

SDG 6 (Water and Sanitation) in Republic of Korea

Roles of youth community in ensuring the availability and sustainable management of water and sanitation for all

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Questions

- **WHAT** is water for you?
- **WHY** is water important in the context of sustainable development?
- **HOW** has the water-related **SDG** been implemented in Korea?
should the water-related **SDG** be implemented?
- **WHO** has been involved or concerned in the **SDG**?

Water is ~

- **Water is life vs. Water is for life**
- **Water is a human right**
- **Water is precious vs. Water is cheap**
- **Water is a public good or an economic good**
- **Water is power**
- **Water is peace**
- **Water is dangerous**
- **Water is nature**
- **Water is everything....**

Water is the Key to a Sustainable Future

ENSURE AVAILABILITY AND SUSTAINABLE MANAGEMENT OF WATER AND SANITATION FOR ALL

A STRONG, INTEGRATED WATER AND SANITATION GOAL SHOULD HAVE INTERCONNECTING, MUTUALLY REINFORCING TARGETS - WHICH LINK TO ALL OTHER AREAS OF SUSTAINABLE DEVELOPMENT.

SUCCESSFUL REALISATION OF GOAL 6 WILL UNDERPIN PROGRESS ACROSS MANY OF THE OTHER GOALS AND TARGETS.



(SOURCE: UN WATER <http://www.unwater.org/app/uploads/2017/05/SDG6-Interlinkages-1and2.pdf>)

KEY:

LINKED GOALS

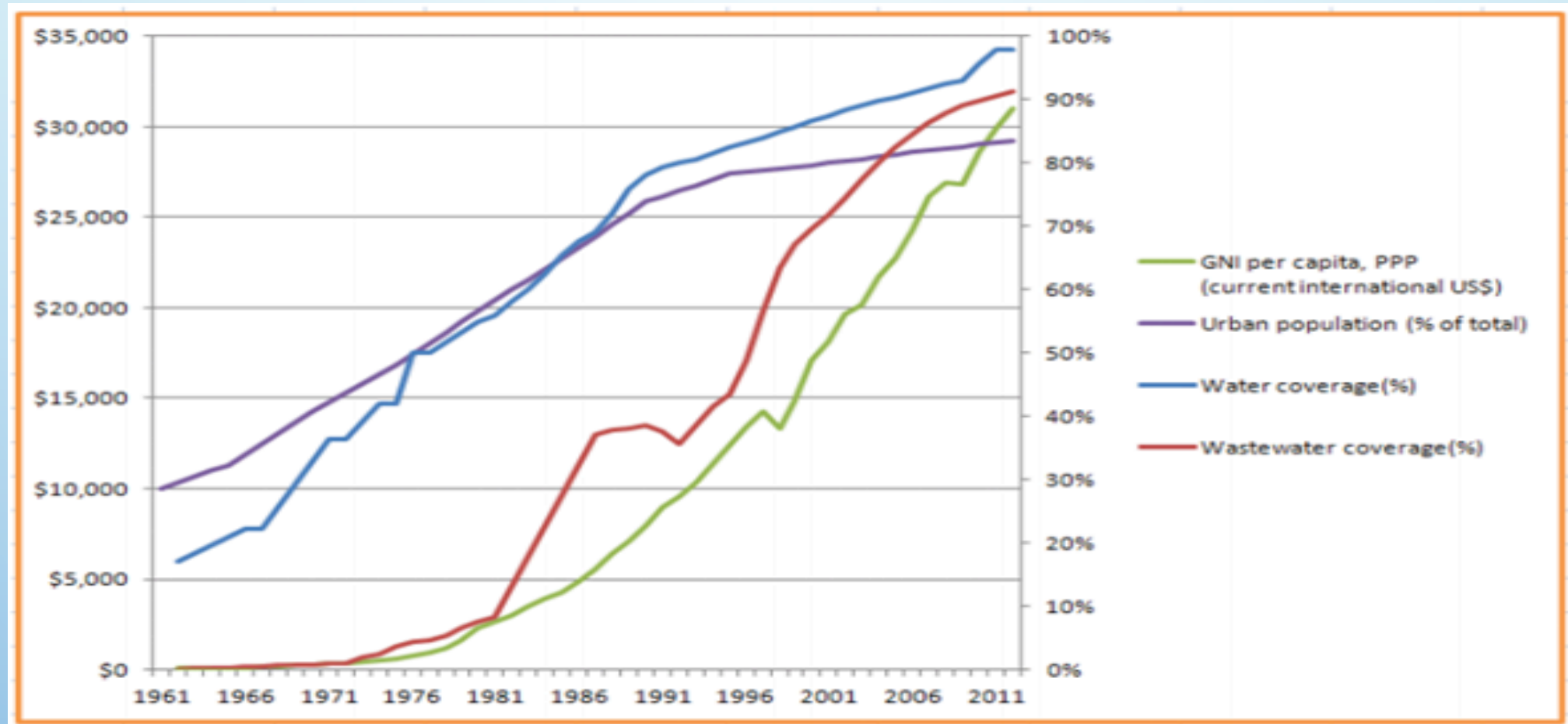
RESILIENT INFRASTRUCTURE (9.A) END POVERTY (1.4) END HUNGER (2.1) HEALTHY LIVES (3.6) QUALITY EDUCATION (4.7) GENDER EQUALITY (5.4) SUSTAINABLE WATER & SANITATION (6) ACCESS TO ENERGY (7) SUSTAINABLE GROWTH (8)

RESILIENT ECOSYSTEMS (15.1) REDUCE INEQUALITY (10.3) SUSTAINABLE CITIES (11.1) SUSTAINABLE CONSUMPTION (12.2) CLIMATE CHANGE (13.3) SUSTAINABLE ECOSYSTEMS (15.1) SUSTAINABLE CONSUMPTION (12.2) INCLUDE SMEs (10.4) BANK PARTNERSHIP (17.1)

www.unwater.org www.unwater.org/en/interlinkages/interlinkages.html

SDG6 in Korea

Overview for the last 50 years



SOURCE: "REPUBLIC OF KOREA: TRANSFORMATION OF THE WATER SECTOR (1960-2012)", KWWA, 2016, PAGE 11, (ORIGINAL SOURCE: "REVISION OF A STUDY ON THE VISION 2050 OF WASTEWATER POLICY, KOREAN MINISTRY OF ENVIRONMENT, 2012)

Target 6.1 “By 2030, achieve universal and equitable access to **safe and affordable drinking water** for all”

- “**Drinking water**” is defined as piped water or tap water on premises that is treated and delivered in accordance with the rules and procedures of the Korea’s ‘Water Supply and Waterworks Installation Act’ and ‘Management of Drinking Water Act’.

Tap water meets the national quality standards for drinking water => **SAFE** drinking water for almost **ALL!**

