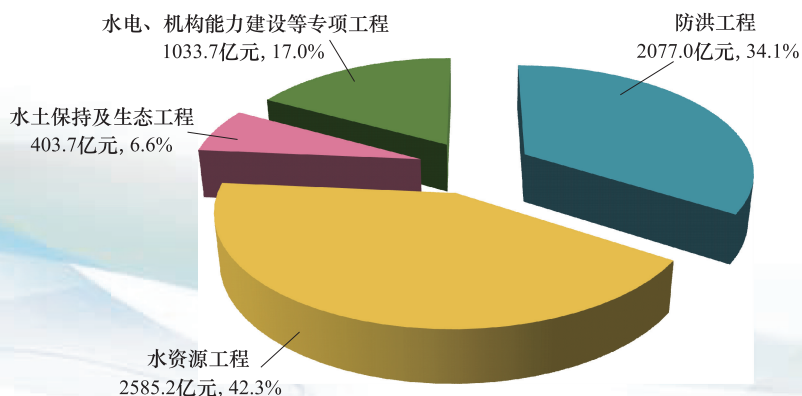
全年水利建设完成投资 6099.6 亿元，较上年增加 647.4 亿元，增加 11.9%。其中：建筑工程完成投资 4422.0 亿元，较上年增加 6.5%；安装工程完成投资 254.5 亿元，较上年增加 11.2%；机电设备及工器具购置完成投资 172.8 亿元，较上年减少 13.0%；其他完成投资（包括移民征地补偿等）1250.3 亿元，较上年增加 43.1%。

| | 2010 年 /亿元 | 2011 年 /亿元 | 2012 年 /亿元 | 2013 年 /亿元 | 2014 年 /亿元 | 2015 年 /亿元 | 2016 年 /亿元 | 比上年 增加比例 /% |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-------------------|
| 全年完成 | 2319.9 | 3086.0 | 3964.2 | 3757.6 | 4083.1 | 5452.2 | 6099.6 | 11.9 |
| 建筑工程 | 1524.9 | 2103.2 | 2736.5 | 2782.8 | 3086.4 | 4150.8 | 4422.0 | 6.5 |
| 安装工程 | 109.6 | 121.7 | 237.8 | 173.6 | 185.0 | 228.8 | 254.5 | 11.2 |
| 机电设备及工器具购置 | 124.5 | 115.2 | 178.1 | 161.1 | 206.1 | 198.7 | 172.8 | -13.0 |
| 其他（包括移民征地补偿等） | 560.9 | 745.9 | 811.8 | 640.2 | 605.6 | 873.9 | 1250.3 | 43.1 |

在全年完成投资中，防洪工程建设完成投资 2077.0 亿元，水资源工程建设完成投资 2585.2 亿元，水土保持及生态工程完成投资 403.7 亿元，水电、机构能力建设等专项工程完成投资 1033.7 亿元。七大江

河流域完成投资 4761.5 亿元，东南诸河、西北诸河以及西南诸河等其他流域完成投资 1338.1 亿元；东部、中部、西部、东北地区完成投资分别为 2358.4 亿元、1163.4 亿元、2234.9 亿元和 342.9 亿元，占全部完成投资的比例分别为 38.7%、19.1%、36.6% 和 5.6%。

2016 年分用途完成投资情况



在全年完成投资中，中央项目完成投资 88.7 亿元，地方项目完成投资 6010.9 亿元。大中型项目完成投资 1080.0 亿元，小型及其他项目完成投资 5019.6 亿元。各类新建工程完成投资 4775.7 亿元，扩建、改建等项目完成投资 1323.9 亿元。

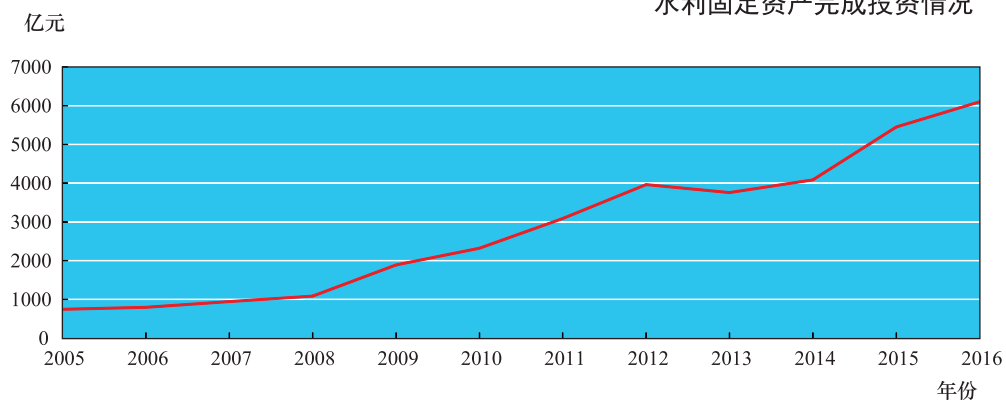
全年水利建设新增固定资产 4046.7 亿元。截至 2016 年年底，在建

项目累计完成投资 14174.3 亿元，投资完成率为 60.1%；累计新增固定资产 9115.7 亿元，固定资产形成率为 64.3%，比上年增加 2.8 个百分点。

当年施工的水利建设项目 26331 个，在建项目投资总规模 21629.1 亿元，较上年减少 4.2%。其中：有中央投资的水利建设项目 16479 个，较上年减少 23.1%；在建投资规模 12121.3 亿元，较上年减少 19.8%。新开工项目 18410 个，较上年增加 10.2%，新增投资规模 6914.8 亿元，比上年增加 28.3%。

全年水利建设完成土方、石方和混凝土方分别为 39.8 亿立方米、7.0 亿立方米、0.9 亿立方米。截至 2016 年年底，在建项目计划实物工程量完成率分别为：土方 84.0%、石方 91.8%、混凝土方 60.5%。

水利固定资产完成投资情况



2

重点水利建设

江河湖泊治理。全年在建江河治理工程 5606 处，其中：堤防建设 527 处，大江大河及重要支流治理 593 处，中小河流治理 3530 处，行蓄洪区安全建设及其他项目 956 处。截至 2016 年年底，在建项目累计完成投资 3791.0 亿元，投资完成率 60.0%。东北三江、洞庭湖、鄱阳湖治理加快实施；进一步治淮工程建设加快推进，38 项工程已开工 25 项，其中 6 项全面完成或基本完成，洪泽湖大堤除险加固工程率先通过竣工验收；太湖流域水环境综合治理深入实施，走马塘延伸拓浚等 8 项工程已完工。

水库及枢纽工程建设。全年在建水库及枢纽工程 369 座，截至 2016 年年底，在建项目累计完成投资 1939.7 亿元，项目投资完成率 59.8%。黑河黄藏寺水利枢纽，浙江朱溪水库，安徽江巷水库，福建罗源霍口水库，湖南毛俊水库，广西驮英水库及灌区，贵州黄家湾水库，四川土溪口水库、李家岩水库、黄石盘水库，云南阿岗水库，甘肃红崖山水库加高扩建等工程开工；西江大藤峡水利枢纽、淮河出山店水利枢纽主体工程加快实施；河南前坪水库、西藏拉洛水利枢纽、新疆阿尔塔什水利枢纽、重庆观景口水利枢纽、贵州马岭水利枢纽、云南德厚水库、青海蓄集峡水利枢纽等工程实现截流；湖南涪天河水库扩建工程下闸蓄水；右江百色水利枢纽、湖南皂市水利枢纽工程通过竣工验收。

水资源配置工程建设。全年水资源配置工程在建投资规模 4648.1 亿元，累计完成投资 2590.6 亿元，项目投资完成率 55.7%。引江济淮、舟山大陆引水三期、平潭及闽江口水资源配置、云南柴石滩水库灌区、四川武引蓬船灌区、江西廖坊水利枢纽灌区二期、青海引大济湟西干渠灌区等工程开工，陕西引汉济渭、湖北鄂北水资源配置、甘肃引洮供水二期、贵州夹岩水利枢纽及黔西北供水主体工程全面实施。

农村水利建设。全年农村饮水安全巩固提升工程完成投资 240.0 亿元，其中中央补助资金 30.0 亿元，受益人口 3900 多万，其中涉及国家建档立卡贫困人口 600 万。截至 2016 年年底，农村自来水普及率达到

79%。当年安排中央投资用于灌溉建设与节水改造 161.5 亿元（含已列入重大水利工程 154.5 亿元），主要用于 164 处大型灌区续建配套与节水改造、13 处新建大型灌区、8 个省（自治区）大型灌排泵站更新改造等。安排实施高效节水灌溉、田间渠系配套、“五小水利”工程等小型农田水利建设与管护资金 366.9 亿元。全年新增有效灌溉面积 1561 千公顷，新增节水灌溉面积 2495 千公顷，新增高效节水灌溉面积 1455 千公顷。

农村水电建设。全年农村水电建设完成投资 249.0 亿元，新增水电站 312 座，装机容量 203 万千瓦，其中：新投产装机容量 155 万千瓦，技改净增发电设备容量 48 万千瓦。全国农村水电配套电网建设共完成投资 84.0 亿元，新增 110 千伏及以上变电站容量 366 万千伏安；新增 35（63）千伏变电站容量 131 万千伏安；配电变压器容量 595 万千伏安。新增高压线路 1.7 万公里，低压线路 3.2 万公里。

水土流失治理。全年水土保持及生态工程在建投资规模 520.0 亿元，累计完成投资 473.1 亿元。全国新增水土流失综合治理面积 5.6 万平方公里，其中国家水土保持重点工程新增水土流失治理面积 1.2 万平方公里。全年新增封育保护面积 1.6 万平方公里。对 221 座黄土高原淤地坝进行了除险加固。全年新修基本农田（含坡耕地）574 千公顷，营造水保林面积 1690 千公顷，新增种草面积 423 千公顷。

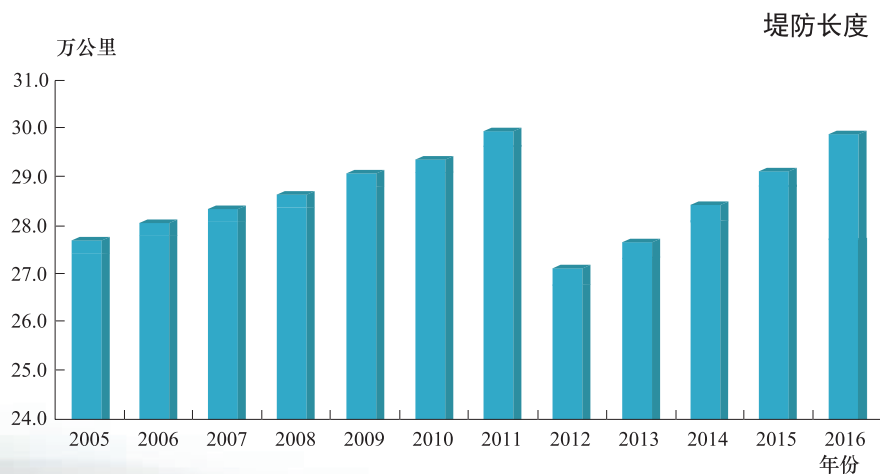
行业能力建设。全年水利行业能力建设完成投资 38.0 亿元。其中：防汛通信设施投资 4.4 亿元，水文建设投资 15.3 亿元，科研教育设施投资 1.4 亿元，其他投资 16.9 亿元。



