SPEAKERS

ALLIANCE FOR WATER STEWARDSHIP

Rong Cai
China National Institute of Standardisation (CNIS)

中国标准化研究院
CHINA NATIONAL INSTITUTE OF STANDARDIZATION

The Practices of Water Stewardship in China

China National Institute of Standardization

CAI Rong

China National Institute of Standardization

It is subordinate to the State Administration for Market Regulation.

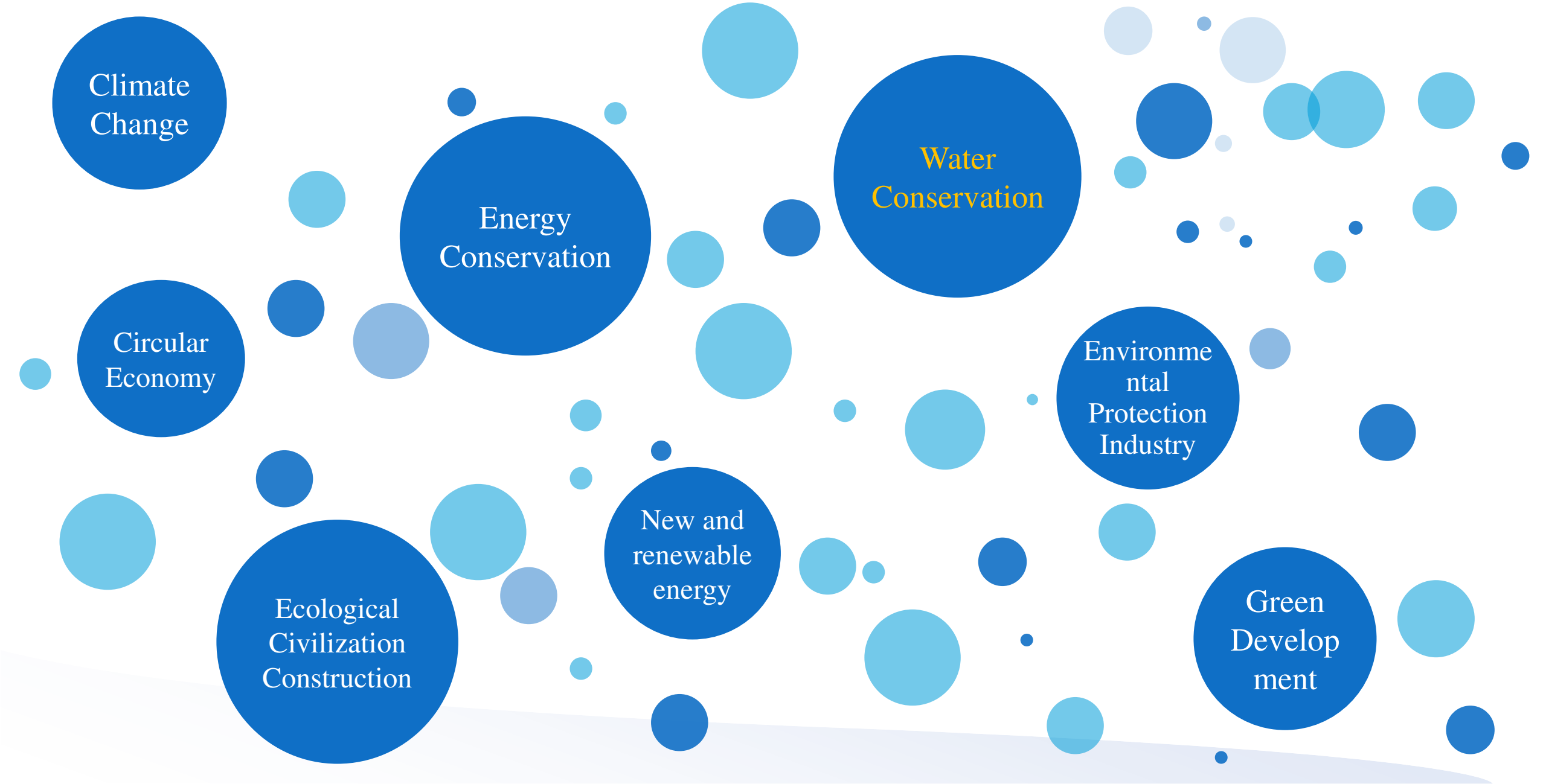
It is a social welfare research institution carrying out fundamental, universal and comprehensive standardization research and services.

- Standardization Theory and Strategy
- Fundamental Standardization
- Standard Evaluation
- National Library of Standards

- Resource and Environment
- Quality Management
- Modern Service
- Food and Agriculture
- High and New Technology & Information

- Public Security
- Industrial Product Quality
- Information on Standards
- Product Safety
- Government Management and Innovation

Resource and Environment Branch



◆ Secretariat of International Organization for Standardization

ISO Technical Committee: Carbon Dioxide Capture, Transportation and Geological Storage (ISO/TC 265)

ISO Technical Committee: Energy Management and Energy Savings (ISO/TC301)

ISO Technical Committee: System - Thermal Performance, Reliability and Durability (ISO/TC180/SC4)

◆ ISO counterpart organizations

ISO Technical Committee: Solar Energy (ISO/TC 180)

ISO Technical Committee: Hydrogen Technologies (ISO/TC 197)

ISO Technical Committee: Environmental Management (ISO/TC 207)

ISO Technical Committee: Carbon Dioxide Capture, Transportation and Geological Storage (ISO/TC 265)

ISO Technical Committee: Sludge Recovery, Recycling, Treatment and Disposal(ISO/TC 275)

ISO Technical Committee: Water Reuse (ISO/TC 282)

ISO Technical Committee: Energy Management and Energy Savings (ISO/TC301)

ISO Technical Committee: Solid Biofuels (ISO/TC 238)

ISO Technical Committee: Sustainable Finance (ISO/TC 322)

ISO Technical Committee: Circular Economy (ISO/TC 323)

ISO Technical Committee: Biodiversity

ISO Project Committee: Water Efficient Products - Rating (ISO/PC 316)

◆ Secretariats of National Standardization Technical Committees

National Standardization Technical Committee on Energy Fundamentals and Management(SAC/TC 20)