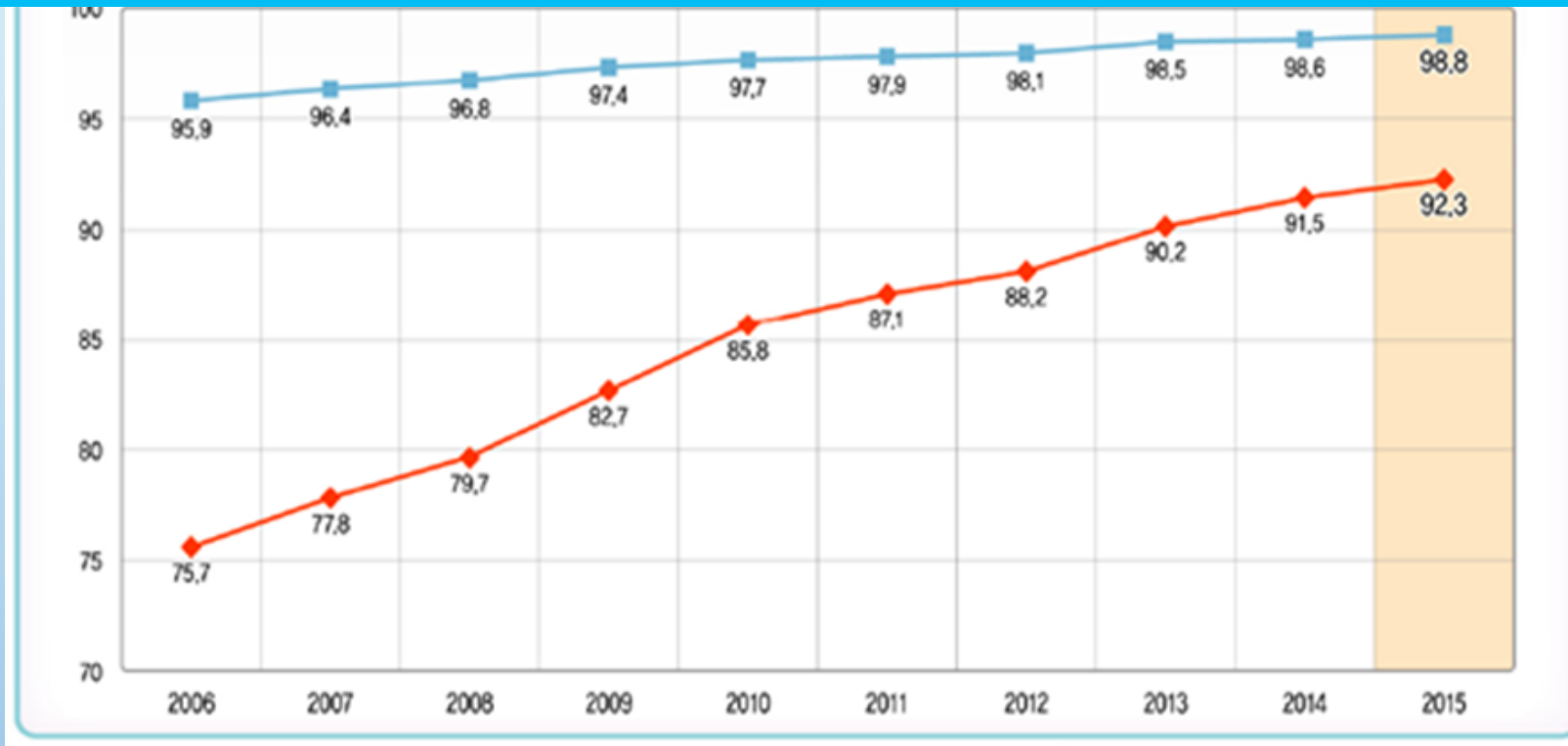
Aging water infrastructure results in the low level of water use for direct drinking (5.1%) => **SAFE** drinking water?

Price upper limit < 2% of the family income in the lowest income decile=> **AFFORDABLE** drinking water!

Low cost recover ratios & High dependence on subsidy (small towns) => **AFFORDABLE** drinking water?

Target 6.1 “By 2030, achieve **universal and equitable** access to safe and affordable drinking water for all”

Percentage of population with access to tap water on premises (National vs. Rural population)



SOURCE: STATISTICS OF WATERWORKS, KOREAN MINISTRY OF ENVIRONMENT, 2015

Target 6.2 “By 2030, achieve access to **adequate and equitable sanitation** and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations”

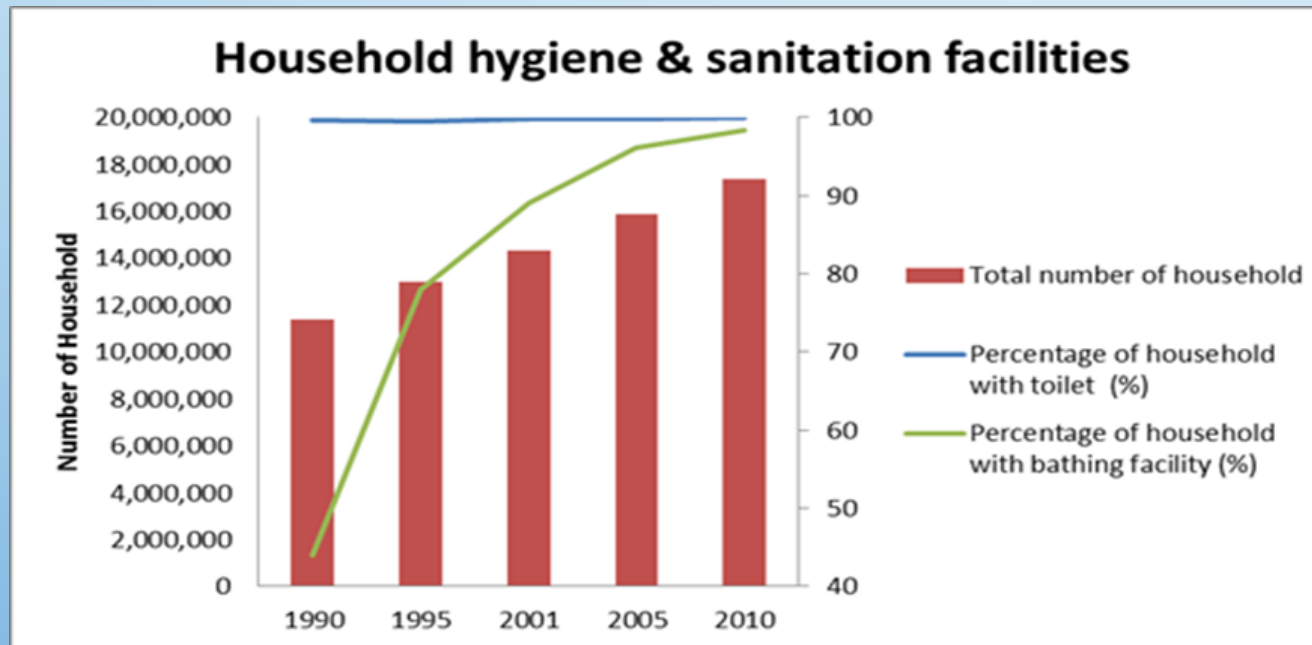
- “**Adequate Sanitation**” is defined as access to public sewerage facilities and services that are installed and managed in accordance with the rules and procedures of the Korean ‘Sewage Act’ for the treatment of sewage and excreta. In South Korea, population living within the ‘designated sewerage treatment area’ has full access to the public sewerage systems.

92.5% of population living within the DSTA (2014) => **ADEQUATE** sanitation for almost all!

10.8% of rural population living outside of the DSTA (0.8% of urban population) => **EQUITABLE** sanitation?

Target 6.2 “By 2030, achieve access to **adequate and equitable sanitation and hygiene** for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations”

- “**Adequate Hygiene**” is more associated with personal habits or behaviors such as hand washing, bathing and tooth brushing, which has been effectively promoted through hygiene educations for children and nation-wide hygiene campaigns particularly in preparing for international sports events including the 1986 Asian Games, 1988 Olympic Games and 2002 FIFA World Cup.



(SOURCE: KOREAN POPULATION AND HOUSING CENSUS 2015)

Target 6.2 “By 2030, achieve access to adequate and **equitable** sanitation and hygiene for all and **end open defecation**, paying special attention to the needs of women and girls and those in **vulnerable situations**”

Nearly every household has toilet (more than 99.9%)

Many public toilets and open toilets are available for free

=> **End OPEN DEFECATION!**

Public toilets for female (45%)

School toilets for girls (30% less than boys, Board of education in Chungcheongnam-do)

Restrooms for the disabled in public toilets (93%)

Hand wash stands for kids in public toilets (19%)

