



AQUARES
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Ūdens resursu ilgtspējīgas izmantošanas politikas sekmēšana resursu efektīvos Eiropas reģionos

*Water reuse policies advancement for resource efficient
European regions*

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Interreg Europe PROJEKTS AQUARES



Projekta sākums: 01/06/2018

Ilgums: 36 mēneši (ieviešana)
+ 24 mēneši (monitorings)

Atbalsta mērķis: 4.2. resursu efektīvas
ekonomikas politikas uzlabošana



Mērķi

- ❑ Nodrošināt ūdens ilgtspējīgu un efektīvu izmantošanu un pārvaldību, veicinot ūdens atkārtotas izmantošanas integrāciju ES dalībvalstu politikas instrumentos;
- ❑ Veicināt tehnoloģisko un pārvaldības inovāciju ieviešanu saistībā ar ūdens atkārtotu izmantošanu;
- ❑ Palielināt valsts sektora un nevalstisko organizāciju kapacitāti īstenot ES politikas priekšlikumus un mērķus attiecībā uz ūdens resursu ilgtspējīgu izmantošanu.

Partneri

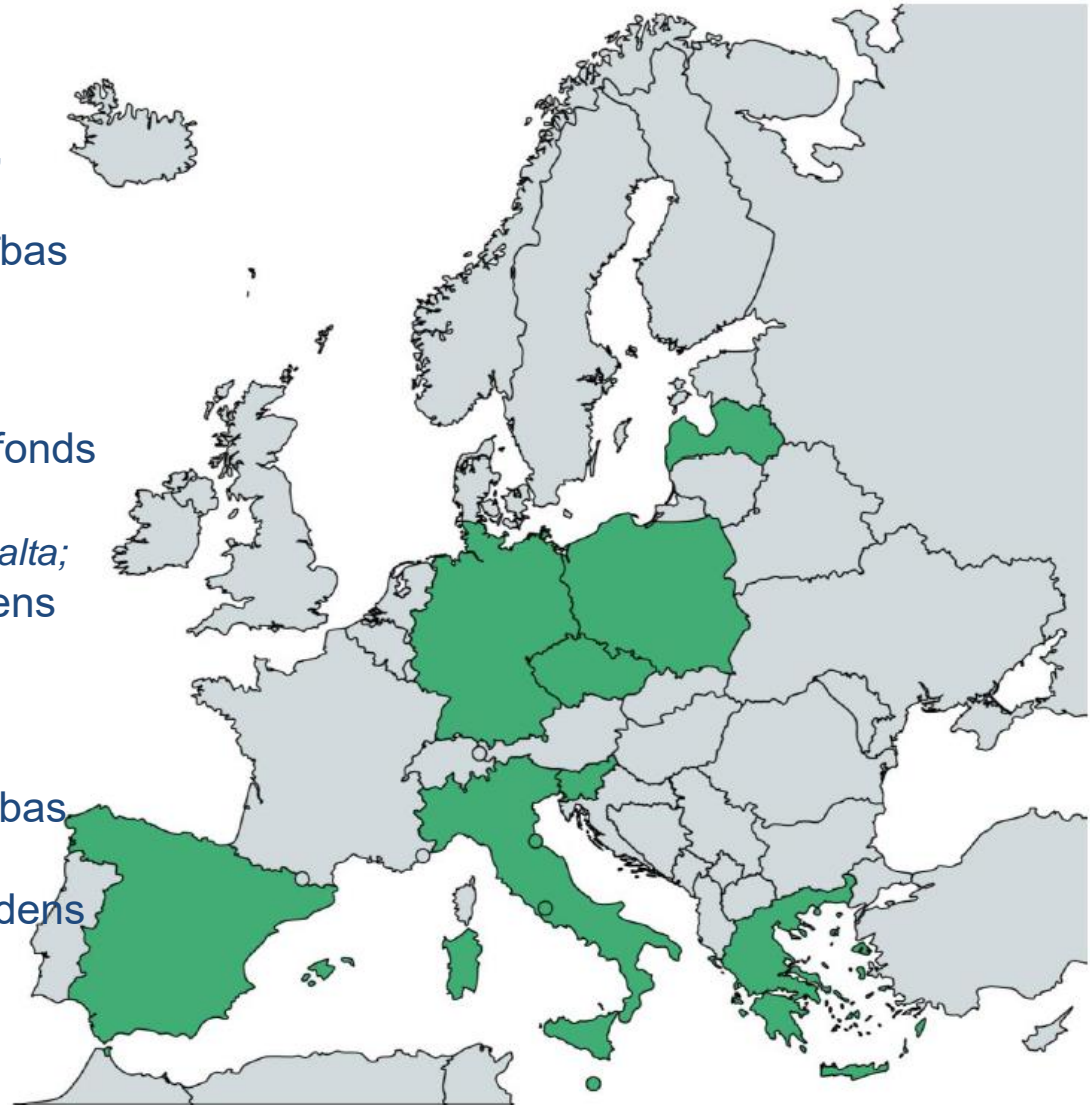
10 partneri no 9 valstīm

Vadošais partneris:

- Mursijas reģionālā pārvalde, ūdens, lauksaimniecības, lopkopības, zivsaimniecības un ūdenssaimniecības ministrija. – *Spānija*

Sadarbības partneri:

- Eiropas Vidusjūras Ūdens institūta fonds – *Spānija*;
- Enerģētikas un ūdens aģentūra – *Malta*;
- Vides un enerģētikas ministrija, Ūdens īpašais sekretariāts – *Grieķija*;
- Lombardijas Vides fonds – *Itālija*;
- Trebnje pašvaldība – *Slovēnija* ;
- Parubicas reģiona reģionālās attīstības aģentūra – *Čehija*;
- Oldenburgas un Austrumu Firsas ūdens padome – *Vācija*;
- Lodzkie reģions – *Polija*;
- Biedrība “Baltijas krasti” – *Latvija*