National Standardization Technical Committee on Environmental Management (SAC/TC 207)

National Standardization Technical Committee on Environmental Protection Industry (SAC/TC 275)

National Standardization Technical Committee on Hydrogen Technologies (SAC/TC 309)

National Standardization Technical Committee on Solar Energy (SAC/TC 402)

National Standardization Technical Committee on Product Recycling Fundamentals and Management (SAC/TC 415)

National Standardization Technical Committee on Water Conservation (SAC/TC 442)

National Standardization Technical Committee on Energy System (SAC/TC 459)

National Standardization Technical Committee on Carbon Dioxide Emission Management (SAC/TC 548)

National Green Product Evaluation Standardization Overall Group

National Carbon Peaking and Carbon Neutralization Standardization Overall Group

◆ Policy support

Energy Efficiency Labeling Scheme

Water Efficiency Labeling Scheme

Enterprise Standard Forerunner

◆ Laboratory & Technical Innovation Center

Key Laboratory of Energy Efficiency, Water Efficiency and Greenization for SAMR

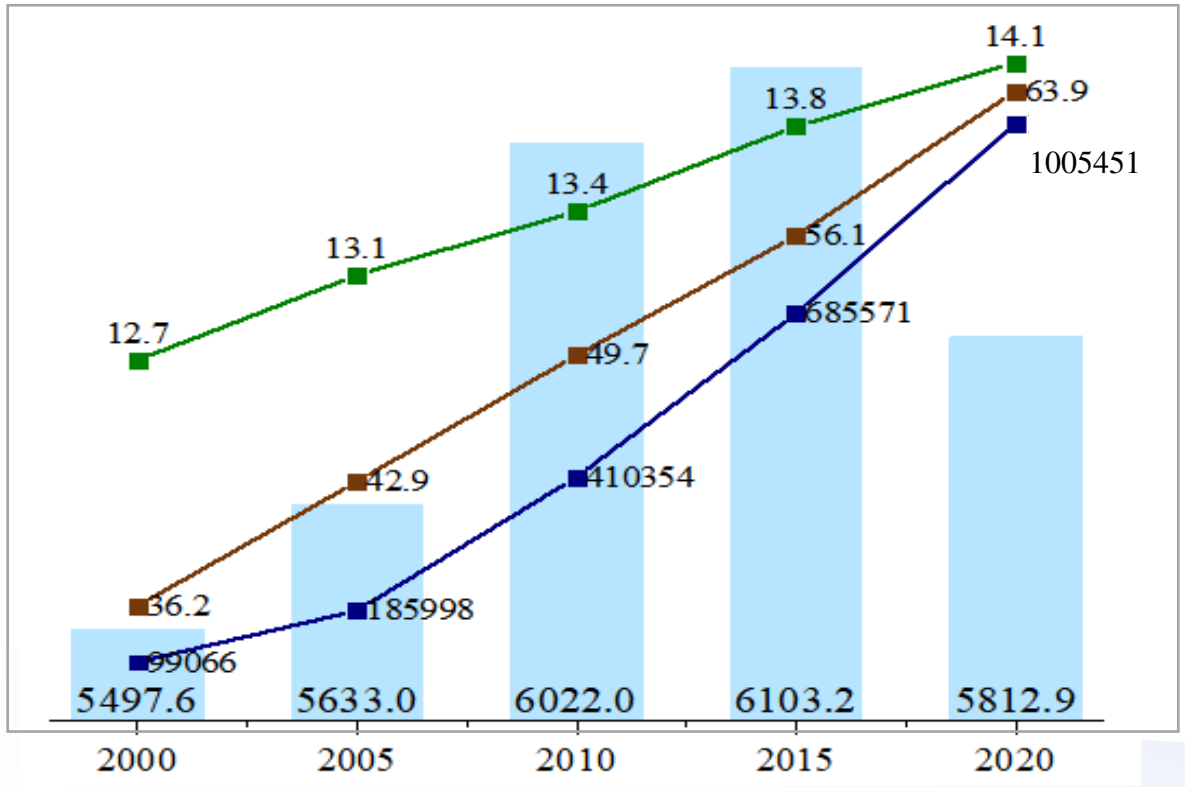
Contents

01

Water Resource Situation

Water shortage

Total water resource of China was 2.96 trillion m^3, ranking 6th in the world.
The per-capita water resource was around 2,100 m^3, less than 1/3 of the world average, ranking 121st among the 153 countries continuously counted by the World Bank.