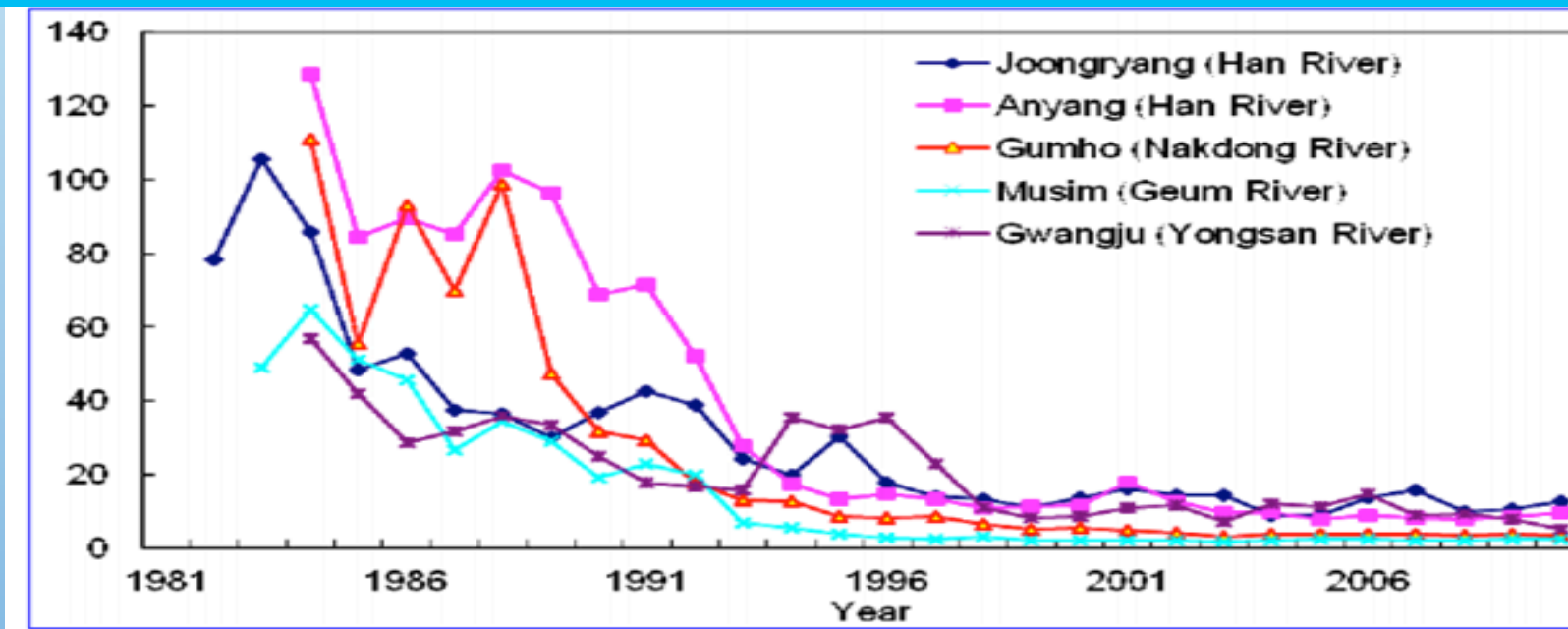
Soap furnished in public toilets (82%)

=> **EQUITABLE** sanitation and hygiene ?

Target 6.3 “By 2030, improve **water quality** by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and increasing recycling and safe reuse globally”

- “Water Quality” is generally determined against standards predefined for human needs and/or ecosystems’ sustainability, which is monitored against a variety of chemical, physical and biological indicators.

The 30-yr history of water quality at urban streams of the four major rivers (BOD, mg/L)



(SOURCE: “REPUBLIC OF KOREA: TRANSFORMATION OF THE WATER SECTOR (1960-2012)”, KWWA, 2016)

Target 6.3 “By 2030, improve water quality by **reducing pollution**, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and increasing recycling and safe reuse globally”

- Korea government establishes and implements regulatory frameworks to prevent water pollution from **point sources** (such as effluent of sewage treatment facilities and wastewater of industrial plants) and apply stringent effluent standards to uphold or improve water quality grade of receiving water body.
- **Non-point source** (NPS) that originates from diffuse, often unidentified, areas or points becomes a serious problem (as the primary source for the discharged BOD load, up to 72.1% in 2020). Pollution from NPS (such as agricultural fields, livestock facilities, roads, construction sites and other urban areas) is generally caused by rainfall or snowmelt and includes many different types of pollutants. Korea government has made efforts to reduce NPS pollution with clear policy directions and action plans, which are elaborated in the 2nd ‘Comprehensive Plan on Non-Point Source Management’ (2012-2020).

Target 6.3 “By 2030, improve water quality by **reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and increasing recycling and safe reuse globally”**



“Heat wave turns rivers into green tea latte”,
algal blooms in Sayeon Lake, Ulsan

=> **Reduced** water pollution?

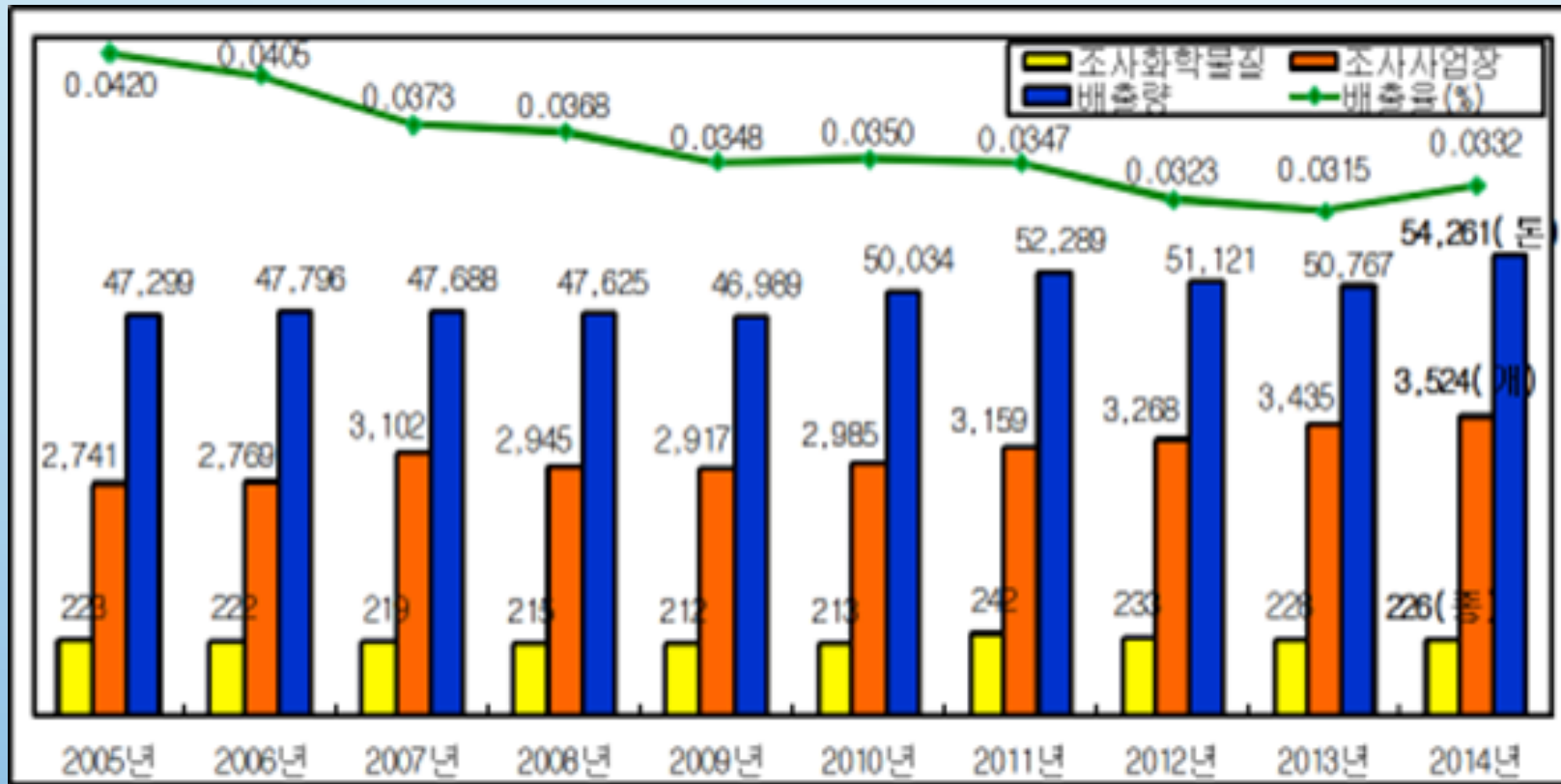
(SOURCE: [HTTP://WWW.KOREATIMES.CO.KR/WWW/NATION/2017/03/113_211769.HTML](http://www.koreatimes.co.kr/www/nation/2017/03/113_211769.html))

Target 6.3 “By 2030, improve water quality by reducing pollution, **eliminating dumping** and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and increasing recycling and safe reuse globally”

	No. of Inspected Facility	No. of Violating Facility	Violating Ratio (%)	wastewater discharging facilities
2004	63,968	2,874	4.5	
2005	61,934	2,857	4.6	
2006	59,914	2,685	4.5	
2007	57,038	2,413	4.2	
2008	57,675	2,135	3.7	
2009	41,141	1,721	4.2	
2010	40,785	2,019	5	
2011	37,456	1,994	5.3	
2012	39,662	2,280	5.7	
2013	35,546	2,818	7.9	

(SOURCE: MINISTRY OF ENVIRONMENT, 2014 “ENVIRONMENTAL STATISTICS YEARBOOK”)

Target 6.3 “By 2030, improve water quality by reducing pollution, eliminating dumping and **minimizing release of hazardous chemicals and materials**, halving the proportion of untreated wastewater and increasing recycling and safe reuse globally”



Through voluntary participation in ‘stewardship-based management for area-specific risk reduction target’ (SMART) program, many facilities that deal with hazardous chemicals monitor and report their productions and release.