3

主要水利工程施工

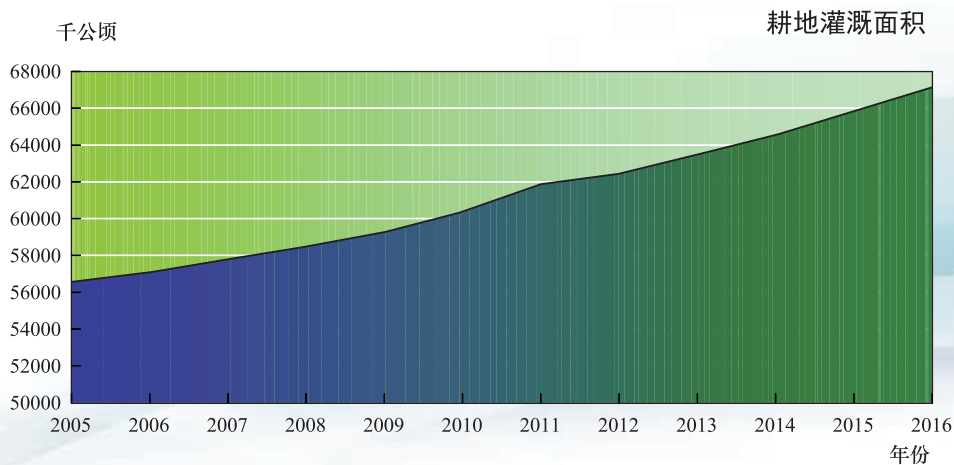
堤防和水闸。全国已建成五级及以上江河堤防 29.9 万公里^①，累计达标堤防 20.1 万公里，堤防达标率 67.2%；其中 1 级、2 级达标堤防长度 3.2 万公里，达标率 79.2%。全国已建成江河堤防保护人口 6.0 亿人，保护耕地 4.1 万公顷。全国已建成流量为 5 立方米每秒及以上的水闸 105283 座，其中大型水闸 892 座；按水闸类型分，其中：分洪闸 10557 座，排（退）水闸 18210 座，挡潮闸 5153 座，引水闸 14350 座，节制闸 57013 座。



① 2011 年以前各年堤防长度含部分地区五级以下江河堤防长度。

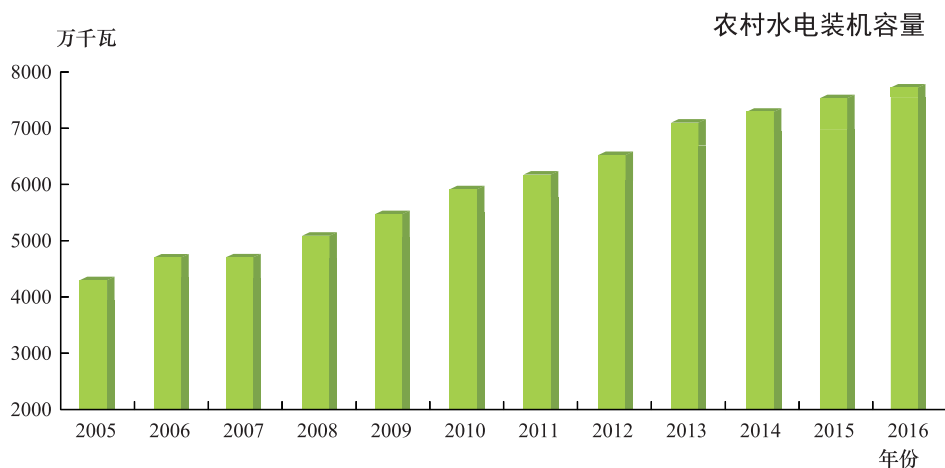
水库和枢纽。全国已建成各类水库 98460 座，水库总库容 8967 亿立方米。其中：大型水库 720 座，总库容 7166 亿立方米，占全部总库容的 79.9%；中型水库 3890 座，总库容 1096 亿立方米，占全部总库容的 12.2%。

农业灌溉。全国设计灌溉面积大于 2000 亩及以上的灌区共 22689 处，耕地灌溉面积 37208 千公顷。其中：50 万亩以上灌区 177 处，耕地灌溉面积 12335 千公顷；30 万 ~ 50 万亩大型灌区 281 处，耕地灌溉面积 5430 千公顷。截至 2016 年年底，全国灌溉面积 73177 千公顷，耕地灌溉面积 67141 千公顷，占全国耕地面积的 49.6%。全国节水灌溉工程面积 32847 千公顷，其中：喷灌、微灌面积 9954 千公顷，低压管灌面积 9451 千公顷。

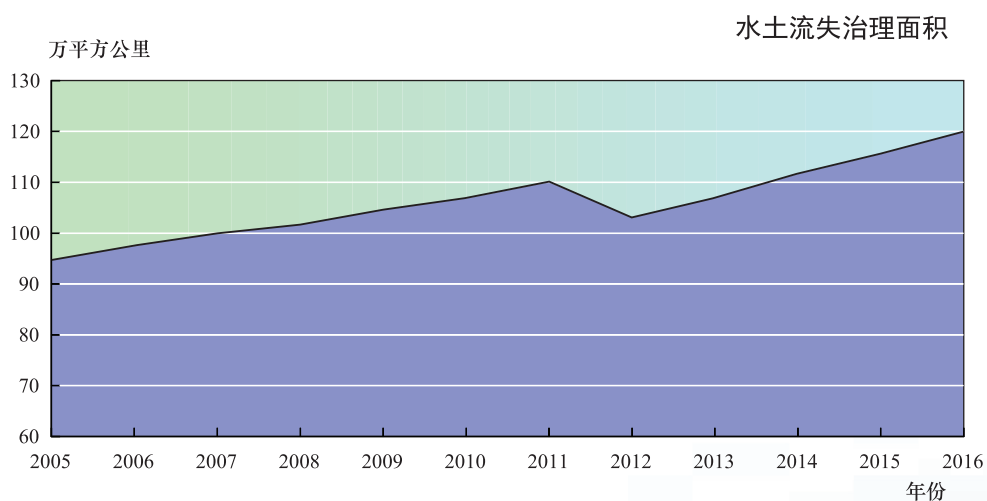


机电井和泵站。全国已累计建成日取水大于等于 20 立方米的供水机电井或内径大于 200 毫米的灌溉机电井共 487.2 万眼。全国已建成各类装机流量 1 立方米每秒或装机容量 50 千瓦以上的泵站 91820 处，其中：大型泵站 371 处，中型泵站 4200 处，小型泵站 87249 处。

农村水电。全国共建成农村水电站 47529 座，装机容量 7791 万千瓦，占全国水电装机容量的 23.5%。全国农村水电年发电量 2682 亿千瓦时，占全国水电发电量的 22.7%。



水土保持工程。全国水土流失综合治理面积达 120.4 万平方公里，累计封禁治理保有面积达 81.6 万平方公里。在 19 个国家级重点治理区、16 个国家级重点预防保护区和 1 个生产建设项目集中区开展了水土流失动态监测，完成抽样监测面积约 61.5 万平方公里，对不同土壤侵蚀类型区的 69 条典型小流域和 92 个典型监测点实施了定位观测。



水文和信息化。全国共有各类水文测站 103962 处，其中：国家基本水文站 3140 处，专用水文站 3626 处，水位站 12591 处，雨量站 51084 处，蒸发站 14 处，墒情站 1989 处，水质站 14499 处，地下水站 16967 处，实验站 52 处。向县级以上防汛指挥部门报送水文信息的各类水文测站 51596 处，发布预报的各类水文测站 1450 处。已建成水环境监测（分）中心 322 个，水质监测基本覆盖了全国主要江河湖库，水生态监测逐步开展。

2016 年省级以上水利部门配置各类服务器 5474 套，其中：内网服务器 1413 套、外网服务器 4061 套；配备各类联网计算机（PC）91384 台，其中：内网 19253 台、外网 72131 台。省级以上水利部门数据库已存储的各类结构化数据总量 985037GB，非结构化数据总量 661097GB。目前，全国已配置水利卫星小站 1008 个，其他卫星设施 4275 套，便携式卫星小站 46 套，无线宽带接入终端 2487 个，集群通信终端 7160 个。省级以上水利部门可接受信息的各类水利信息采集点 181161 处，其中自动采集点 144693 处。





4

水资源利用与保护

2016 年全国水资源总量 32466.4 亿立方米，比多年平均偏多 17.1%；全国年平均降水量 730.0 毫米，比多年平均偏多 13.6%，较上年增加 10.5%。截至 2016 年年底，全国 639 座大型水库年末蓄水总量 3503.5 亿立方米，比年初减少 36.8 亿立方米；3410 座中型水库年末蓄水量 450.2 亿立方米，比年初减少 3.9 亿立方米。

全年全国总供水量 6040.2 亿立方米，其中：地表水源占 81.3%，地下水源占 17.5%，其他水源占 1.2%。全国总用水量 6040.2 亿立方米，其中：生活用水 821.6 亿立方米，占总用水量的 13.6%；工业用水 1308.0 亿立方米，占总用水量的 21.6%；农业用水 3768.0 亿立方米，占总用水量的 62.4%；生态环境人工补水 142.6 亿立方米，占总用水量的 2.4%。与上年比较，用水量减少 63.0 亿立方米，其中：生活用水增加 28.1 亿立方米，工业用水减少 26.8 亿立方米，农业用水减少 84.2 亿立方米，生态环境人工补水增加 19.9 亿立方米。全国人均用

水量 438 立方米。万元 GDP 用水量 81 立方米（当年价），比上年减少 7.2%；万元工业增加值用水量 52.8 立方米（当年价），比上年减少 7.6%。

根据对全国 23.5 万公里河流水质评价结果，水质符合和优于Ⅲ类水的河长占总评价河长的 76.9%。



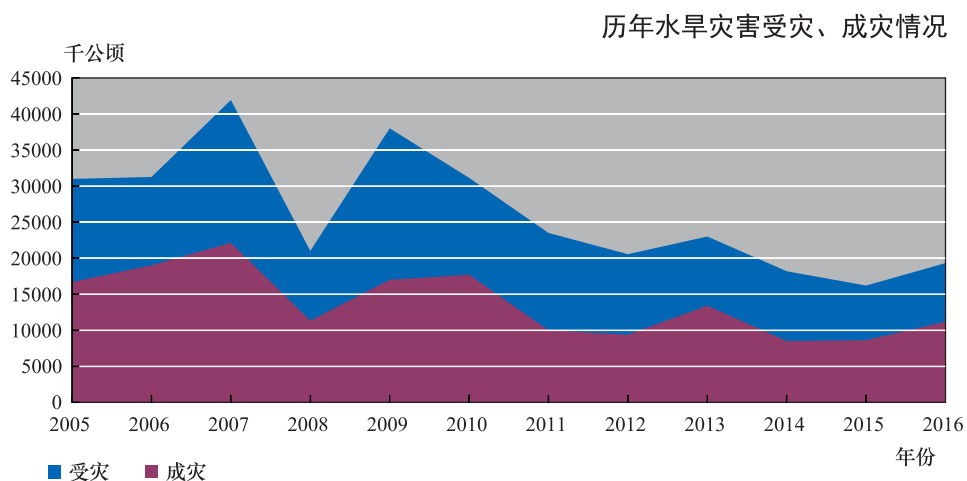


5

防洪抗旱

2016 年，全国洪涝灾害总体偏轻。全国农作物受灾面积 9443 千公顷，成灾面积 5063 千公顷，受灾人口 1.01 亿，因灾死亡 686 人，失踪 207 人，倒塌房屋 43 万间，城市受淹 192 个，直接经济损失 3643 亿元，其中水利设施直接经济损失 698 亿元。湖北、安徽、河北、湖南、福建等省受灾较重。全国因山洪灾害造成的人员死亡和失踪占全部死亡和失踪人数的 68%，因台风造成的经济损失占全国洪涝灾害直接经济损失的比例为 17%。

全国旱灾总体偏轻。黑龙江、内蒙古、甘肃等省（自治区）旱灾比较严重。全国农田因旱受灾面积 9873 千公顷，成灾面积 6131 千公顷，直接经济损失 484 亿元。全国因旱累计有 469 万城乡人口、650 万头大牲畜发生临时性饮水困难。