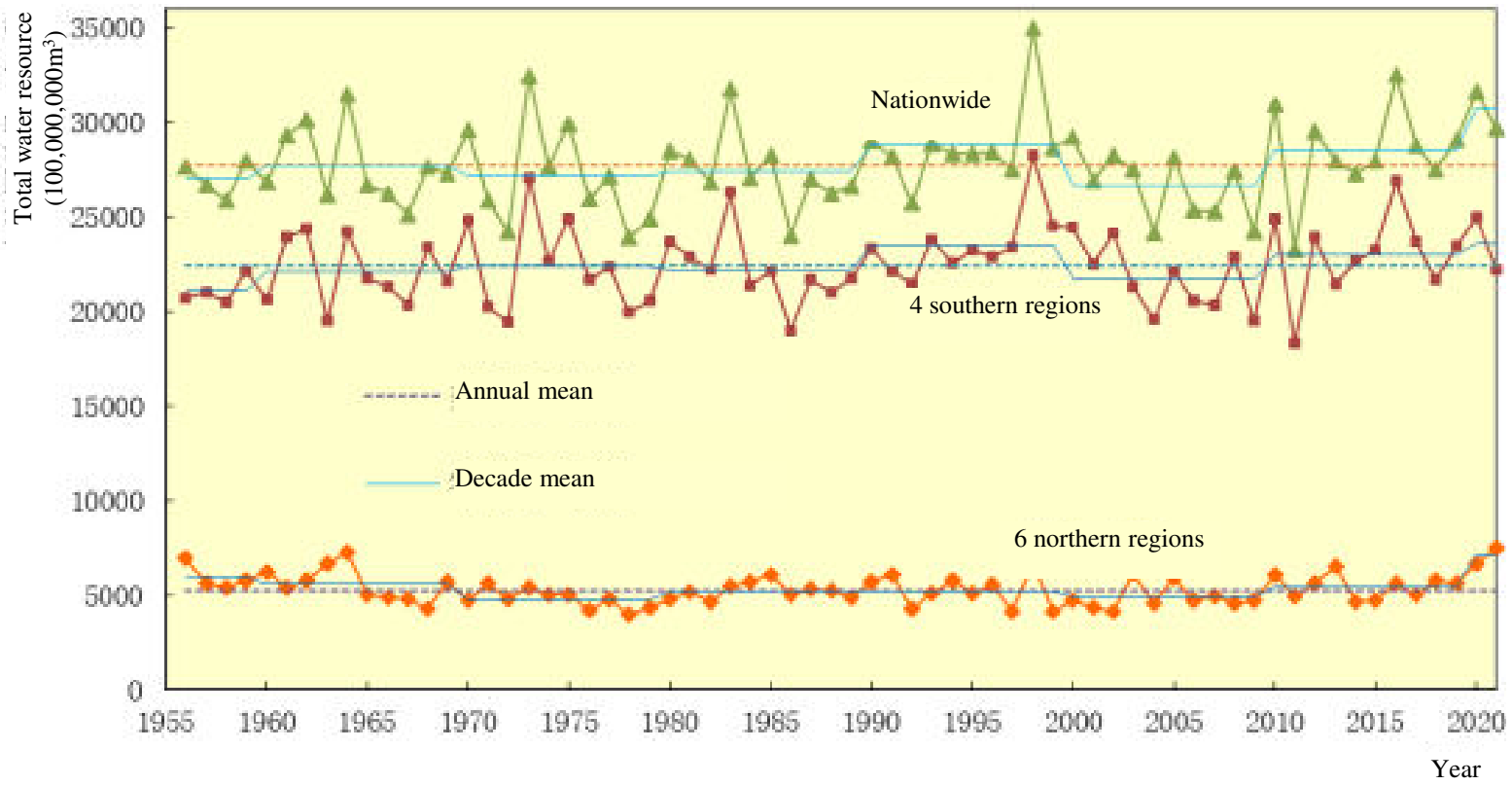


Total quantity of water use (100,000,000m^3)
Total population (100,000,000) →→**increased by 1.1x**
Urbanization rate (%) →→**from 36% to 64%**
GDP(RMB 100,000,000) →**increased by 10x**