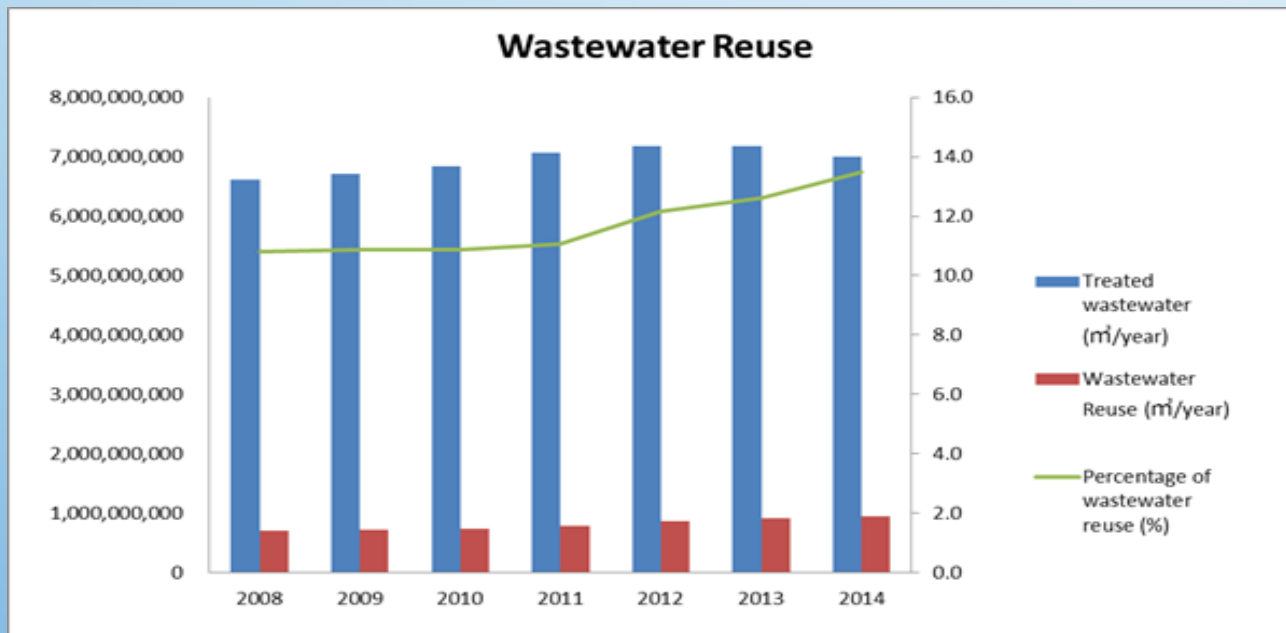
=> Reduced release of hazardous chemicals!

(SOURCE: KOREAN MINISTRY OF ENVIRONMENT, 2016 “REPORT FOR A PRESS CORPS”)

Target 6.3 “By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, **halving the proportion of untreated wastewater and increasing recycling and safe reuse globally**”

High sewerage coverage & Stringent regulations for effluent/wastewater=>Low level of **UNTREATED WASTEWATER!**

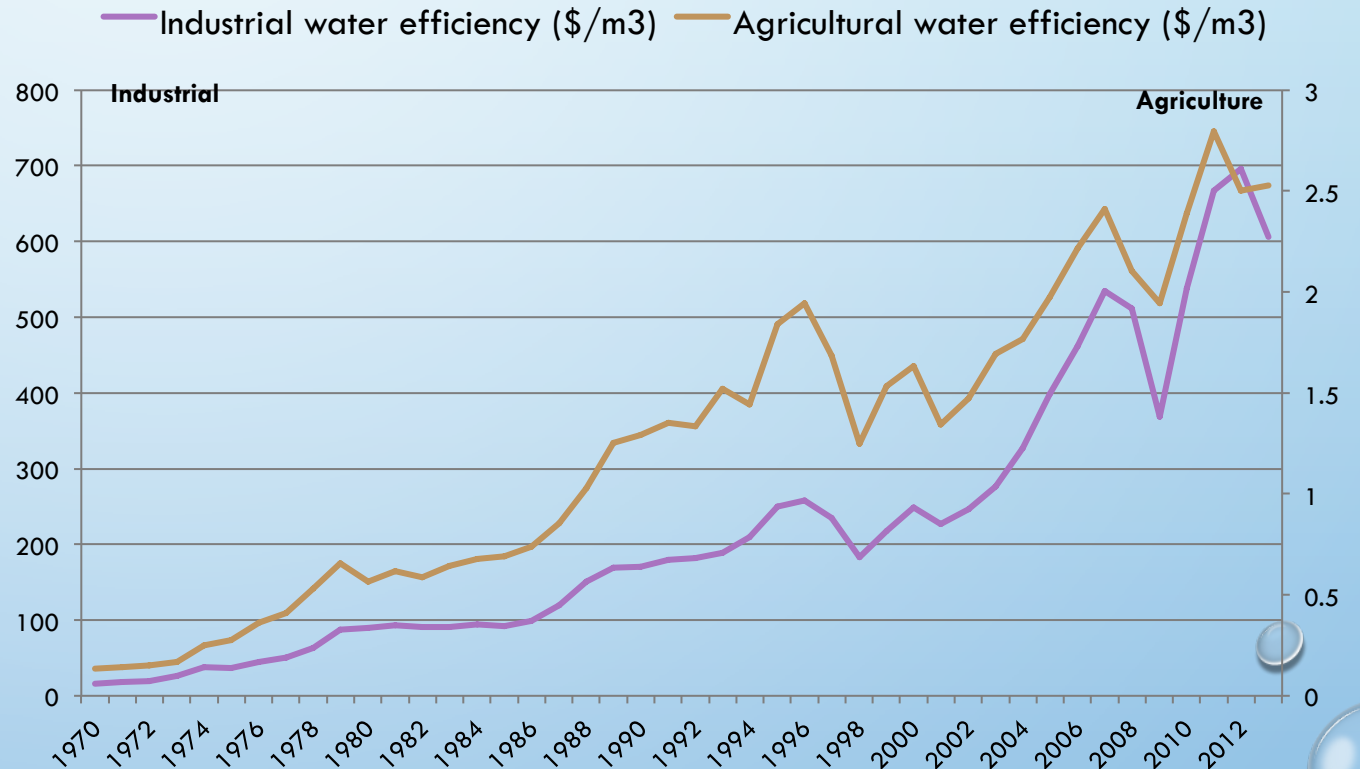
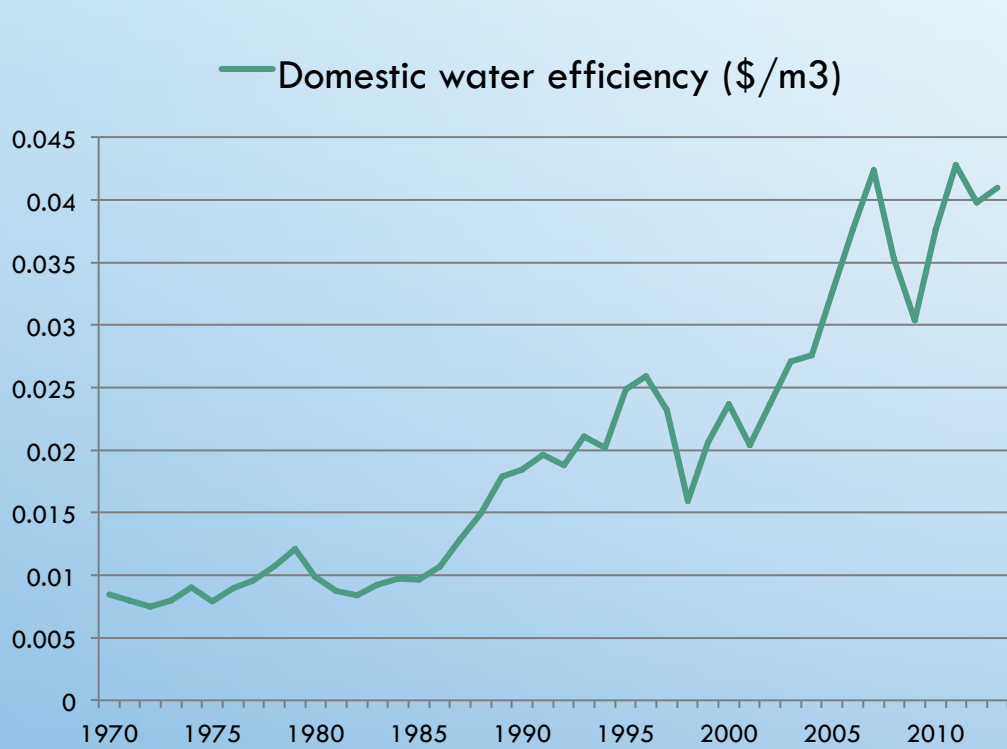
High level of advanced sewerage treatment (29.5%, 2007-> 82.2%, 2014) => **SAFE REUSE!**