全年中央下拨特大防汛抗旱经费 39.5 亿元，其中：特大防汛经费 34.4 亿元，特大抗旱经费 5.1 亿元。

全年防洪减淹耕地 6767 千公顷，避免城市受淹 173 座次，防洪减灾经济效益 2354 亿元。解决了 408 万城乡居民和 452 万头大牲畜因旱临时饮水困难，全年完成抗旱浇地面积 16475 千公顷，抗旱挽回粮食损失 182 亿公斤。各地防汛抢险累计投入 2403 万人次，出动舟船 6.1 万舟次、运输设备 63.4 万班次、机械设备 48.8 万台班，消耗物资价值 136.1 亿元，紧急组织转移群众 1460 万人次，解救洪水围困群众 135 万人次；抗旱投入劳力 2349 万人次，开动机电井 282 万眼、泵站 3.7 万处、机动抗旱设备 491 万台套，出动各类运水车 52 万辆次。



6

水利改革与管理

水利规划和前期工作。2016年，中央层面审批水利规划25项，其中：国务院批准《水利改革发展“十三五”规划》1项、国家发展改革委审批《全国水中长期供求规划》等2项，水利部审批22项。扎实推进国家重大战略水利专项规划，印发实施了《京津冀协同发展水利专项规划》，出台了《长江岸线保护和开发利用总体规划》。积极推动全国和流域层面规划编制工作，审批印发了《长江中下游河道治理规划》《伊洛河流域综合规划》等。2016年，水利部报送国家发展改革委项目共32项，投资规模3424.0亿元。国家发展改革委批复项目30项，其中：项目建议书3项、可行性研究报告23项、工程规划4项，总投资2452.2亿元。水利部批复初步设计7项，总投资167.7亿元。

水利立法与水政管理。《农田水利条例》自2016年7月1日起施行，是新中国第一部关于农田水利的行政法规。完成《水法》《防洪法》《水文条例》部分条款修改。国家发展改革委、水利部等13个部委局制定了《公共资源交易平台管理暂行办法》。水利部开展部门规章清理，废止规章2件、修改4件。全年水利部共计准予（含延续）水

行政审批事项 970 件。其中：水利基建项目初步设计文件审批 4 件，非防洪建设项目洪水影响评价报告审批 7 件，生产建设项目水土保持方案审批 109 件，生产建设项目水土保持设施验收审批 135 件，水利工程启闭机使用许可证核发 75 件，国家基本水文测站设立和调整审批 6 件，水利工程建设监理单位资质认定（含新申请、延续、增项、晋升）413 件，水利工程质量检测单位资质认定（含申报、延续）221 件。全国执法巡查发现、制止和现场处理水事违法行为 110504 起；立案查处水事违法案件 14864 件，已结案 12703 件，结案率 85.5%。全国共调处水事纠纷 2573 件，已解决 2513 件。2016 年水利部共办结行政复议案件 28 件。

落实最严格水资源管理制度。水利部会同国家发展改革委等 8 部委完成对 31 个省（自治区、直辖市）“十二五”期末最严格水资源管理制度考核。国务院通报表扬了山东、江苏、浙江、重庆、上海 5 个考核优秀的省（直辖市），各级政府把考核结果纳入干部考评。国务院确定的 2015 年目标指标得到有效管控。19 条跨省重要江河水量分配方案批复实施。加强南水北调东中线一期工程水量调度，东线一期工程的向山东调水 6.02 亿立方米，中线一期工程向北京、天津、河北、河南等 4 省（直辖市）调水共计 37.19 亿立方米，有效保障了北方 5 省（直辖市）用水需求。加强黄河、黑河等重要河流水资源统一调度，黄河干流实现连续 17 年不断流，黑河下游东居延海连续 13 年不干涸。完成京津冀和 8 个试点地区水资源承载能力评价。联合国家发展改革委印发《节水型社会建设“十三五”规划》《“十三五”水资源消耗总量和强度双控行动方案》和《全民节水行动计划》。618 个饮用水水源地纳入《全国重要饮用水水源地名录》管理。105 个水生态文明试点建设

进展顺利，济南市率先通过部省联合验收。开展了 62 个河湖水系连通项目建设，连通河湖水系 162 条，累计安排中央财政资金 30 亿元。河北地下水超采综合治理试点形成 37.8 亿立方米地下水压采能力，南水北调东、中线一期工程受水区累计压采地下水 2.78 亿立方米。完成国家水资源监控能力建设一期项目建设任务，启动二期项目建设。出台《关于加强水资源用途管制的指导意见》《水权交易管理暂行办法》，中国水权交易所成立，完成 10 项交易，交易水量 6.36 亿立方米。

水务管理。截至 2016 年年底，全国组建水务局或由水利局承担水务管理职能的县级以上行政区共计 2698 个，占全国县级以上行政区总数的 83.6%。在组建的 1551 个水务局中，省级水务厅（局）4 个，副省级水务局 8 个，地级水务局 190 个，县级水务局 1349 个。水务系统共有自来水厂 2693 座，供水管道总长 46.47 万公里，自来水供水能力 23735.5 万立方米每日，年供水总量 332.2 亿立方米。全国城市（镇）共有污水处理厂 4700 座，排水管道总长 42.0 万公里，污水处理能力 21965.7 万立方米每日，年污水处理总量 485.3 亿立方米。

建设与管理改革。截至 2016 年年底，全国纳入水管体制改革范围的水管单位 14277 个，经精简撤并调整为 13382 个，较改革前下降 6.3%。13382 个水管单位共落实两项经费 250.3 亿元，落实率达 89%，其中：落实公益性人员基本支出 151.5 亿元，落实率为 94%；落实公益性工程维修养护经费 98.8 亿元，落实率为 76%。实行管养分离（包括内部管养分离）的水管单位 9608 个，占水管单位总数的 72%。2016

年新批准取得水利工程施工监理专业甲级资质单位 25 个，乙级资质单位 53 个，丙级资质单位 107 个；取得水土保持工程施工监理专业甲级资质单位 5 个，乙级资质单位 14 个，丙级资质单位 31 个；取得机电及金属结构设备制造监理专业甲级资质单位 2 个，乙级资质单位 6 个；取得水利工程建设环境保护监理专业资质（不分级）单位 11 个。全年新增取得岩土工程类质量检测甲级资质单位 21 个，取得混凝土工程类质量检测甲级资质单位 29 个，取得金属结构类质量检测甲级资质单位 9 个，取得机械电气类质量检测甲级资质单位 3 个，取得量测类质量检测甲级资质单位 6 个。截至 2016 年年底，累计批准国家级水利风景区 778 个，其中：水库型 352 个，自然河湖型 166 个，城市河湖型 160 个，湿地型 42 个，灌区型 27 个，水土保持型 31 个。

农村水利改革。推动云南、山东、安徽、广西、四川、新疆等省（自治区）农田水利改革试点示范经验在全国范围复制推广和创新，社会资本参与农田水利建设与管护的范围和规模不断扩大。2016 年吸引社会资本投入高效节水灌溉，约占总投资的 13%。截至 2016 年年底，全国 100 个农田水利设施产权制度改革和创新运行管护机制试点县中已有 74 个县试点任务完成 70% 以上，其中 21 个县试点任务基本完成。全国约有一半的小型农田水利工程明晰产权。大型灌区、泵站等管理单位公益性人员基本支出和公益性工程维修养护经费落实率分别达到 70% 和 51%。全国共有乡镇（流域或片区）水利站 29351 个，21 个省（自治区、直辖市）出台基层水利服务机构建设标准。全国发展农民用水合作组织 8.34 万个，管理灌溉面积 3 亿亩，占全国灌溉面积的 29.8%；各地普遍采取政府购买服务、委托经营等方式，探索灌



区、小型农田水利、农村饮水安全等工程专业化社会化物业式管理。

水土保持管理。2016 年，全国共审批生产建设项目水土保持方案 2.92 万个，涉及防治责任范围 11592 平方公里。全年完成生产建设项目的水土保持设施验收 0.7 万个。截至 2016 年年底，全国累计有 29 个省（自治区、直辖市）出台了水土保持法实施办法（条例），23 个省（自治区、直辖市）制定了省级水土保持补偿费征收使用管理办法（标准）。

水价改革。2016 年各地认真贯彻落实《国务院办公厅关于推进农业水价综合改革的意见》（国办发〔2016〕2 号）精神，采取管理创新、价格调整、财政奖补、工程配套等综合措施统筹推进农业水价综合改革，在全国 275 个县开展了农业水价综合改革，实施灌溉面积 2200 万亩，平均每县 8 万亩。改革地区在节水增效、工程达标、结构调整等方面取得阶段成效。

农村水电管理。2016 年，水利部印发实施《关于推进绿色小水电发展的指导意见》。全国已有 17 个省（自治区、直辖市）开展了水能资源使用权有偿出让，16 个省（自治区、直辖市）出台了水能资源管理的规范性文件，12 个省明确由水行政主管部门负责水能资源统一管理。积极推进农村水电站安全生产标准化建设，共建成 1182 座安全生产标准化电站。



水利安全监督。2016 年，水利行业共发生生产安全事故 10 起，死亡 17 人。水利部出台水利生产安全有关制度标准 4 项，累计派出生产安全检查组 74 个，针对岁末年初和汛前等关键时期、重大水利工程建设部和部直属单位等重点对象、监督管理工作年度考核和涉危化学品安全综合治理等重要内容分别开展了重要督查检查工作。组织完成安全生产监管信息化工程（一期）水利部项目初设审批。审定公布水利安全生产标准化一级单位 134 家，其中：水利水电工程施工企业 115 家，水利工程项目法人 2 家，水利工程管理单位 17 家。完成一级以上水利水电工程施工企业主要负责人、项目负责人和专职安全生产管理人员安全生产培训考核 1.4 万余人。全年水利行业共排查各类安全生产隐患 31323 项，整改率为 92%。水利部共派出 8 个批次、145 个稽查组，对 466 个项目开展了稽查，以“一省一单”形式对突出问题项目下发稽查整改意见 191 份。稽查督察覆盖了全国 31 个省（自治区、直辖市）、部分计划单列市和新疆生产建设兵团。推动流域机构和省级水行政主管部门开展自主稽查，共派出 385 个稽查组，稽查项目 1375 个。

水利移民。2016 年在建大中型水库 248 座，开工建设集中安置点 642 个，新建集中安置住房 458.5 万平方米。搬迁人口 127589 人，其中：农村移民搬迁 121647 人，城集镇移民搬迁 5942 人。生产安置 135338 人，其中：农业生产安置 61786 人，逐年补偿 35260 人，货币补偿安置（自行安置）20178 人，养老保障安置 7342 人，投亲靠友安置 891 人，其他安置 9881 人。

水利科技。全年国家立项安排 5.1 亿元资金用于水利科技项目，其中：组织承担国家重点研发计划“水资源高效开发利用”等涉水重点专项 16 项，水利技术示范项目 36 项。水利科技成果获国家科技进步奖 3 项（国家科技进步一等奖 1 项、二等奖 2 项），国家技术发明二等奖 1 项。截至 2016 年年底，水利系统共有国家和部级重点实验室 12 个，工程技术研究中心 15 个。落实中央级科学事业单位修缮购置专项资金 11315 万元，落实中央财政公益性科研院所基本科研业务费 10744 万元。水利行业现行有效标准达 847 项，在编水利技术标准 151 项，列入《水利技术标准体系表》拟编水利技术标准 81 项。

国际合作。2016 年成功举办或参与多边国际交流活动 25 次，签署双边水利合作协议 6 份，组织召开双边政府固定交流机制会议 10 次。2016 年执行的国际金融组织贷款项目 2 个，贷款总金额 2.8 亿美元。利用世行贷款 2 亿美元开展淮河流域重点平原洼地治理项目，已完成世行评估。正在执行的政府间合作项目 5 个，获得立项的国家国际科技合作专项项目 1 个。正在执行的国家国际科技合作专项项目 5 个，专项资金 945 万元人民币。