A large population with limited water resource

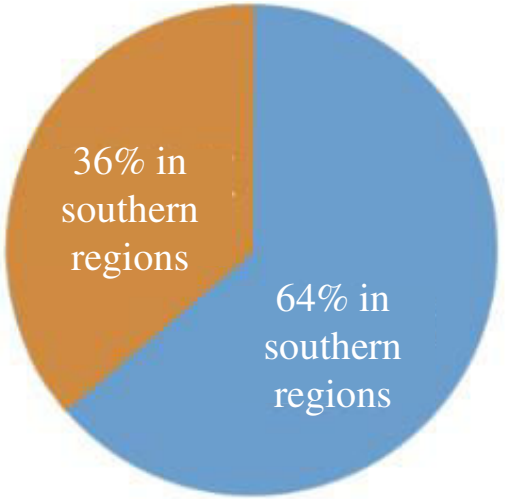
Source: China Statistical Yearbook 2021

Uneven spatiotemporal distribution



Changes of Water Resource in China from 1956 to 2021

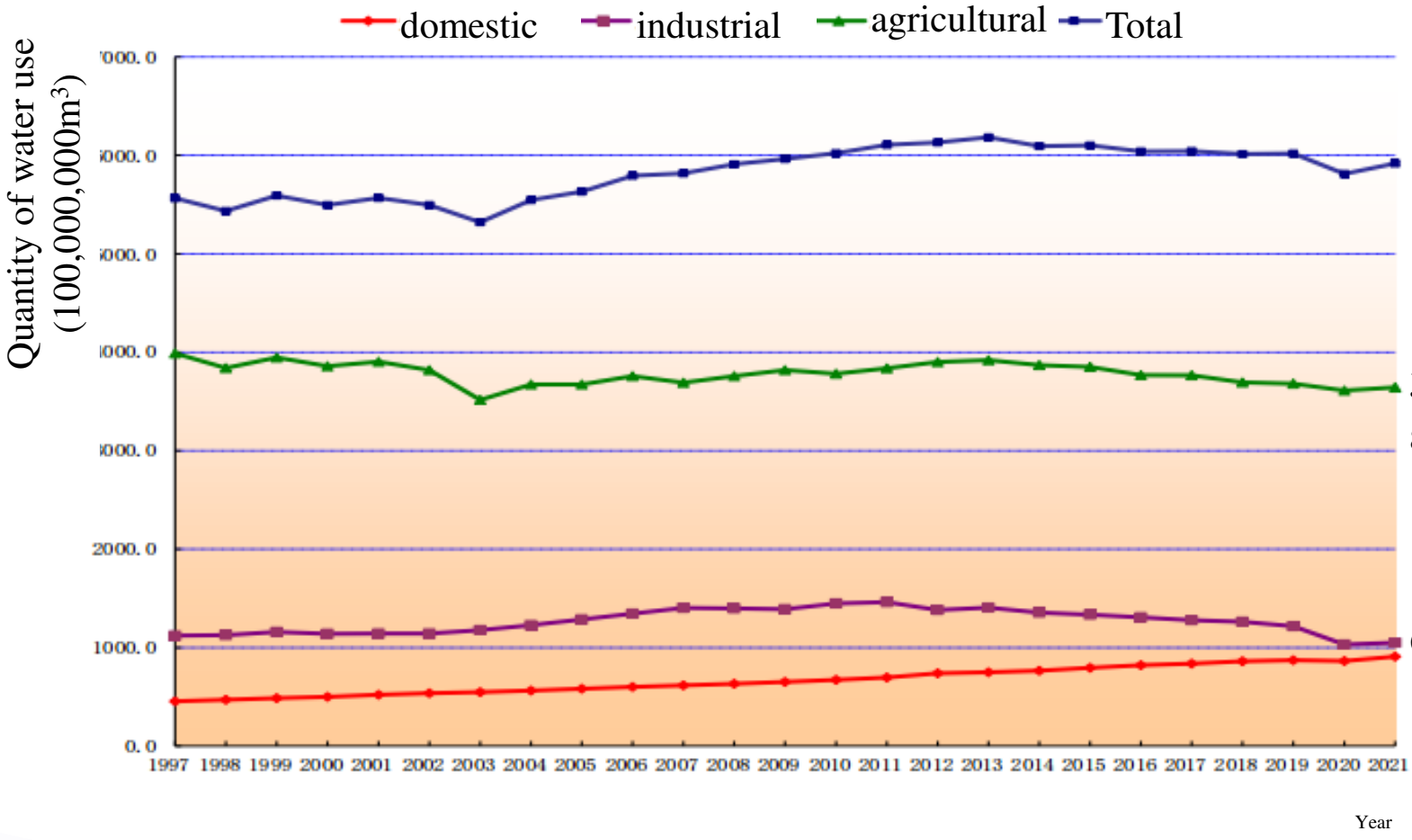
Proportion of land area



Characterized in uneven spatiotemporal distribution and mismatching with population, land and economic layout.

Source: China Water Resources Bulletin 2021

Water structure



360 billion cubic meters，60%，
a decrease of nearly 17 billion cubic meters

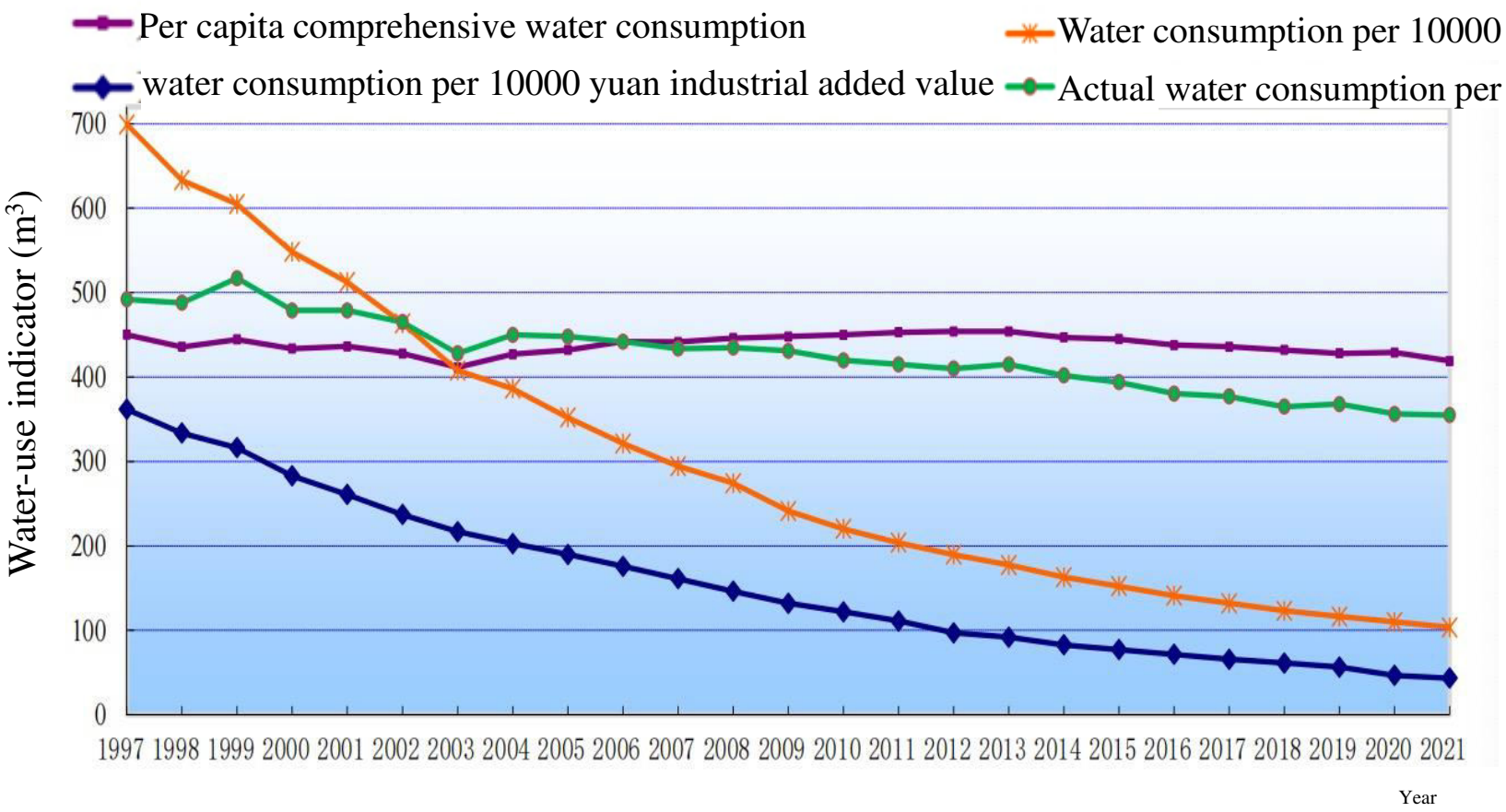
105 billion cubic meters，18%
down 10.9 billion cubic meters from 21%