Wastewater reuse from the public sewerage treatment facilities (13.5%, 2014) & Limited reuse of the reclaimed water (cleaning or river maintenance)
=> INCREASED RECYCLING?

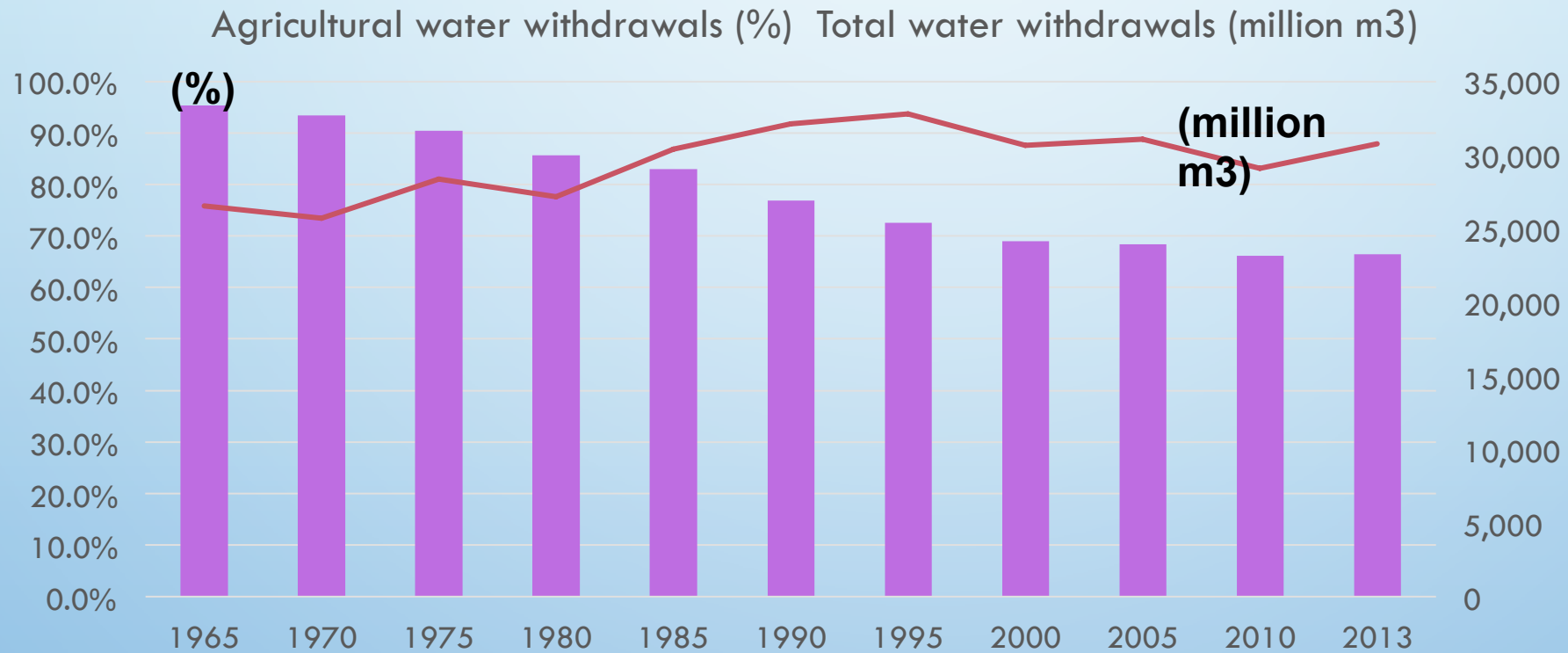
(SOURCE: WASTEWATER STATISTICS, KWWA, 2014)

Target 6.4 “By 2030, substantially increase **water-use efficiency across all sectors** and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity”



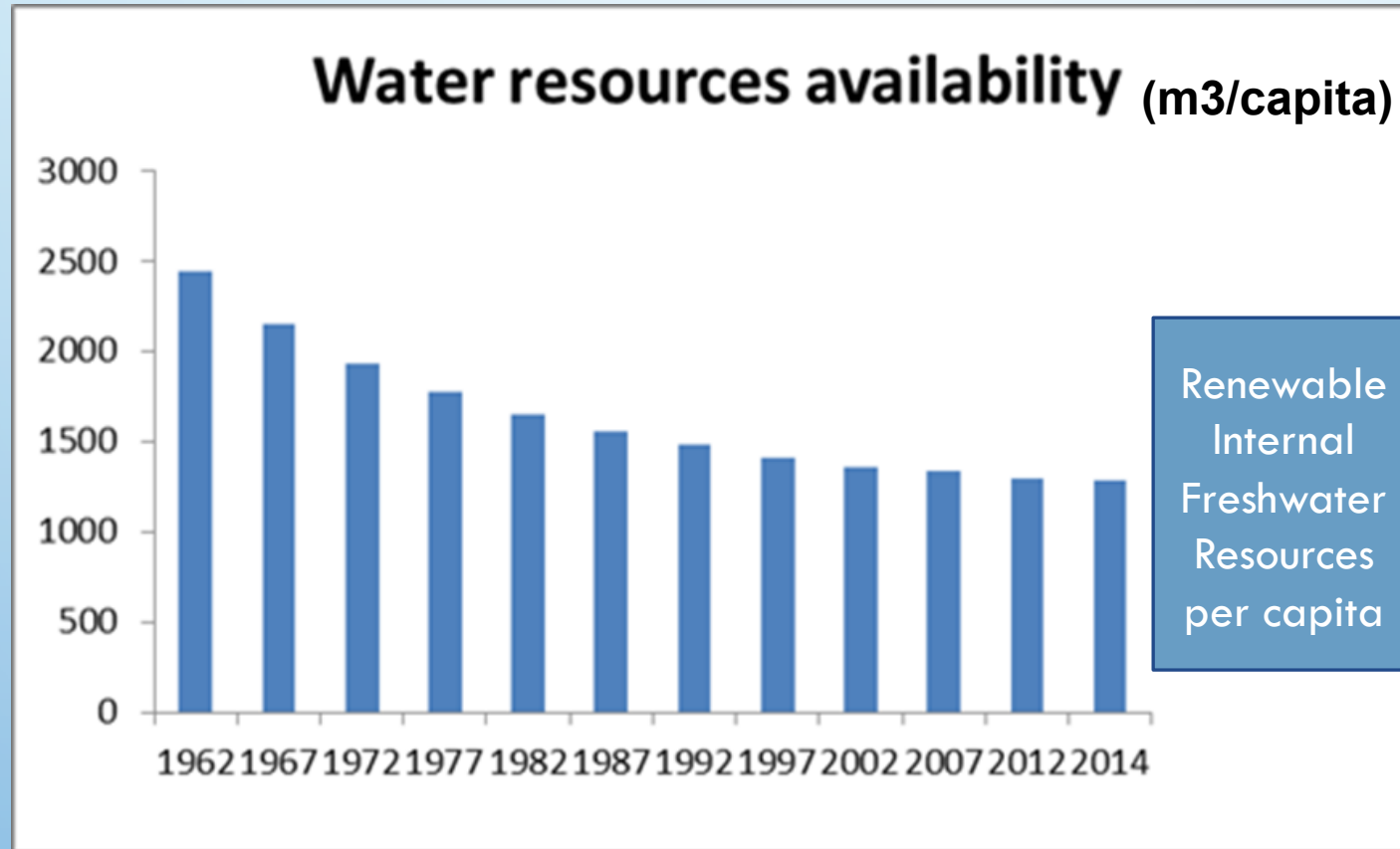
(SOURCE: MINISTRY OF LAND, INFRASTRUCTURE, AND TRANSPORT, WATER RESOURCES MANAGEMENT INFORMATION SYSTEM)