7

水利行业状况

职工与工资。截至 2016 年年底，全国水利系统从业人员 95.2 万人，比上年减少 2.3%。其中全国水利系统在岗职工 92.5 万人，比上年减少 2.3%。在岗职工中，部直属单位在岗职工 6.4 万人，比上年减少 3.0%，地方水利系统在岗职工 86.1 万人，比上年减少 2.3%。全国水利系统在岗职工工资总额为 640.5 亿元，全国水利系统在岗职工年平均工资 69377 元。

职工与工资情况

| | 2006 年 | 2007 年 | 2008 年 | 2009 年 | 2010 年 | 2011 年 | 2012 年 | 2013 年 | 2014 年 | 2015 年 | 2016 年 |
|-----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 在岗职工人数 /万人 | 109.2 | 106.8 | 105.6 | 103.7 | 106.6 | 102.5 | 103.4 | 100.5 | 97.1 | 94.7 | 92.5 |
| 其中：部直属单位 /万人 | 6.8 | 7.2 | 7.2 | 7.2 | 7.4 | 7.5 | 7.4 | 7.0 | 6.7 | 6.6 | 6.4 |
| 地方水利系统 /万人 | 102.3 | 99.6 | 98.4 | 96.5 | 96.3 | 95.0 | 96.0 | 93.5 | 90.4 | 88.1 | 86.1 |
| 在岗职工工资 /亿元 | 184.3 | 211.3 | 234.4 | 264.7 | 297.9 | 351.4 | 389.1 | 415.3 | 451.4 | 529.4 | 640.5 |
| 年平均工资 /(元/人) | 16776 | 19573 | 22143 | 25633 | 28816 | 34283 | 37692 | 41453 | 46569 | 55870 | 69377 |

水利建设。截至 2016 年年底，全国共有水利水电工程施工总承包特级资质企业 22 家，水利水电工程施工总承包一级资质企业 230 家，一级注册建造师水利水电工程专业资格 20945 人。

全国水利发展主要指标（2011—2016 年）

| 指标名称 | 单位 | 2011 年 | 2012 年 | 2013 年 | 2014 年 | 2015 年 | 2016 年 |
|--------------|-------|--------|--------|--------|--------|--------|--------|
| 1. 灌溉面积 | 千公顷 | 67743 | 67780 | 69481 | 70652 | 72061 | 73177 |
| 2. 耕地灌溉面积 | 千公顷 | 61682 | 62491 | 63473 | 64540 | 65873 | 67141 |
| 其中：本年新增 | 千公顷 | 2130 | 2151 | 1552 | 1648 | 1798 | 1561 |
| 3. 节水灌溉面积 | 千公顷 | 29179 | 31217 | 27109 | 29019 | 31060 | 32847 |
| 其中：高效节水灌溉面积 | 千公顷 | 12926 | 14126 | 14271 | 16114 | 17923 | 19405 |
| 4. 万亩以上灌区 | 处 | 5824 | 7756 | 7709 | 7709 | 7773 | 7806 |
| 其中：30 万亩以上 | 处 | 348 | 456 | 456 | 456 | 456 | 458 |
| 万亩以上灌区耕地灌溉面积 | 千公顷 | 29748 | 30087 | 30216 | 30256 | 32302 | 33045 |
| 其中：30 万亩以上 | 千公顷 | 15786 | 11260 | 11252 | 11251 | 17686 | 17765 |
| 5. 农村自来水普及率 | % | | | | | 76 | 79 |
| 6. 除涝面积 | 千公顷 | 21722 | 21857 | 21943 | 22369 | 22713 | 23067 |
| 7. 水土流失治理面积 | 万平方公里 | 109.7 | 103.0 | 106.9 | 111.6 | 115.5 | 120.4 |
| 其中：本年新增 | 万平方公里 | 4.0 | 4.4 | 5.3 | 5.5 | 5.4 | 5.6 |
| 8. 水库 | 座 | 88605 | 97543 | 97721 | 97735 | 97988 | 98460 |
| 其中：大型水库 | 座 | 567 | 683 | 687 | 697 | 707 | 720 |
| 中型水库 | 座 | 3346 | 3758 | 3774 | 3799 | 3844 | 3890 |
| 水库总库容 | 亿立方米 | 7201 | 8255 | 8298 | 8394 | 8581 | 8967 |
| 其中：大型水库 | 亿立方米 | 5602 | 6493 | 6529 | 6617 | 6812 | 7166 |

续表

| 指标名称 | 单位 | 2011 年 | 2012 年 | 2013 年 | 2014 年 | 2015 年 | 2016 年 |
|----------------|------|--------|--------|--------|--------|--------|--------|
| 中型水库 | 亿立方米 | 954 | 1064 | 1070 | 1075 | 1068 | 1096 |
| 9. 全年水利工程总供水量 | 亿立方米 | 6107 | 6142 | 6183 | 6095 | 6103 | 6040 |
| 10. 堤防长度 | 万公里 | 30.0 | 27.2 | 27.7 | 28.4 | 29.1 | 29.9 |
| 保护耕地 | 千公顷 | 45418 | 42597 | 42573 | 42794 | 40844 | 41087 |
| 堤防保护人口 | 万人 | 59697 | 56566 | 57138 | 58584 | 58608 | 59468 |
| 11. 水闸总计 | 座 | 44306 | 97256 | 98192 | 98686 | 103964 | 105283 |
| 其中：大型水闸 | 座 | 599 | 862 | 870 | 875 | 888 | 892 |
| 12. 年末全国水电装机容量 | 万千瓦 | 23007 | 24881 | 28026 | 30183 | 31937 | 33153 |
| 全年发电量 | 亿千瓦时 | 6507 | 8657 | 9304 | 10661 | 11143 | 11815 |
| 13. 农村水电装机容量 | 万千瓦 | 6212 | 6569 | 7119 | 7322 | 7583 | 7791 |
| 全年发电量 | 亿千瓦时 | 1757 | 2173 | 2233 | 2281 | 2351 | 2682 |
| 14. 当年完成水利建设投资 | 亿元 | 3086.0 | 3964.2 | 3757.6 | 4083.1 | 5452.2 | 6099.6 |
| 按投资来源分： | | | | | | | |
| (1) 中央政府投资 | 亿元 | 1435.4 | 2033.2 | 1729.8 | 1648.5 | 2231.2 | 1679.2 |
| (2) 地方政府投资 | 亿元 | 1223.7 | 1464.5 | 1542.0 | 1862.5 | 2554.6 | 2898.2 |
| (3) 国内贷款 | 亿元 | 270.3 | 265.6 | 172.7 | 299.6 | 338.6 | 879.6 |
| (4) 利用外资 | 亿元 | 4.4 | 4.1 | 8.6 | 4.3 | 7.6 | 7.0 |
| (5) 企业和私人投资 | 亿元 | 74.9 | 113.4 | 160.7 | 89.9 | 187.9 | 424.7 |
| (6) 债券 | 亿元 | 3.9 | 5.2 | 1.7 | 1.7 | 0.4 | 3.8 |
| (7) 其他投资 | 亿元 | 73.4 | 78.3 | 142.1 | 176.5 | 131.7 | 207.1 |
| 按投资用途分： | | | | | | | |
| (1) 防洪工程 | 亿元 | 1018.3 | 1426.0 | 1335.8 | 1522.6 | 1930.3 | 2077.0 |
| (2) 水资源工程 | 亿元 | 1284.1 | 1911.6 | 1733.1 | 1852.2 | 2708.3 | 2585.2 |

续表

| 指标名称 | 单位 | 2011 年 | 2012 年 | 2013 年 | 2014 年 | 2015 年 | 2016 年 |
|---------------|----|--------|--------|--------|--------|--------|--------|
| (3) 水土保持及生态建设 | 亿元 | 95.4 | 118.1 | 102.9 | 141.3 | 192.9 | 403.7 |
| (4) 水电工程 | 亿元 | 109.0 | 117.2 | 164.4 | 216.9 | 152.1 | 166.6 |
| (5) 行业能力建设 | 亿元 | 40.2 | 59.6 | 52.5 | 40.9 | 29.2 | 56.9 |
| (6) 前期工作 | 亿元 | 42.0 | 40.7 | 40.7 | 65.1 | 101.9 | 174.0 |
| (7) 其他 | 亿元 | 496.9 | 291.1 | 328.2 | 244.2 | 337.5 | 636.2 |

说明：1. 本公报不包括香港特别行政区、澳门特别行政区以及台湾省的数据。

2. 节水灌溉面积2013年数据与第一次全国水利普查数据进行了衔接，其他水利发展主要指标2012年统计数据已与第一次全国水利普查数据进行了衔接。其中，堤防长度与水利普查成果衔接后，进一步明确为5级及以上堤防。

3. 2011年及以前万亩以上灌区处数及灌溉面积按有效灌溉面积达到万亩进行统计，2012年按设计灌溉面积达到万亩以上进行统计。

4. 农村水电的统计口径为单站装机容量5万及5万千瓦以下的水电站及其配套电网。其中，年末全国水电装机容量和全国水电全年发电量数据来源于中电联发布的2015年电力工业统计快报。



2016 STATISTIC BULLETIN ON CHINA WATER ACTIVITIES

Ministry of Water Resources, P. R. China

Being the opening year of 13th Five-Year Plan, the year of 2016 was of great significance to water development and reform in China. Under the strong leadership of the Party Central Committee and the State Council, government officials and people working in the water field determined to forge ahead and overcome difficulties by taking innovative approaches and working hard in a down-to-earth manner. Remarkable achievements had been made in water governance and making beneficial use of water. We made a good start in water development and reform in 13th Five-Year Plan period, which lays a solid foundation and guarantee for a sustainable and healthy development of our economy and society.

I. Investment in Fixed Assets

Completed investment for water project construction in 2016 amounted to 609.96 billion Yuan, with an increase of 64.74 billion Yuan or 11.9% comparing to the year of 2015. In which, 442.20 billion Yuan put into construction project with a 6.5% increase; 25.45 billion Yuan for installation with an increase of 11.2%; 17.28 billion Yuan for purchase of machinery, electric equipment and instruments, with a decrease of 13.0%; and 125.03 billion Yuan for other purposes (including compensation of resettlement and land acquisition), with an increase of 43.1%.

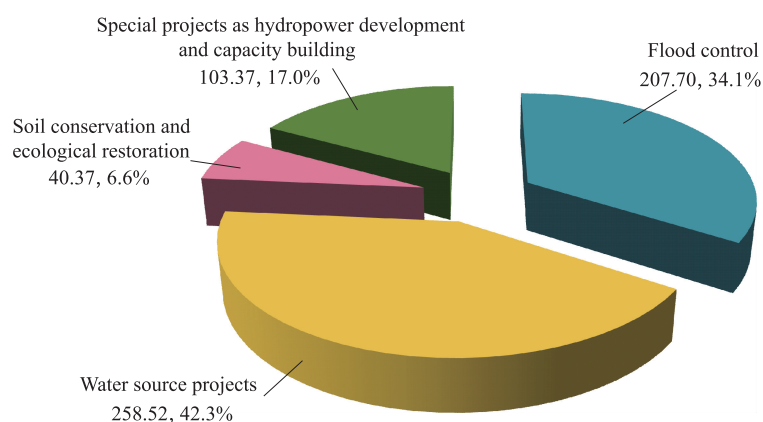
| | 2010 /billion Yuan | 2011 /billion Yuan | 2012 /billion Yuan | 2013 /billion Yuan | 2014 /billion Yuan | 2015 /billion Yuan | 2016 /billion Yuan | increase /% |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|----------------|
| Completed of the year | 231.99 | 308.60 | 396.42 | 375.76 | 408.31 | 545.22 | 609.96 | 11.9 |
| Construction project | 152.49 | 210.32 | 273.65 | 278.28 | 308.64 | 415.08 | 442.20 | 6.5 |
| Installation project | 10.96 | 12.27 | 23.78 | 17.36 | 18.50 | 22.88 | 25.45 | 11.2 |
| Procurement of instruments and equipment | 12.45 | 11.52 | 17.81 | 16.11 | 20.61 | 19.87 | 17.28 | -13.0 |
| Others (including compensation for resettlement and land expropriation) | 56.09 | 74.59 | 81.18 | 64.02 | 60.56 | 87.39 | 125.03 | 43.1 |

In the total completed investment, 207.70 billion Yuan was allocated to the construction of flood control projects, 258.52 billion Yuan for the construction of water resources projects, 40.37 billion Yuan for soil and water conservation and ecological restoration, and 103.37 billion Yuan for special projects, such as hydropower development and capacity building.