91 billion cubic meters，15%
increased by 28.9 billion cubic meters
from 10%

Changes of National Quantity of Water Use in 1997-2021

Source: China Water Resources Bulletin 2021

Water efficiency



Changes in Major Water-use Indicators in China in 1997-2021

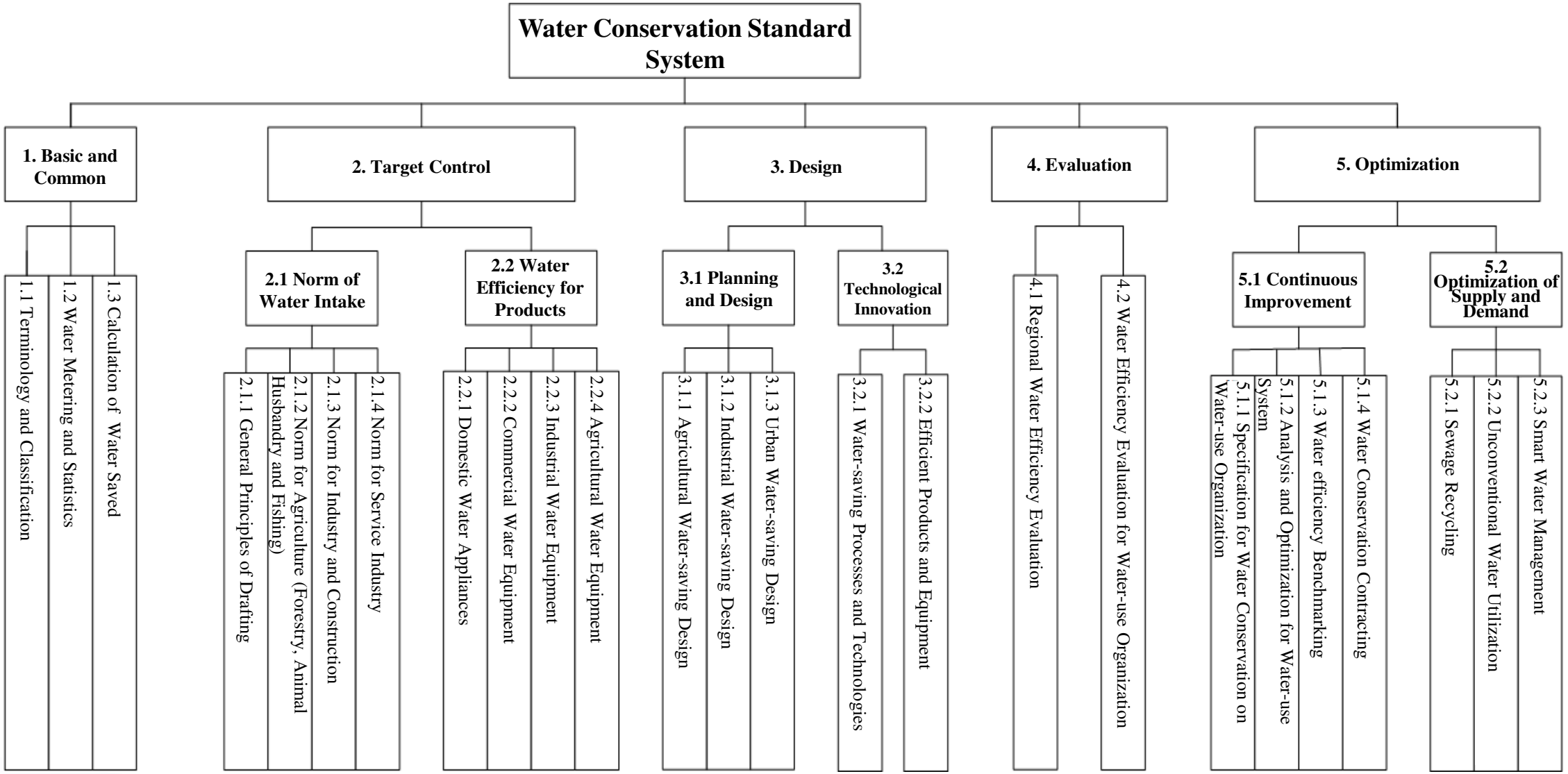
In 2021, the per capita comprehensive water consumption was 419 m^3 in China.
The water consumption per 10000 yuan GDP was 51.8m^3.
The actual average water consumption per mu for farmland irrigation was 355m^3. The irrigation water efficiency was 0.568.
The water consumption per 10000 yuan industrial added value (that year) was 28.2m^3.
The per capita domestic water consumption (including public water) was 176 L/d, and the per capita water consumption for urban and rural residents was 124L/d.

Source: China Water Resources Bulletin 2021

02

Water Conservation Standard System

Standard System



03

The Practices of Water Stewardship

A national standard, could be used to guide the assessmennt for water stewardship in different types of organizations, such as industrial enterprises and service industry units.

GB/T 38966-2020
Assessment Requirements for Water Stewardship

An association standard, which is used to assess the level of enterprise standard for sustainable water stewardship services.

T/CSTE 0155-2022
Assessment Requirements for Quality Grading and Forerunner - Sustainable Water Stewardship Service

Bases for the Practices of Water Stewardship in China

National Standard

01

International and Domestic Dual Certification Demonstration Project and Mutual Recognition Mechanism

02

Compliance Verification

03

Standards Practice Cases Study

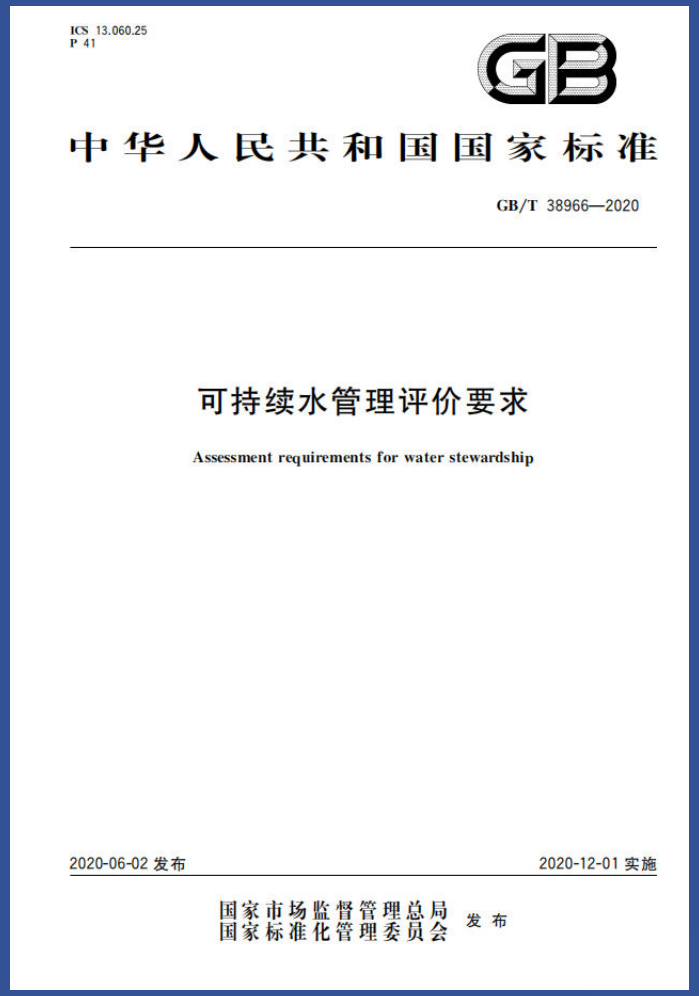
04

The Forerunner of Enterprise Standard

Association Standard

National Standard

Localized assessment requirements are proposed on the basis of AWS standards and taking water management demands and characteristics of China into account.