Target 6.4 “By 2030, substantially increase water-use efficiency across all sectors and ensure **sustainable withdrawals** and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity”



(SOURCE: MINISTRY OF LAND, INFRASTRUCTURE, AND TRANSPORT, WATER RESOURCES MANAGEMENT INFORMATION SYSTEM)

Target 6.4 “By 2030, substantially increase water-use efficiency across all sectors and ensure **sustainable withdrawals and **supply** of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity”**



(SOURCE: [HTTP://DATA.WORLDBANK.ORG/INDICATOR/ER.H2O.FWTL.K3?LOCATIONS=KR&NAME_DESC= TRUE](http://data.worldbank.org/indicator/ER.H2O.FWTL.K3?locations=KR&name_desc=true))

Target 6.4 “By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address **water scarcity** and substantially reduce the number of people suffering from water scarcity”

Annual rainfall is 1,274mm => 25% higher than the world average

Seasonal variation in rainfall => Seasonal water scarcity

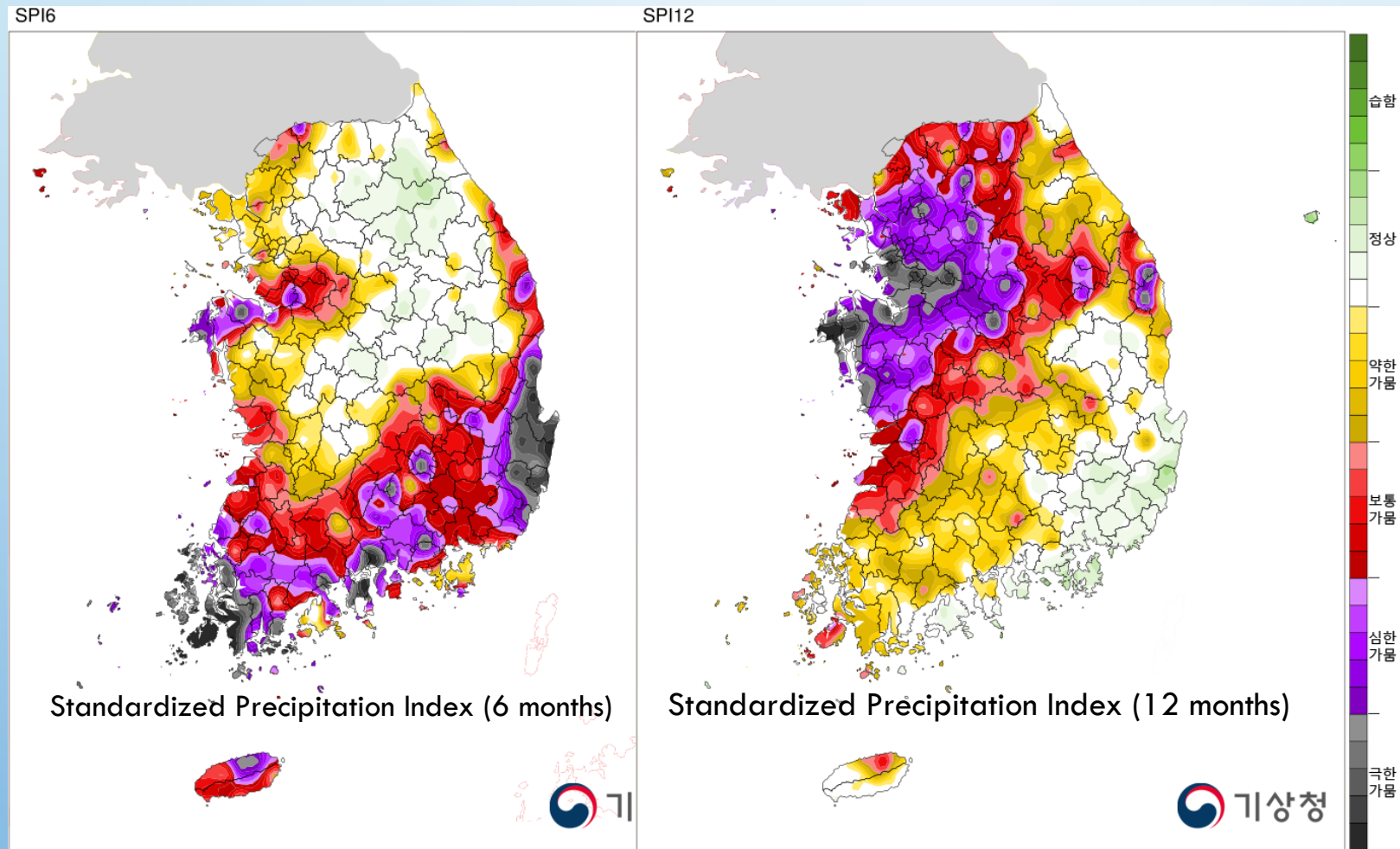
High level of water capacity (extensive dams and reservoirs) => 50% water is supplied from storage

Unevenly distributed rainfall & water storage capacity => Regional water scarcity (agriculture)

Smart ICT & Diverse water resources (desalination, rainwater harvesting) => Optimized performance

Climate change (higher uncertainty & variation) => More water-related disaster risks

Target 6.4 “By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address **water scarcity** and substantially reduce the number of people suffering from water scarcity”



(SOURCE: [HTTPS://DROUGHT.KMA.GO.KR/OBSE/DISTMAP.DO#](https://drought.kma.go.kr/obse/distmap.do#))

Target 6.5 “By 2030, implement **integrated water resources management** at all levels, including through **transboundary cooperation as appropriate**”

- “**Integrated water resources management (IWRM)**” is a framework to manage water resources in a comprehensive, participatory and coordinate manner by incorporating relevant sectors, stakeholders and agendas.
- Enabling environment, roles of institutions and management instruments are three basics for the IWRM approach.
- IWRM is based on the integrated water-shed management, which includes coastal areas as well as transboundary stakeholders.