The completed investment for the seven major river basins reached 476.15 billion Yuan, of which 133.81 billion Yuan was invested in river basins in the southeast, southwest and northwest of China. Completed investments in eastern, middle western and northeast, regions were 235.84 billion Yuan, 116.34 billion Yuan, 223.49 billion Yuan and 34.29 billion Yuan, accounting 38.7%, 19.1%, 36.6%, 5.6% of the total, respectively.

Completed investment of projects in 2016

unit: billion Yuan



Of this total completed investment, the Central Government contributed 8.87 billion Yuan, and local governments contributed 601.09 billion Yuan. The completed investment of large and medium-sized projects was 108.00 billion Yuan; the completed investment of small-sized and other projects was 501.96 billion Yuan; the completed investment of newly-constructed project was 477.57 billion Yuan; and the completed investment of reconstruction and expansion was 132.39 billion Yuan.

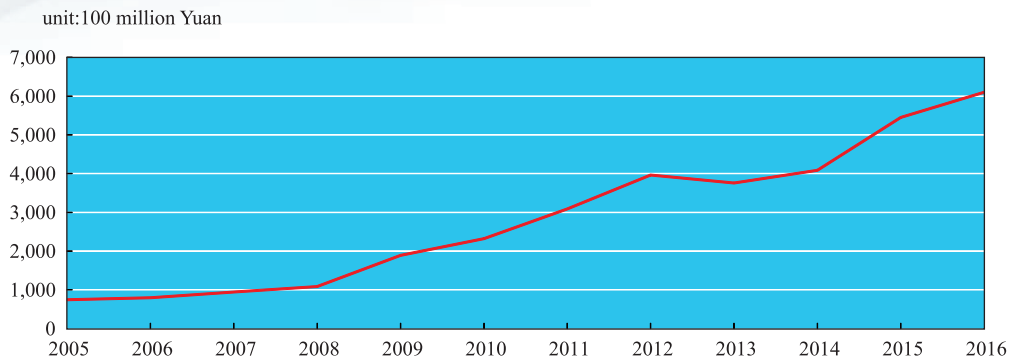
The newly-added fixed assets of projects under-construction totaled 404.67 billion Yuan. By the end of 2016, the accumulated completed investment of projects under construction was 1,417.43 billion Yuan, and the rate of completed investment reached 60.1%. The newly-added fixed assets totaled 911.57 billion Yuan and the rate of investment transferred into fixed assets was 64.3%, an increase of 2.8% comparing to 2015.

A total of 26,331 water projects were under construction in 2016, with a total investment of 2,162.91 billion Yuan, with an increase of 4.2% comparing to that of

the year before. The projects with Central Government finance were 16,479 with a decrease of 23.1% comparing to the year before. The total funds used by projects under construction reached 1,212.13 billion Yuan and decreased 19.8% comparing to the year before. There were 18,410 newly-constructed projects in 2016, with an increase of 10.2% and newly-added investment was 691.48 billion Yuan with an increase of 28.3%.

The completed civil works of earth, stone and concrete structures were 3.98 billion m³, 700 million m³, and 90 million m³, respectively. By the end of 2016, the proportion of complete quantity of earthwork, stonework, and concrete of the under-construction projects were 84.0%, 91.8% and 60.5%, respectively.

Completed Investment in Fixed Assets Investment



II. Key Water Projects Construction

Harness of large rivers and lakes. In 2016, there were 5,606 river harness projects under construction, including 527 flood control dyke and embankment construction, 593 projects for large river and main tributary control and 3,530

medium and small river control works and 956 flood diversion and storage areas or other projects. By the end of 2016, the accumulated investment in projects under construction was 379.10 billion Yuan, with a completion rate of 60.0%. The projects namely Restoration of Three Rivers in Northeast as well as Dongting Lake and Poyang Lake sped up construction. Huai River improvement project was under implementation. Among 38 projects, 25 project were initiated construction in the year of 2016 and 6 projects completed or almost completed. The first project passed check and acceptance was Embankment Reinforcement of Hongze Lake. Comprehensive Improvement of Water Environment of Taihu Lake was under construction and 8 projects such as extension and dredging of Zoumatang were all completed.

Reservoir projects. There were 369 reservoir projects under construction in 2016. By the end of 2016, the completed investment of under-construction projects reached 193.97 billion Yuan, accounting for 59.8% of the total completed investment. Following projects started construction, including Huangzangsi Multipurpose Project in Heihe River Basin, Zhuxi Reservoir in Zhejiang Province, Jiangxiang Reservoir in Anhui Province, Huokou Reservoir in LuoYuan of Fujian Province, Maojun Reservoir in Hunan Province, Tuoying Reservoir and Irrigation Districts in Guangxi, Huangjiawan Reservoir in Guizhou province, Tuxikou Reservoir, Lijiayan Reservoir, Huangshipan Reservoir in Sichuan Province, Agang Reservoir in Yunan Province and heightening of Hongyanshan Reservoir in Gansu Province. Dams of Datengxia Multipurpose project in Xijiang River Basin and Chushandian in Huaihe River Basin accelerated construction. Qianping Reservoir in Henan, Laluo Multipurpose project in Tibet, Aertashi Multipurpose project in Xinjiang, Guanjingkou Multipurpose project in Chongqing, Maling Multipurpose project in Guizhou, Dehou Reservoir in Yunnan, Xujixia Multipurpose project in Qinghai were damming up. Expansion of Qintianhe Reservoir project in Hunan Province had completed water impoundment. Baise Multipurpose Project in Youjiang Basin and Zaoshi Multipurpose Project passed check and acceptance.

Water allocation projects. The yearly investment for water allocation projects reached to 464.81 billion Yuan. The completed investment had accumulated to 259.06 billion Yuan, accounting for 55.7% of the total. The initiated projects of the year include Water Diversion from Yangtze to Huaihe River, Phase-III Water Diversion to Zhoushan Island, Water Supply to Pingtan and Minjiang River Estuary, Irrigated Areas of Chaishitan Reservoir, Pengchuan Irrigation District of Wudu Water Diversion Scheme in Sichuan Province, Phase-II Irrigation District of Liaofang Multipurpose Water Project in Jiangxi, West Main Canal and Irrigation District of Water Diversion Project from Datong River to Huang Basin in Qinghai. The projects in full operation include Water Diversion from Han River to Wei River, Water Supply to North of Hubei, Phase-II Tao River Water Diversion in Gansu, Jiayan Water Complex in Guizhou and Main Works of Water Supply Scheme to Northwest of Guizhou.

Irrigation, drainage and rural water supply. The completed investment for strengthening and improving safe drinking water supply reached 24.00 billion Yuan, among which 3.00 billion Yuan from central government subsidy, with a beneficial population of 39.00 million of which 6.00 million listed in national plan for poverty reduction. By the end of 2016, the rural population access to tap water supply made up a percentage of 79.0%. The Central Government allocated 16.15 billion Yuan (including 15.45 billion Yuan listed in Key Water Project) for construction of irrigation systems, rehabilitation of 164 large irrigation districts for water saving purpose, newly-construction of 13 irrigation districts and rehabilitation of large pumping stations in 8 provinces (autonomous regions). There were 36.69 billion Yuan allocated to the construction of small-scale farmland waterworks for irrigation and drainage and rural water supply, in the respects of highly-efficient water saving irrigation, counterpart system for on-farm irrigation system, as well as small water cellars, ponds, pumping stations, weirs and canals. The newly-added effective irrigated area reached 1,561,000 ha; new-added water-saving irrigated area was 2,495,000 ha and newly-added highly-efficient water-saving irrigated area was 1,455,000 ha.

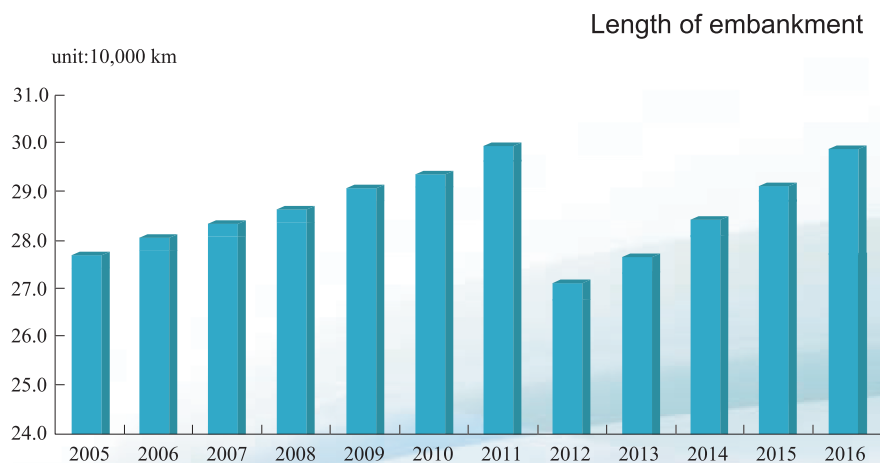
Rural hydropower and electrification. In 2016, the completed investment of rural hydropower station construction amounted to 24.9 billion Yuan; the newly increased hydropower stations were 312, with a total installed capacity of 2.03 million kW. Installed capacity of new production reached to 1.55 million kW, Net capacity of power generation by technological transformation reached to 0.48 million kW. The completed investment for rural electricity network in the whole country was 8.4 billion Yuan; the newly increased capacity of 110kV substation or above was 3.66 million kVA; the newly increased capacity of 35 (63) kV substation was 1.31 million kVA; the capacity of distribution transformer was 5.95 million kVA. The newly-added high pressure transmission line and low pressure line were 17,000 km and 32,000 km, respectively.

Soil and water conservation. A total of 52.00 billion Yuan was allocated to construction of soil and water conservation and ecological restoration project in 2016, with an accumulated investment of 47.31 billion Yuan. The newly-added areas with soil conservation measures reached 56,200 km², of which the area under National Major Project for Soil Conservation was 11,600 km². The newly-added area for protection of forest reached 16,000 km². There were 221 silt-retention dam on Loess Plateau at high risk were strengthened and rehabilitated. The newly built basic farmlands were 574,000 ha (including slope farmland). The newly-built forestland for conserving soil and water reached 1,690,000 ha and grassland 423,000 ha.

Capacity building. The completed investment for capacity building in 2016 was 3.80 billion Yuan, of which 0.44 billion Yuan spent on procurement of communication equipment for flood control, 1.53 billion Yuan for hydrological facilities, 0.14 billion Yuan for scientific research and education facilities and 1.69 billion Yuan for others.

III. Key Water Facilities

Embankments and water gates. In 2016, the completed river dykes and embankments ranging at Grade-V or above had a total length of 299,000 km^①. The accumulated length of dykes and embankments met the standard reached 201,000 km, with a percentage of 67.2% of the total. The length of embankment met the standard of Grade-I and Grade-II were 32,000 km, with a percentage of 79.2% of the total. These embankments can protect 600 million people and 41,000,000 ha of cultivated land. The number of water gates with a flow no less than 5 m³/s increased to 105,283, of which 892 were large water gates. Divided by types of water gates, there were 10,557 flood diversion sluices, 18,210 drainage/return water sluices, 5,153 tidal barrages, 14,350 water diversion intakes and 57,013 controlling gates.