ICS 13.060.25
P 41

GB

中华人民共和国国家标准

GB/T 38966—2020

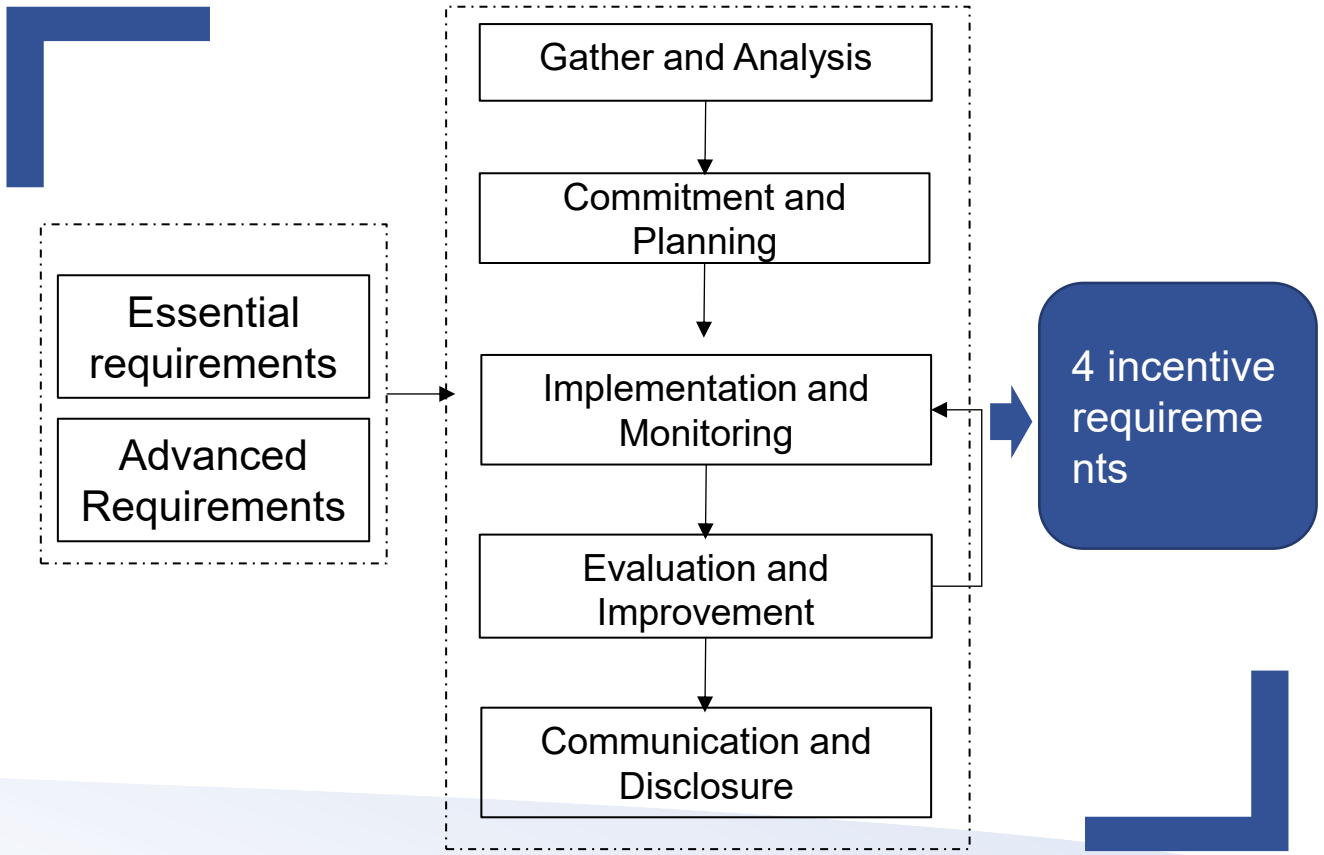
可持续水管理评价要求

Assessment requirements for water stewardship

2020-06-02 发布　　2020-12-01 实施

国家市场监督管理总局
国家标准化管理委员会　发布

- Specify related terms and definitions, general principles and assessment requirements.
- Apply to different types of organizations, such as industrial enterprises and service industry units, to assess sustainable water stewardship.



Grade	Grade 1	Grade 2	Grade 3
Score	64-80 points	40-64 points (including 64 points)	0-40 points (including 40 points)

Part of assessment requirements are combined and detailed.
Added indicators with Chinese water resource management characteristics and demands.

Gather and Analysis

- Add a requirement for drawing the water balance diagrams as the essential requirements, which should in accordance with the regulations in the national standard GB/T 12452.

Commitment and Planning

- Detail the contents of water stewardship strategy;
- Establish a multi-stakeholder involvement communication mechanism" in the water stewardship plan, as an essential requirement;
- The organization need to clarify the relationship between each goal and the best practice with addressing the common water environment isues and attaining the basin water stewardship outcomes.

Implementation and Monitoring

- Four incentive requirements have been added:
  preside over or participate in relevant research projects at the provincial or ministerial level and above;
  carry out water-saving enterprise (unit) construction, water footprint assessment, water efficiency benchmarking, water audits, implementation of water conservation contracting and other related activities;
  be selected as a water-saving benchmark enterprise, water efficiency forerunner or other relevant selection activities;
  take part in preparation the fomulation of water-related standards.
- Detail the requirements for the organization to improve its water stewardship capacity from the base date it decides.
- Add the requirements for installing high-efficiency water appliance.
- Add the requirements for utilizing recycled water and unconventional water.
- Add the requirements for improving awareness of water conservation.