No integration between water quantity and water quality => Institutional integration

Geopolitical tensions between South Korea & North Korea => No cooperation over the Imjin river/the Han river

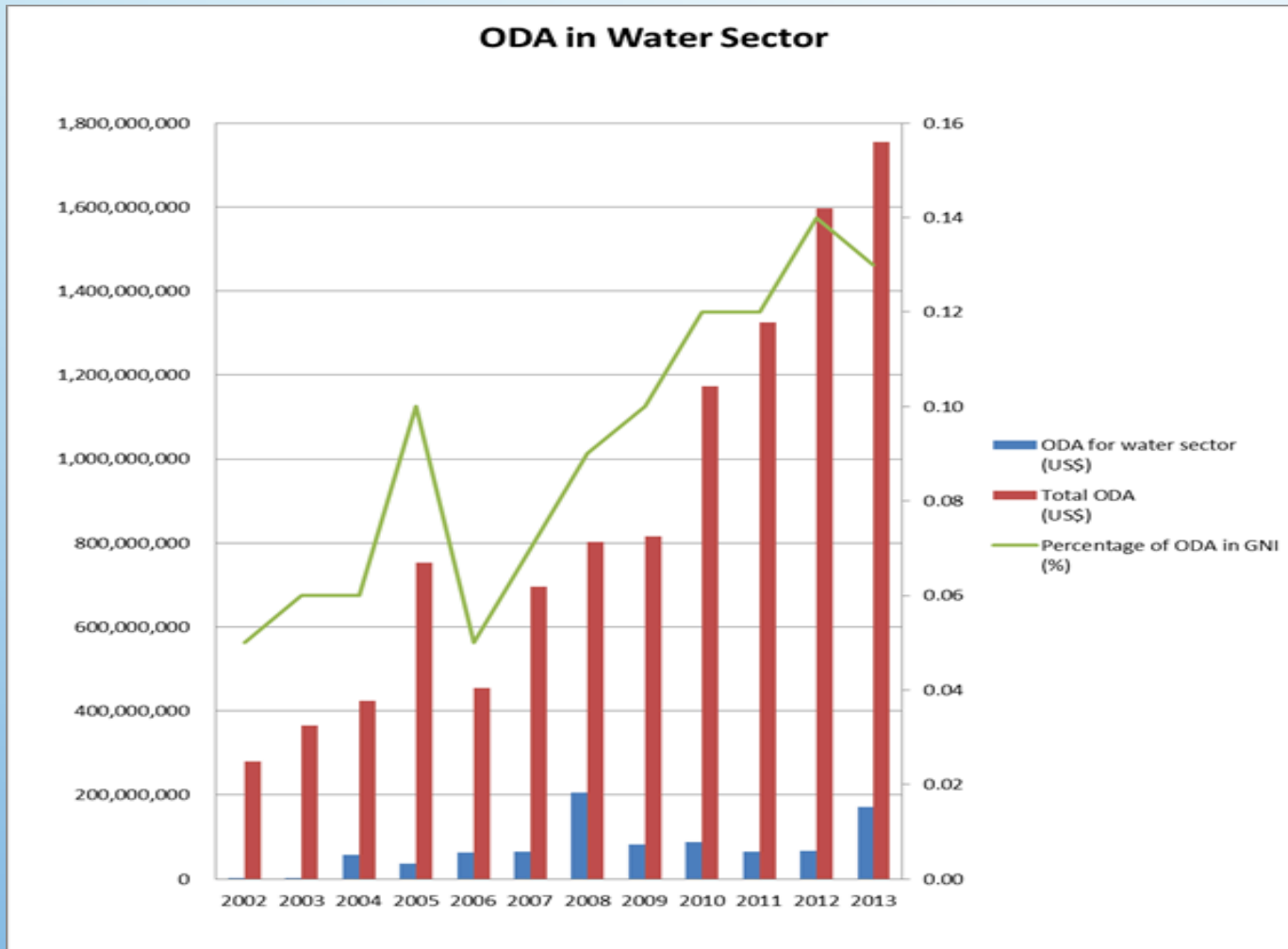
Target 6.6 “By 2020, protect and restore water-related **ecosystems**, including mountains, forests, wetlands, rivers, aquifers and lakes”

- Water availability and water quality are highly associated with ecosystems’ integrity and capacity.
- In Korea, the ‘Master Plan for Water Environment Management’ and the ‘Water Quality and Aquatic Ecosystem Conservation Act’ highlight the importance of water-related ecosystems and promote the conservation and restoration of critical, vulnerable or ecologically important aquatic ecosystems.

Total wetlands (1,399 km²/1.39% of country area) => Designated wetland protection areas (337.19 km²)

Water conservation forest (902,000 ha/14.2% of total forest)=> Decrease of forest (6,846ha/yr)

Target 6.a “By 2030, expand **international cooperation** and **capacity-building support** to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies”



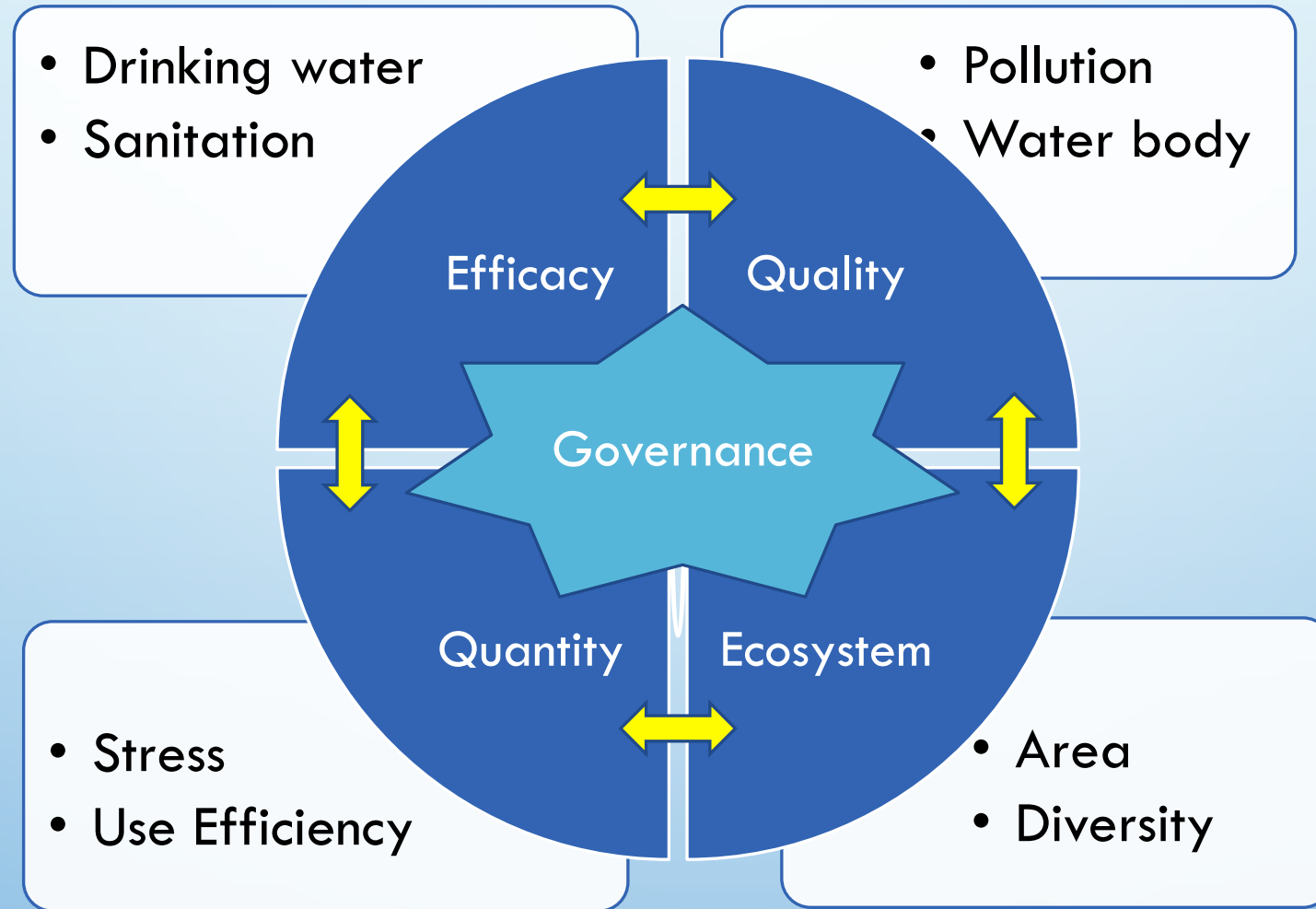
(SOURCE: KOSIS & KOICA STATISTICS)

Target 6.b “Support and strengthen the **participation of local communities** in improving water and sanitation management”