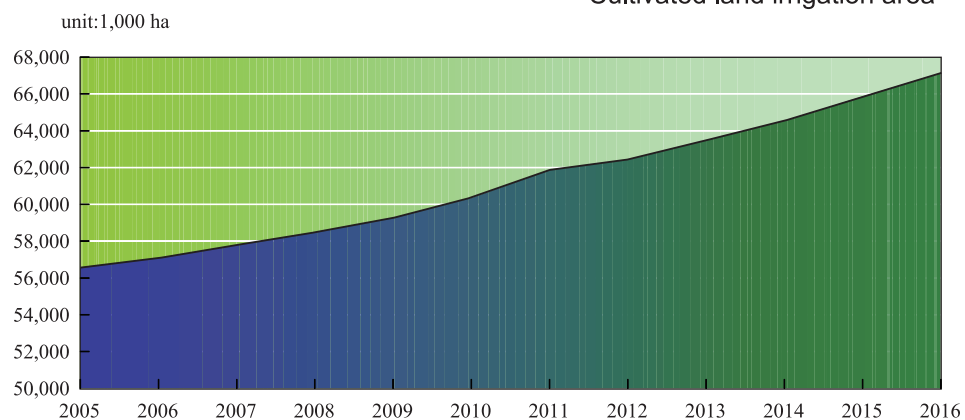


① The length of embankment before 2011 includes embankment below Grade-V.

Reservoirs and water complexes. The number of reservoir in China reached 98,460, with a total storage capacity of 896.7 billion m^3 . Of which 720 belong to large reservoirs with a total capacity of 716.6 billion m^3 , accounting 79.9% of the total; 3,890 medium-sized reservoirs with a total capacity of 109.6 billion m^3 , accounting 12.2% of the total.

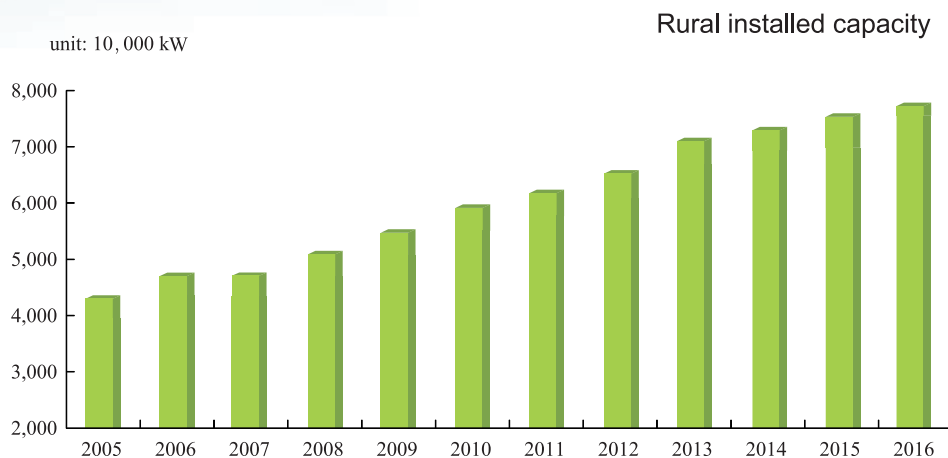
Irrigation. Irrigation districts with an area equal or above 2,000 mu added to 22,689, with a total effective irrigated area of 37.208 million ha. In which, the irrigation districts equal or above 500,000 mu reached 177, with a total irrigated area of 12.335 million ha; the irrigation districts covering an area from 300,000 to 500,000 mu reached 281, with a total irrigated area of 5.430 million ha. By the end of 2016, the total irrigated area and irrigated area of cultivated land reached to 73.177 million ha and 67.141 million ha respectively, taking 49.6% of the total cultivated land in China. The areas with water-saving irrigation facilities totaled 32.847 million ha, among which 9.954 million ha equipped with sprinkler or micro irrigation systems and 9.451 million ha installed low-pressure pipes.

Cultivated land irrigation area



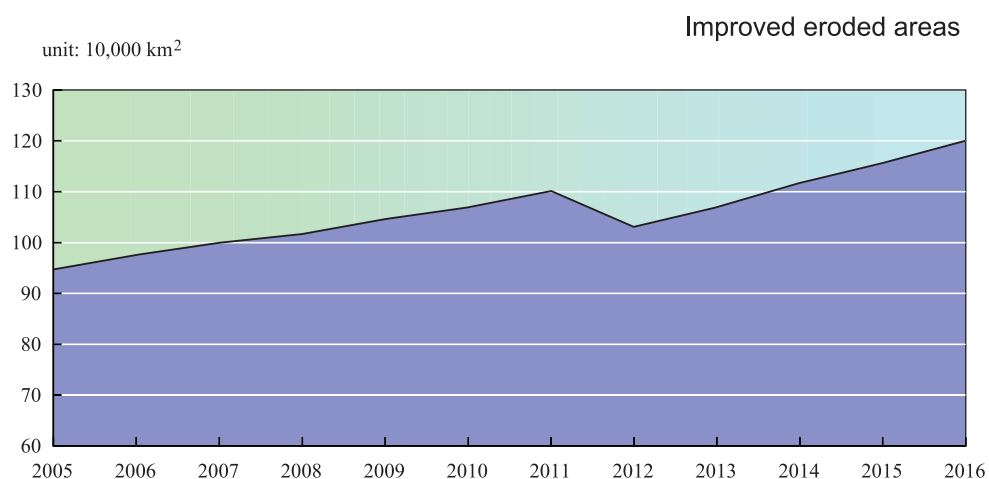
Tube wells and pumping stations. A total of 4.872 million tube wells, with a daily water abstraction capacity equal or larger than 20 m³ or an inner diameter larger than 200 mm, were employed for water supply in the whole country. A total of 91,820 pumping stations that have an installed flow of 1 m³/s or installed capacity above 50 kW were in operation, among which 371 categorized as larger pumping stations, 4,200 medium-size and 87,249 small – size pumping stations.

Rural hydropower and electrification. By the end of 2016, hydropower stations built in rural areas totaled 47,529, with an installed capacity of 77.91 million kW, accounting for 23.5% of the national total. The annual power generation by these hydropower stations reached to 268.2 billion kWh, accounting for 22.7% of the national total.



Soil and water conservation. By the end of 2016, the restored eroded areas reached 1.204 million km²; protected area for ecological restoration accumulated to 816,000 km². Dynamic monitoring for soil and water loss had been conducted in 19 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 area of about 615,000 km² for sampling monitoring. Positional observation had been applied to 69 typical small watersheds of various types of soil erosion and 92 typical monitoring sites.



Hydrology and informationization. By the end of 2016, the number of hydrological stations of all kinds increased to 103,962 in the whole country, including 3,140 national basic hydrologic stations, 3,626 special hydrologic stations, 12,591 gauging stations, 51,084 precipitation stations, 14 evaporation stations, 1,989 soil moisture monitoring stations, 14,499 water quality stations, 16,967 groundwater monitoring stations and 52 experimental stations. There were 51,596 various kinds of hydrological monitoring stations that provide hydrological information to flood control commanding headquarters at and above the county level; 1,450 various kinds of hydrological monitoring stations for early warning and forecasting. A total of 322 water environment monitoring centers (sub-centers) in operation. Water quality monitoring had been conducted in nearly all major rivers, lakes and reservoirs in China. Water ecological monitoring has gradually popularized.

The servers of varied kinds equipped by water resources departments at or above the provincial level reached 5,474, including 1,413 internet server, 4,061 servers outside the web. The counterpart net-connected computers of various kinds reached 91,384, among which 19,253 for internet and 72,131 for outer net. The total structured data stored in database of water resources departments at or above provincial level reached 985,037 GB and the total unstructured data reached 661,097 GB. Currently, there are 1,008 small satellite station, 4,275 other satellite networks, 46 portable satellite stations, 2,487 wireless broadband access terminals and 7,160 cluster communication terminals in operation. A total of 181,161 gathering points were available for water departments at or above the provincial level to receive various kinds of water-related information, among which 144,693 points were automatic.

IV. Water Resources Utilization and Protection

The national water availability in 2016 was 3,246.64 billion m^3 , 17.1% more than normal years. Mean annual precipitation was 730.0 mm that was 13.6% more than the normal years and 10.5% more than the year before. By the end of 2016, total water storage of 639 large reservoirs reached 350.35 billion m^3 , 3.68 billion m^3 less compared with that of the year before; total water storage of 3,410 medium-size reservoirs were 45.02 billion m^3 , 0.39 billion m^3 less than that in early 2016.

In 2016, the total water supply amounted to 604.02 billion m^3 , among which 81.3% came from surface water, 17.5% from underground water and 1.2% from other water sources. The total water consumption amounted to 604.02 billion m^3 , of which domestic use amounted to 82.16 billion m^3 or 13.6% of the total; industrial use 130.8 billion m^3 or 21.6% of the total; agricultural water use 376.8 billion m^3 or 62.4% of the total; environmental water use of 14.26 billion m^3 or 2.4% of the total. Comparing to that of the year before, water consumption reduced by 6.3

billion m^3 , in which domestic water use increased by 2.81 billion m^3 , industrial use decreased by 2.68 billion m^3 , agricultural water use decreased by 8.42 billion m^3 and environmental water use increased by 1.99 billion m^3 .

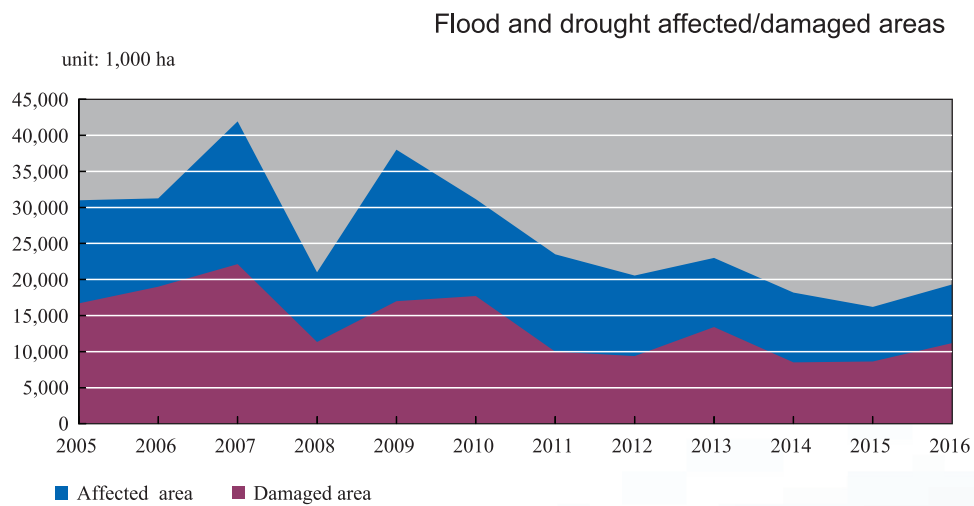
Water consumption per capita in 2016 was 438 m^3 in average. Water use of 10,000 Yuan GDP (at price of the same year) was 81 m^3 , a 7.2% decrease comparing to that of the year before. Water use of industrial production value added per 10,000 Yuan (at price of the same year) was 52.8 m^3 , 7.6% less comparing to that of the year before.

According to the results of national water quality assessment on river sections of 235,000 km long, the length of river complied with or were better than class-III standard amounted to 76.9% of the total.

V. Flood Management and Drought Relief

Generally speaking, the damage caused by flood and water-logging disasters in 2016 was relatively less than other years. Nevertheless, a total of 9.443 million ha of cultivated land were affected by floods, resulting in no harvest of 5.063 million ha of farmland, 101 million people affected, 686 people died, and 207 missing. A total of 430,000 houses were destroyed and 192 cities suffered from inundation. The disasters resulted in 364.3 billion Yuan of direct economic losses, among which the loss with water infrastructures reached 69.8 billion Yuan. Provinces suffered from severe flooding include Hubei, Anhui, Hebei, Hunan and Fujian. Death toll or people missing caused by mountain flood took 68% of the total in 2016. The direct economic loss caused by typhoons took 17% of the total loss as a result of flood and waterlogging disasters.