Assessment and Improvement

- As an essential requirement, it is suggest that the implementation performance of water stewardship be evaluated at least once a year.

International and Domestic Dual Certification Demonstration Project

Suzhou Industrial Park passed the certification of AWS International Water Stewardship Standard in 2021 and was awarded a gold-level certificate. In addition, the park carried out the compliance verification in accordance with the national standard Assessment Requirements for Sustainable Water Stewardship (GB/T38966-2020) and was certified to meet the Grade 2 requirements for water stewardship assessment.


Certificate

Standard: Alliance for Water Stewardship (AWS) Version 2.0

AWS Reference No: AWS-000425

Certificate Holder: Suzhou Industrial Park Administrative Committee

Registration Address: Xiandai Building, No.999, Xiandai Avenue, Suzhou Industrial Park,Suzhou 215028 P.R. China

Operation Address: Xiandai Building, No.999, Xiandai Avenue, Suzhou Industrial Park,Suzhou 215028 P.R. China

Level: Alliance for Water Stewardship Gold Level

Catchment: Taihu Lake Catchment

Industry Sector: Other

Scope: Single Site

Proof has been verified by means of an assessment that the requirements of the above standard and level are met.

Validity: The certificate is valid from 2021-11-17 until 2024-11-16. It remains valid subject to satisfactory surveillance audits.

2022-01-06

SIP www.sipac.gov.cn

www.a4ws.org

TÜVRheinland® Precisely Right. www.tuv.com


全国节水标准化技术委员会
中国技术经济学会

《可持续水管理评价要求》（GB/T 38966-2020）国家标准符合性验证情况说明

经专家评审，苏州工业园区管委会可持续水管理工作与《可持续水管理评价要求》（GB/T 38966-2020）国家标准中基本要求相符合，达到标准中可持续水管理评价等级 2 级要求。

本次符合性验证有效期三年，特此说明。

全国节水标准化技术委员会 业务专用

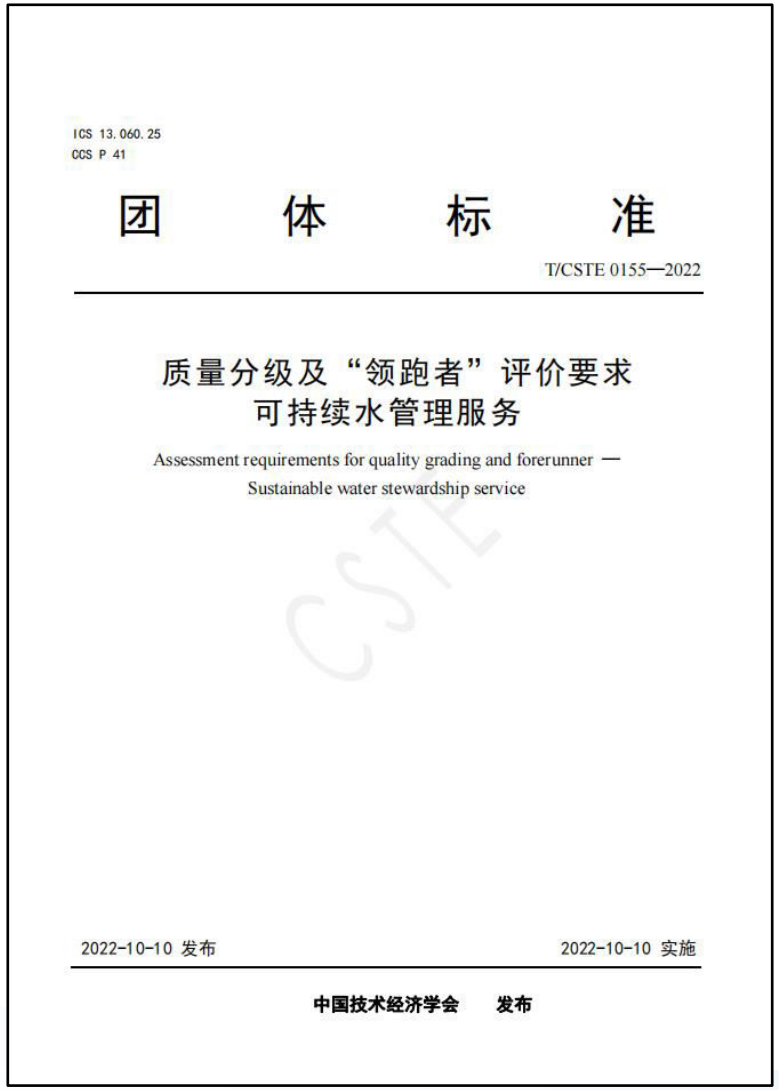
全国节水标准化技术委员会　　中国技术经济学会

2021 年 12 月 24 日

It is the first project in both the International and Domestic to certificate water stewardship.

Promote to create a systematic, timely and integrated framework for water stewardship, as well as the development of capacities among supply chain and water users in the park.

Association Standard



ICS 13.060.25
CCS P 41

团　　体　　标　　准

T/CSTE 0155—2022

质量分级及“领跑者”评价要求
可持续水管理服务

Assessment requirements for quality grading and forerunner —
Sustainable water stewardship service

2022-10-10 发布　　2022-10-10 实施

中国技术经济学会　　发布

Specify the assessment index system, assessment methods and grading, for the quality of sustainable water stewardship service and the levels of enterprise standards.

Apply to the assessment of standard levels of enterprises providing sustainable water stewardship services. This standard serves as a reference for relevant institutions to carry out quality grading, enterprise standard level assessment, forerunner assessment and related certification, as well as the formulation of enterprise standards.

Basic requirements

- In recent three years, the enterprise has no major or above environmental, safety and quality accidents.
- The enterprise should not be included in the relevant list of subjects with serious breach of national credit information.
- The enterprise could establish and operate corresponding quality, environment, occupational health and safety management systems according to GB/T 19001, GB/T 24001 and GB/T 45001, and encourage enterprises to set up the high-level requirements according to their own operations.
- The service has achieved scale, and the leading standard of each enterprise should meet the requirements of national mandatory and relevant service standards.