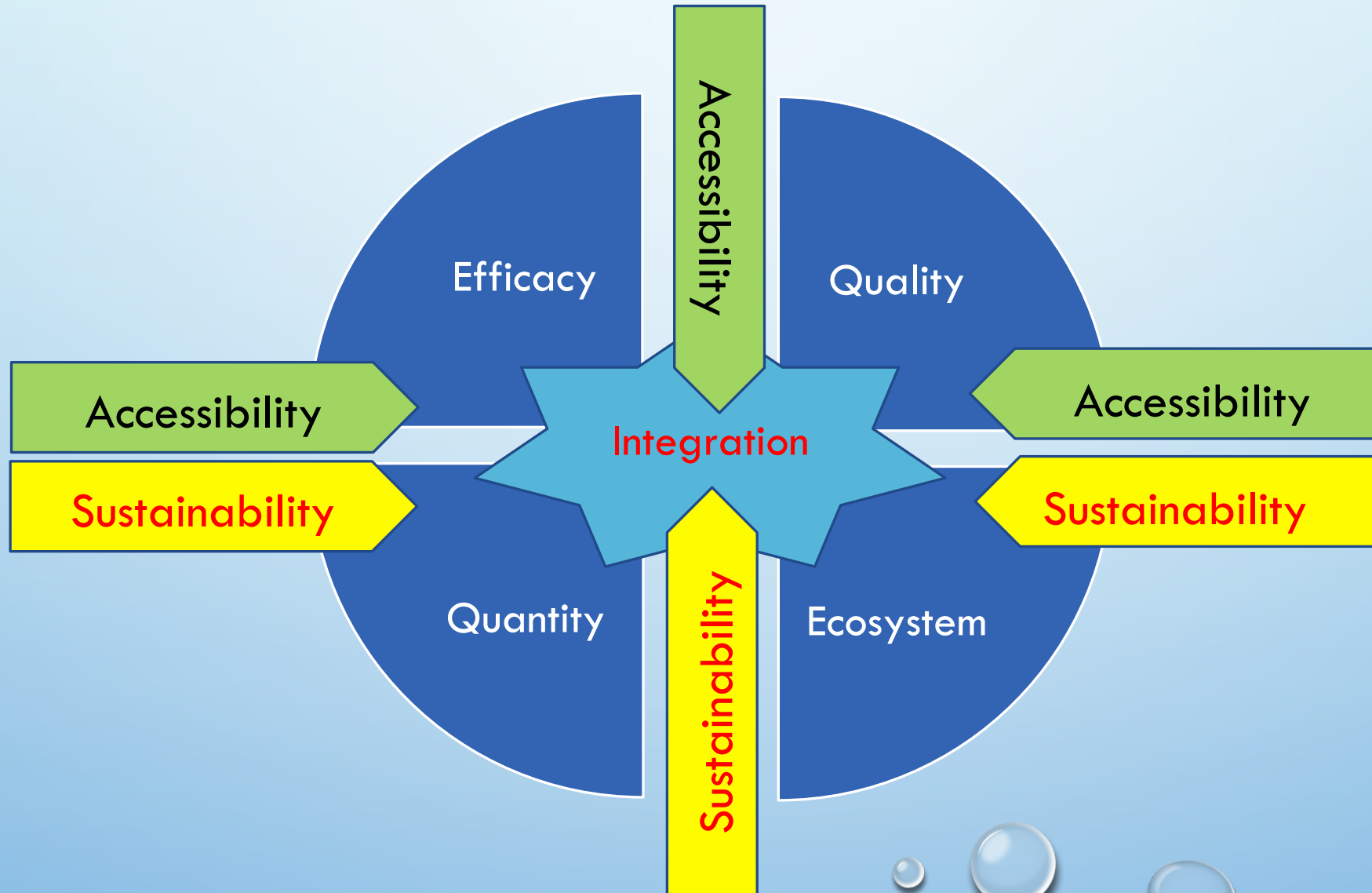
- “**Participation of local community**” can be ensured by empowering local stakeholders, by establishing participatory processes and by promoting ownership.
- In Korea, the number of local water partnerships has been increased since **Local Agenda 21** movements and water partnerships have contributed to successes of river restoration projects through co-governance among multiple stakeholders: green governance.
- Non-governmental and community-based environmental organizations recommended to establish promotional organizations for LA21.
- More supports for infrastructure, finance, and human resources are needed.

(SOURCE: [HTTP://SEARCH.KOREA.NET:8080/INTRO_KOREA2008/SOCIETY/PDF/02_10.PDF](http://search.korea.net:8080/intro_korea2008/society/pdf/02_10.pdf))

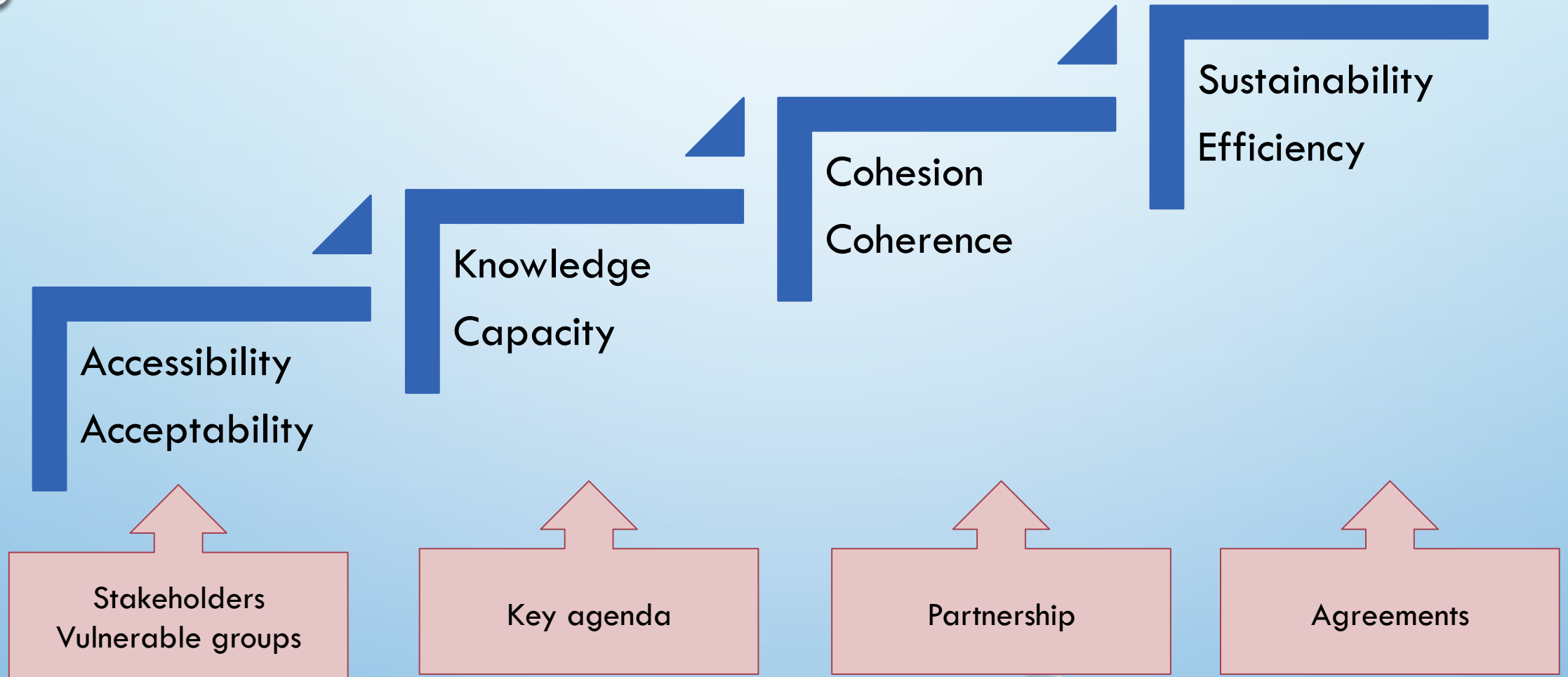
Conceptual Framework of SDG 6



Accessibility and Sustainability of SDG 6



Inclusive Water Governance



Youth Community & Inclusive Water Governance



Sustainable water management for (by) youth community!

Q & A

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