In 2016, no large scale drought occurred in the whole country. Drought affected areas were mainly concentrated in provinces or autonomous region of Heilongjiang, Inner Mongolia and Gansu. The affected farmland was 9.873 million ha, of which 6.131 million ha damaged, with a direct economic losses of 48.4 billion Yuan. A total of 4.69 million urban and rural population and 6.5 million man-feed big animals and livestock suffered from temporary drinking water shortage caused by the drought.



In 2016, the funds allocated to defense extraordinary floods and droughts amounted to 3.95 billion Yuan, among which 3.44 billion Yuan for extraordinary floods and 0.51 billion Yuan for extraordinary droughts.

Thanks to the efforts of flood control, 6.767 million ha of cultivated land were prevented from inundation and 173 times of flooding in cities were avoided, which brought economic benefits of disaster reduction amounting to 235.4 billion Yuan. Drinking water was provided to 4.08 million people in rural and urban areas as well

as 4.52 million big animals and livestock in order to alleviate temporary water shortage. The area with anti-drought measures reached 16.475 million ha that prevented a loss of 18.2 billion kg of grain. The accumulative inputs for flood disaster relief include 24.03 million person-time, 61,000 vessel-time, 634,000 shifts of transportation and 488,000 shifts of mechanical equipment. The consumed materials valued 13.61 billion Yuan. The person-time of emergency evacuation was 14.6 million. The person-time of rescue from flooding reached 1.35 million. The labor input for drought relief was 23.49 million person-time. There were 2.82 million tube wells, 37,000 pumping stations, 4.91 million mobile devices and 0.52 million various kinds of water transporting vehicle employed for drought relief.

VI. Water Management and Reform

Water resources planning and early-stage work. In 2016, there were 25 water resources plans approved by central government agencies, among which *13th Five-Year Plan for Water Development and Reform* was approved by the State Council, 2 plans including *National Plan for Medium and Long-term Water Demand and Supply* were approved by National Development Reform Commission (NDRC), 22 plans were approved by the Ministry of Water Resources (MWR). Stead progress were made by Special Program of Water Resources for National Major Strategy. *Special Plan of Water Resources for Integrated Development of Beijing-Tianjin-Hebei Region* was issued and implemented. *Special Plan of Water Resources for Yangtze River Economic Belt* came out. Planning and programming at national and river basin levels were promoted and the Plan for *River Channel Training in Middle and Lower Reaches of Yangtze River* and *Master Plan of Yiluo River Basin* were approved and issued.

In 2016, a total of 32 projects were delivered to NDRC for approval by the Ministry of Water Resources, with a total investment of 342.4 billion Yuan, among which 30 approved, including 3 project proposals, 23 feasibility study reports and 4 project

plans, with a total investment of 245.22 billion Yuan. There were 7 preliminary designs approved by MWR, with a total investment of 16.77 billion Yuan.

Water legislation and administrative enforcement. Being the first administrative law relating to farmland irrigation and drainage and rural water supply since the founding of New China in 1949, *Regulations on Irrigation and Drainage and Rural Water Supply* came into effect starting from July 1, 2016. Amendments to some provisions in *Water Law*, *Flood Control Law* and *Hydrology Regulations* were completed. Interim Measures for Management of Trading Platform of Public Resources was drafted jointly by 13 ministries or administrative departments including NDRC and MWR.



In 2016, MWR has abolished 2 and amended 4 ministerial rules and regulations. There were 970 water-related administrative approvals or permits authorized/extended, including 4 preliminary design documents of water construction projects, 7 approvals for evaluation reports of flood impact by non-flood control project, 109 approvals of soil and water conservation plan of production and construction projects; 135 check and acceptance of soil and water conservation plans of construction projects; 75 licenses of headstock gear utilization; approval of establishment or reorganization of 6 national hydrological stations; approval of qualifications (including new application, extension, adding of new items or promotion) for 413 construction supervisors of water resources projects; qualification identifications (including application and extension) for 221 quality supervisors of water-related projects.

In 2016, national law enforcement patrol found out, stop and settled 110,504 cases at the site where water-related rules and regulations were being violated. The investigated illegal cases totaled 14,864 and 12,703 or 85.5% of them resolved. A total of 2,573 water disputes were mediated and 2,513 resolved. There were 28 administrative reconsideration cases received by MWR that all being concluded.

Implementation of stringent water resources management system. Performance evaluation of 31 provinces, autonomous regions or municipalities on implementation of stringent water resources management system during 12th Five-Year Plan period had been conducted by 8 ministries including Ministry of Water resources and NDRC. The State Council circulated a notice of commendation to praise five provinces or municipalities, namely Shandong, Jiangsu, Zhejiang, Chongqing and Shanghai, for their excellent performances. These results were included in the evaluation and assessment of governmental agencies at each level. The indicators of objectives in 2015 defined by the State Council had been carried out effectively. Water allocation plans of 19 major trans-province rivers had been approved and

implemented.

Water diversion of first phases of South-to-North Water Diversion Project had been conducted in order to satisfy water demand of five provinces or municipality in the North; 602 million m^3 were diverted by Phase-I of Eastern Route Scheme to Shandong; 3.719 billion m^3 of water diverted from Phase-I of Middle Route Scheme to Beijing, Tianjing, Hebei and Henan. Integrated regulation of water resources of major rivers including Yellow River and Heihe has been strengthened that prevented drying up of Yellow River mainstream for 17 consecutive years and Juyanhai East in the downstream of Heihe River for 13 consecutive years. Assessments of carrying capacity of water resources were completed for Beijing, Tianjing, Hebei and other 8 pilot areas. NDRC issued *13th Five-Year Plan for Construction of Water-saving Society, Action Plan for Control of Total Water Consumption and Its Intensity in 13th Five-Year Plan Period* and *Action Plan for Nationwide Water Conservation Drive*.

There were 618 drinking water sources included in the List of *National Major Drinking Water Sources*. Progress had been made by 105 pilot projects for implementing water ecological civilization campaign, with Jinan City passed the joint check and acceptance of the province and ministries. Project of Linking 62 River-Lake Water Systems had been carried out that connected 162 rivers and lakes, with an accumulative allocation of 3 billion Yuan from the central government finance.

The pilot project in Hebei Province had reduced abstraction of 3.78 billion m^3 groundwater and water receiving areas of Phase-I of the Middle Route Scheme of South-to-North Water Diversion reduced 278 million m^3 of groundwater withdrawal. Phase-I of National Project of Capacity Building for Water Resources Monitoring was completed and Phase-II was initiated. *Guidance for Strengthening Regulation of Purpose of Water Resources Utilization* and *Interim Measure for Management of*

Water Right Trading were issued. China Water Exchange were set up and completed 10 deals with a total trading volume of 636 million m³ of water.

Water affairs management. By the end of 2016, a total of 2,698 water authorities or water resources bureaus being in charge of water affair management established in the whole country, accounting for 83.6% of the total administrative regions above the county level. Among 1,551 established water authorities, there were 4 at provincial level, 8 at sub-provincial level, 190 at prefecture or city level, and 1,349 at county level. There were 2,693 water plants operated by utilities under these water authorities, with 464,700 km of water supply pipes, 237.355 million m³ of daily water supply capacity and 33.22 billion m³ of yearly water supply. A total of 4,700 sewage treatment plants were in operation, with a total pipeline of 420,000 km long and daily treatment capacity of 219.657 million m³/d. The annual amount of sewage treatment reached to 48.53 billion m³.

Construction and management reform. By the end of 2016, there were 14,277 water utilities included in the list for water management system reform, and reduced to 13,382 water utilities through merger and reorganization, with a reduction of 6.3% comparing to the number of organizations before the reform. A total of 25.03 billion Yuan had been allocated to 13,382 water utilities for covering cost of managerial staff and operation and maintenance, which covered 89% of the total. Among which, 15.15 billion Yuan were used for covering basic expenses of staff, which accounted 94% of the total; 9.88 billion Yuan used for operation and maintenance of water facilities, which accounted 76% of the total. Reform of management system by separating functions of administration with operation had been implemented in 9,608 utilities, accounted for 72% of the total.

In 2016, there were 25 enterprises awarded as Class-A qualification of supervisors

for water and hydropower project construction, 53 Class-B qualification and 107 Class-C qualification. There were 5 enterprises awarded as Class-A qualification of supervisors for soil and water conservation project construction, 14 Class-B qualification and 31 Class-C qualification. There were 2 enterprise awarded as Class-A qualification of supervisors for electromechanical and metal equipment manufacture and 6 Class-B qualification. A total of 11 enterprises met the qualification (no classification is given) of supervisors for environment protection of water project construction. There were 21 enterprises awarded as Class-A quality inspection organizations for geotechnical engineering approved; 29 Class-A quality inspection organizations for concrete structures; 9 Class-A quality inspection organizations for metal structures; 3 Class-A quality inspection organizations for mechanical and electronic equipment; and 6 obtained Class-A organization for quality inspection.

By the end of 2016, the approved national water scenery spots reached 778, including 352 reservoirs, 166 natural rivers and lakes, 160 lake or riverine cities, 42 wetlands, 27 irrigation districts and 31 soil conservation areas.

Reform in rural water resources management. The experiences obtained from pilot projects for reform of management system of irrigation and drainage and rural water supply in provinces of Yunnan, Shandong, Anhui, Gaungxi, Sichuan and Xinjiang had been widely extended to other provinces and adopted in an innovative way. Private sector has actively engaged and participated in the construction, operation and maintenance of farmland waterworks. In 2016, the funding from private sector to high-efficient water-saving irrigation amounted to 13% of the total investment. There were 74 out of 100 pilot counties implementing reform of property right of farmland waterworks and innovative operation and maintenance mechanism had completed more than 70% of their mission and tasks, among which 21 counties had fully completed their assignments. The coverage rates of cost of basic personal

expenses in large irrigation districts and pumping station as well as operation and maintenance of public-good waterworks were 70% and 51% respectively. There were 29,351 township (river basin or district) established water stations in the whole country and standards was issued for these primary service providers that distributed in 21 provinces (autonomous regions or municipalities). A total of 83,400 farmer water cooperative associations established in China who took charge of 300 million mu of irrigated land, i. e. 29.8% of the country's total irrigated area. The approaches of government procurement of services and contract-out or outsourcing had been widely adopted, so as to introduce professionalized property management for waterworks in irrigation districts as well as facilities for rural water supply.

Soil and water conservation. In 2016, a total of 29,200 soil and water conservation plans of construction projects being examined and approved, covering a scope of 11,592 km² for protection and control. A total of 7,000 soil and water conservation projects completed check and acceptance. By the end of 2016, there were 29 provinces (autonomous regions or municipalities) promulgated the implementing provisions or regulations of Soil and Water Conservation Law; and 23 provinces (autonomous regions or municipalities) made public the methods (standards) for the collection, utilization and management of compensation fee for soil and water conservation.

Water pricing reform. In 2016, *the Opinions of the General Office of the State Council on Promoting Agricultural Water Pricing Reform* (Guofaban No.2 Document) had put into full implementation. Reform of pricing system for agricultural water use has been promoted by means of innovative management, price adjustment, financial subsidy and counterpart structures. There were 275 counties carried out reform of pricing system for agricultural water use, with an area of 22 million mu or 80,000 mu per county in average. Great achievements had

been made in these areas in terms of water saving and benefit increase, higher rate of water structures reaching standard and adjustment of economic pattern, thanks to the reform.

Reform of hydropower management system. In 2016, *Guidance on Promoting Green Small Hydropower Development* was issued for implementation. There were 17 provinces (autonomous regions, municipalities) started transformation of water use right on parable basis. Administrative rules and regulations for water-power resource development and utilization were promulgated and implemented 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, where had built 1,182 standardized plants for safety production.