Index Type	Assessment Indicator	Number of Assessment Contents
Essential Index	Normality	1
	Integrity	1
Core Index	Best practice outcomes	2
	Stakeholder satisfaction	10
	Water efficiency	10
	Process and specification	9
	Water-saving appliances and equipment	3
Innovative Index	Integrity of information collected	6
	Utilization of unconventional water	2
	Water stewardship research and assessment	5

Assessment Grade	Meet the qualification			
The Grade 1 shall meet both	Basic requirements	Essential indexes	At least 30 core indexes shall meet the requirements.	At least 8 innovative indexes shall meet the requirements, and at least two of the 45 to 49 items reflecting policy guidelines and market demands shall meet the requirements.
The Grade 2 shall meet both			At least 20 core indexes shall meet the requirements.	At least 4 innovative indexes shall meet the requirements.
The Grade 3 shall meet both			At least 15 core indexes shall meet the requirements.	—

Enterprise Standard Forerunner


国家市场监督管理总局
国家发展和改革委员会
科学技术部
工业和信息化部
财政部
生态环境部
交通运输部
中国人民银行

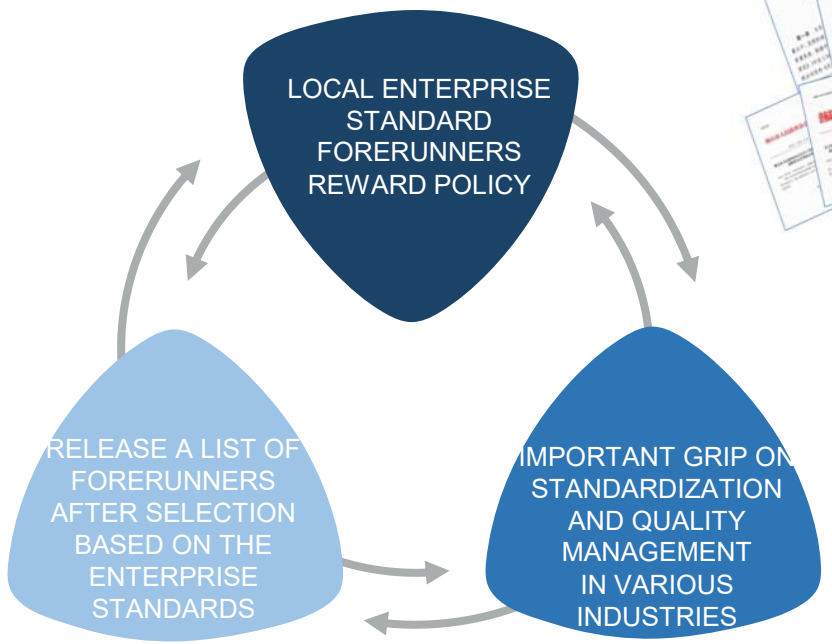
国市监标准〔2018〕84号

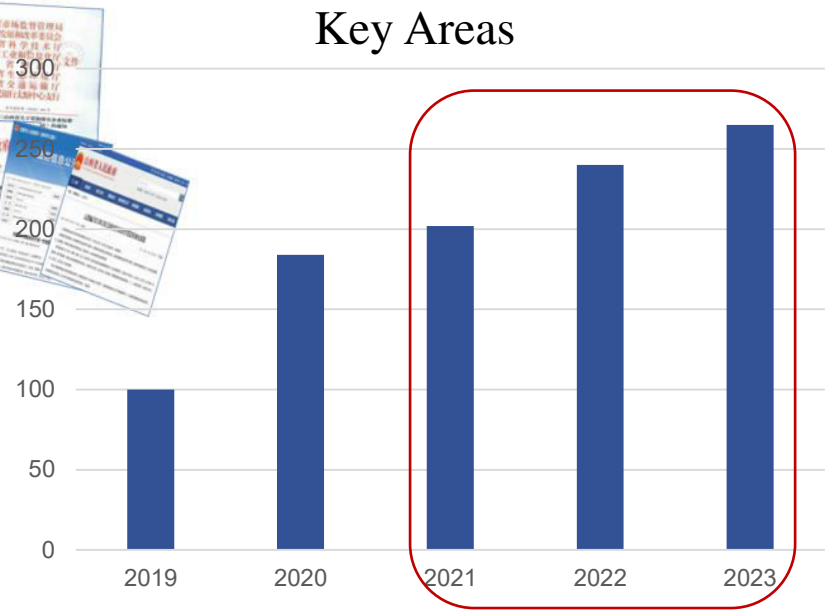
市场监管总局等八部门关于实施企业标准“领跑者”制度的意见

各省、自治区、直辖市人民政府，国务院各部委、各直属机构：

企业标准“领跑者”制度是通过高水平标准引领，增加中高端产

— 1 —





2019	92 Product Services	248 Enterprises	317 Enterprise Standards
2020	212 Product Services	519 Enterprises	688 Enterprise Standards
2021	381 Product Services	867 Enterprises	1231 Enterprise Standards
2022	448 Product Services	975 Enterprises	1506 Enterprise Standards

Cumulative enterprise standard forerunners, involving:

- 1,953 enterprises
- 3,286 enterprise standards

Continuous Promotion

In July 2021, the Chinese Society of Technology Economics, in collaboration with Water Stewardship China, proposed a ranking of water stewardship service enterprises and a forerunner assessment program for the first time, and carried out the assessment of enterprise standard forerunners engaged in water stewardship services.

Ecolab (Taicang) Technology Co., Ltd.

Avary Holding (Shenzhen) Co., Ltd.

Guangzhou Dawang Food Co., Ltd.

Continuous Promotion

In 2022, the Chinese Society of Technology Economics, in collaboration with TÜV Rheinland (Guangdong) Ltd. and Nalco (China) Environmental Solutions Co., Ltd., organized the assessment of the 2022 enterprise standard forerunner engaged in water stewardship services as assessment authorities.

Guangzhou Dawang Food Co., Ltd.

Guangzhou Yongwang Food Co., Ltd.

中国标准化研究院
CHINA NATIONAL INSTITUTE OF STANDARDIZATION

Thank you!

CAI Rong
China National Institute of Standardization
E-mail: cairong@cnis.ac.cn