Production safety supervision. In 2016, there were 10 production accidents with 17 people dead. MWR enacted four standards related to safe production of water project and sent 74 teams for inspection, with focuses on the times such as end or early of the year and flood season, construction of backbone water schemes and enterprises directly under the ministry, annual evaluation for supervision and monitoring work and control of highly-hazard chemicals. Preliminary design of information system for production safety monitoring (phase-I) was approved. There were 134 enterprises meet the level-I evaluation standard for water safety production, including 115 water and hydropower construction company, 2 legal persons of water projects and 17 water project management units. Training and performance evaluation had been completed for 14,000 persons in level-I enterprises, including people in charge of construction enterprises, projects and professional safety production managers.

Due to check and inspection, 31,323 potential accidents were avoided that amounted to 92% of the total. MWR sent 8 batches of groups including 145 missions for inspection of 466 projects. There were 191 feedbacks of inspection and rectification comments were delivered one by one to each province regarding prominent problems. The inspection and supervision covered 31 provinces (autonomous regions, municipalities), some cities with independent planning status and Xinjiang Production and Construction Corps. Self-inspection of provincial water administrative departments had been encouraged and a total of 385 inspection groups were sent out for reviewing 1,375 projects.

Reservoir resettlement. There were 248 large and medium reservoirs under construction in 2016, with 642 concentrated relocation sites constructed and centralized newly-constructed housing of 4.585 million km^2 . The resettled population was 127,589, among which 121,647 were relocated rural residents and 5,942 relocated urban residents. A total of 135,338 of resettled people were arranged for production activities, among which 61,786 arranged for agricultural production, 35,260 people compensated on a yearly basis, 20,178 compensated by monetary means (arranged by themselves), 7,342 people joined pension plans, 891 people seeking help from their relatives and friends and 9,881 people with other arrangements.



Water science and technology. A total of 510 million Yuan had been allocated to science and technology projects, including 16 special-subject and water-related scientific research projects listed in the National Key Research and Development Plan-*Effective Development and Utilization of Water Resources*, and 36 demonstration project for water technologies. There were 3 water technological achievements won the National Sci-Tech Advance Award (1 first prize and 2 second prize) and 1 project won the second prize of National Technological Innovation Award. By the end of 2016, 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 113. 15 million Yuan. A total of 107. 44 million Yuan had been allocated from central government finance as operation expenses for basic scientific studies of public research institutes. There were 847 currently valid ministerial norms and standards and 151 under draft water-related technical standards. There were 81 proposed technical norms and standards listed in the Table of Water-related Technical Standard System.

International cooperation. In 2016, a total of 25 multilateral cooperation and exchange activities were successfully conducted, with 6 bilateral cooperation agreement signed. Under the fixed mechanism for bilateral exchange of government agencies, 10 meetings were organized and held. Two projects with loans borrowed from international financial organizations had been undertaking, with a total borrowing of 280 million US 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 5 governmental cooperation projects under implementation and 1 special project for international cooperation and science and technology at national level approved. There were 5 special projects for international cooperation and science and technology at national level under implementation, with a funding of 9. 45 million Yuan.

VII. Current Status of Water Sector

Employees and salaries. By the end of 2016, the employees of water sector were totaled 0.952 million, a 2.3% decrease comparing to that the year before. Of which the employees with long-term post amounted to 0.925 million, a 2.3% decrease. In the employees with long-term post, the staff working in the agencies directly under the Ministry of Water Resources was 64,000, a 3.0% decrease over the year before; the staff working in local agencies was 0.861 million, a 2.3% decrease. The total salary for the employees with long-term post in the whole country was 64.05 billion Yuan, and the average salary per employee with long-term post was 69,377 Yuan.

Employees and Salaries

| | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| number of in service staff/10 ⁴ persons | 109.2 | 106.8 | 105.6 | 103.7 | 106.6 | 102.5 | 103.4 | 100.5 | 97.1 | 94.7 | 92.5 |
| of which, staff of MWR and agencies under MWR/10 ⁴ persons | 6.8 | 7.2 | 7.2 | 7.2 | 7.4 | 7.5 | 7.4 | 7.0 | 6.7 | 6.6 | 6.4 |
| local agencies /10 ⁴ persons | 102.3 | 99.6 | 98.5 | 96.5 | 96.3 | 95.0 | 96.0 | 93.5 | 90.4 | 88.1 | 86.1 |
| salary of in-service staff/10 ⁸ Yuan | 184.3 | 211.3 | 234.4 | 264.7 | 297.9 | 351.4 | 389.1 | 415.3 | 451.4 | 529.4 | 640.5 |
| average salary / (Yuan/person) | 16776 | 19573 | 22143 | 25633 | 28816 | 34283 | 37692 | 41453 | 46569 | 55870 | 69377 |

Water project constructors. By the end of 2016, there were 22 general construction contractors awarded highest qualification for water resources and hydropower project construction; 230 general construction contractors awarded grade-I qualification. There were 20,945 registered constructors awarded grade-I qualification.

Appendix: Main Index of National Water Resources Development (2011—2016)

| Index | unit | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---------------------------------|-------|-------|-------|-------|-------|-------|
| 1. Irrigated area | 10 ³ ha | 67743 | 67780 | 69481 | 70652 | 72061 | 73177 |
| 2. Farmland irrigated area | 10 ³ ha | 61682 | 62491 | 63473 | 64540 | 65873 | 67141 |
| Newly-increased in 2016 | 10 ³ ha | 2130 | 2151 | 1552 | 1648 | 1798 | 1561 |
| 3. water-saving irrigated area | 10 ³ ha | 29179 | 31217 | 27109 | 29019 | 31060 | 32847 |
| Highly-efficient water-saving irrigated area | 10 ³ ha | 12926 | 14126 | 14271 | 16114 | 17923 | 19405 |
| 4. Irrigation districts over 10,000 mu | unit | 5824 | 7756 | 7709 | 7709 | 7773 | 7806 |
| Irrigation districts over 300,000 mu | unit | 348 | 456 | 456 | 456 | 456 | 458 |
| Farmland irrigated areas in irrigation districts over 10,000 mu | 10 ³ ha | 29748 | 30087 | 30216 | 30256 | 32302 | 33045 |
| Farmland irrigated areas in irrigation areas over 300,000 mu | 10 ³ ha | 15786 | 11260 | 11252 | 11251 | 17686 | 17765 |
| 5. Rural population accessible to safe drinking water | % | | | | | 76 | 79 |
| 6. Flooded or waterlogging area under control | 10 ³ ha | 21722 | 21857 | 21943 | 22369 | 22713 | 23067 |
| 7. Controlled or improved eroded area | 10 ⁴ km ² | 109.7 | 103.0 | 106.9 | 111.6 | 115.5 | 120.4 |
| Newly-increased in 2016 | 10 ⁴ km ² | 4.0 | 4.4 | 5.3 | 5.5 | 5.4 | 5.6 |
| 8. Reservoirs | unit | 88605 | 97543 | 97721 | 97735 | 97988 | 98460 |
| large-sized | unit | 567 | 683 | 687 | 697 | 707 | 720 |

Continued

| Name of index | unit | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|-----------------------|--------|--------|--------|--------|--------|--------|
| medium-sized | unit | 3346 | 3758 | 3774 | 3799 | 3844 | 3890 |
| Total storage capacity | 10^8 m^3 | 7201 | 8255 | 8298 | 8394 | 8581 | 8967 |
| large-sized | 10^8 m^3 | 5602 | 6493 | 6529 | 6617 | 6812 | 7166 |
| medium-sized | 10^8 m^3 | 954 | 1064 | 1070 | 1075 | 1068 | 1096 |
| 9. Total water supply capacity of water projects in a year | 10^8 m^3 | 6107 | 6142 | 6183 | 6095 | 6103 | 6040 |
| 10. Length of dikes and embankments | 10^4 km | 30.0 | 27.2 | 27.7 | 28.4 | 29.1 | 29.9 |
| cultivated land under protection | 10^3 ha | 45418 | 42597 | 42573 | 42794 | 40844 | 41087 |
| population under protection | 10^4 people | 59697 | 56566 | 57138 | 58584 | 58608 | 59468 |
| 11. Total water gates | unit | 44306 | 97256 | 98192 | 98686 | 103964 | 105283 |
| large-sized | unit | 599 | 862 | 870 | 875 | 888 | 892 |
| 12. Total installed capacity by the end of the year | 10^4 kW | 23007 | 24881 | 28026 | 30183 | 31937 | 33153 |
| Yearly power generation | 10^8 kWh | 6507 | 8657 | 9304 | 10661 | 11143 | 11815 |
| 13. Installed capacity of rural hydropower by the end of the year | 10^4 kW | 6212 | 6569 | 7119 | 7322 | 7583 | 7791 |
| Yearly power generation | 10^8 kWh | 1757 | 2173 | 2233 | 2281 | 2351 | 2682 |
| 14. Completed investment of water projects | 10^8 Yuan | 3086.0 | 3964.2 | 3757.6 | 4083.1 | 5452.2 | 6099.6 |
| Classified by different sources | | | | | | | |
| (1) Central government investment | 10^8 Yuan | 1435.4 | 2033.2 | 1729.8 | 1648.5 | 2231.2 | 1679.2 |
| (2) Local government investment | 10^8 Yuan | 1223.7 | 1464.5 | 1542.0 | 1862.5 | 2554.6 | 2898.2 |
| (3) domestic loan | 10^8 Yuan | 270.3 | 265.6 | 172.7 | 299.6 | 338.6 | 879.6 |
| (4) foreign funds | 10^8 Yuan | 4.4 | 4.1 | 8.6 | 4.3 | 7.6 | 7.0 |
| (5) enterprises and private investment | 10^8 Yuan | 74.9 | 113.4 | 160.7 | 89.9 | 187.9 | 424.7 |

Continued

| Name of index | unit | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|----------------------|--------|--------|--------|--------|--------|--------|
| (6) bonds | 10 ⁸ Yuan | 3.9 | 5.2 | 1.7 | 1.7 | 0.4 | 3.8 |
| (7) other sources | 10 ⁸ Yuan | 73.4 | 78.3 | 142.1 | 176.5 | 131.7 | 207.1 |
| Classified by different purposes | | | | | | | |
| (1) flood control project | 10 ⁸ Yuan | 1018.3 | 1426.0 | 1335.8 | 1522.6 | 1930.3 | 2077.0 |
| (2) water resources project | 10 ⁸ Yuan | 1284.1 | 1911.6 | 1733.1 | 1852.2 | 2708.3 | 2585.2 |
| (3) soil and water conservation and ecological recovery | 10 ⁸ Yuan | 95.4 | 118.1 | 102.9 | 141.3 | 192.9 | 403.7 |
| (4) hydropower projects | 10 ⁸ Yuan | 109.0 | 117.2 | 164.4 | 216.9 | 152.1 | 166.6 |
| (5) capacity building | 10 ⁸ Yuan | 40.2 | 59.6 | 52.5 | 40.9 | 29.2 | 56.9 |
| (6) early-stage work | 10 ⁸ Yuan | 42.0 | 40.7 | 40.7 | 65.1 | 101.9 | 174.0 |
| (7) others | 10 ⁸ Yuan | 496.9 | 291.1 | 328.2 | 244.2 | 337.5 | 636.2 |

Notes:

1. The data in this bulletin do not include those of Hong Kong, Macao and Taiwan.
2. Water-saving Irrigated area in 2013 is integrated with data of first national census for water. Other key indicators for water development and statistical data in 2012 is also integrated with the data of first national census for water. Among which, the length of embankment is further clarified as grade-V or above after the data is integrated with that of first national census for water.
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.
4. Statistics of rural hydropower refer to the hydropower stations with an installed capacity of 50,000 kW or lower than 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.

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