Galvenie rezultāti

Tematiskās studijas

- Ūdens atkārtotas izmantošanas politikas dokumentu salīdzinošā analīze
- Reģionu ūdens atkārtotas izmantošanas vajadzību analīze
- Ūdens atkārtotas izmantošanas tehnoloģiju un prakses novērtējums
- Ūdens atkārtotas izmantošanas tehnoloģiju pielietošanas ceļvedis
- Paraugprakse atbilstībai ūdens atkārtotas izmantošanas standartiem

Rīki & resursi

- Ūdens atkārtotas izmantošanas rīkkopa – mērķis atbalstīt dalībvalstu politikas plānotājus un lēmuma pieņēmējus: izziņas resursi, investīciju analīze, labas prakses tehnoloģiju datu bāze

Politikas instrumenti

- Rīcības plāni 9 politikas instrumentu uzlabošanai

Pasākumi

Reģionāli

- 54 reģionālas iesaistīto pušu (stakeholder) sanāksmes
- 18 sabiedriskās apspriešanas sanāksmes

Starpreģionu

- Publisko un privāto investīciju piesaiste atkārtotā ūdens resursu izmantošanā
- Ūdens atkārtotas izmantošanas tehnoloģijas
- Ūdens atkārtotas izmantošanas standartu izstrāde un pielietošana
- Atkārtotas ūdens resursu izmantošanas politikas un prakses pārņemšana
- Mācību braucieni un vietas vizītes lai nodotu pieredzi par ūdens resursu atkārtotu izmantošanu
- Eiropas reģionālā konference, lai nodotu gūto pieredzi

Latvijas partnera - Biedrības «Baltijas krasti» atbildība un uzdevumi

- ❑ Vienotas rīku un metodoloģijas pieejas izstrāde rīcības plānu sagatavošanai ūdens resursu atkārtotas izmantošanas jomā, izklāstot tehniskos norādījumus, kā arī iekļaujot gūto pieredzi.
- ❑ *Rīcības plāns ūdens atkārtotas izmantošanas integrēšanai politikas plānošanas instrumentos Latvijā*
- ❑ Ilgtspējas stratēģijas izstrāde ūdens atkārtotas izmantošanai projekta partnervalstīs (**Sustainability plan**) – darbības projekta 2.fāzē (monitoringa fāzē) un pēc projekta īstenošanas
- ❑ *Iesaistīto pušu darba grupas sanāksmes/ūdens atkārtotas izmantošanas politikas un prakses veicināšana dažādos līmeņos un sektoros Latvijā*
- ❑ Komunikācijas pasākumi
- ❑ Pieredzes apmaiņas vizītes (t.sk. iesaistot ieinteresētās puses (stakeholders))

Projekta aktualitāte un izaicinājumi I

KLIMATA IZMAIŅAS

Sausuma/tuksneša teritoriju skaita palielinājums

Stipri plūdi un katastrofāli laika apstākļi kļūst arvien biežāk novērojami

EKOLOĢISKĀ PĒDA

Resursu degradēšana

Pašatjaunošanās kapacitātes samazināšanās

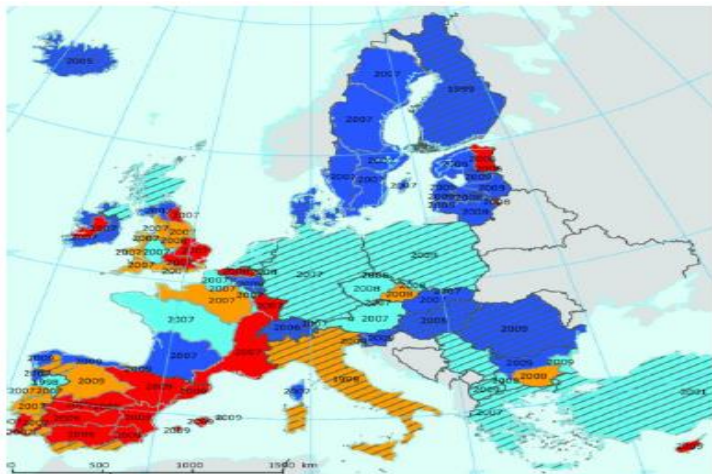
PATĒRIŅŠ/KONKURĒTSPĒJA

Iedzīvotāju skaita palielināšanās

Pārtikas pieprasījuma pieaugums

Patēriņa uzvedība

Zemu izmaksu ražošana



Projekta aktualitāte un izaicinājumi III

- ❑ **Ūdens struktūrdirektīva (2000/60/EC, WFD)**, Pielikums VI, B daļa: *Efektivitātes un atkārtotas izmantošanas pasākumi, ūdeni lietderīgi izmantojošu tehnoloģiju izmantošanas veicināšana rūpniecībā un ūdeni taupošu apūdeņošanas sistēmu izmantošana (tiks pārskatīta 2019.gadā - lielāks uzsvars uz ilgtspējīgu tai skaitā atkārtotu ūdens izmantošanu);*
- ❑ **Komunālo notekūdeņu attīrīšanas direktīva (91/271/EEC, UWWTD)**, 12.pants: *Attīrīto notekūdeņu atkārtota izmantošana, kad vien tas ir pieņemami. Samazināt izplūdes vietu nelabvēlīgo ietekmi uz vidi;*
- ❑ **EU Vadlīnijas integrētai ūdens atkārtotai izmantošanai ūdens plānošanā un pārvaldībā Ūdens struktūrdirektīvas ietvaros (2016)** - sniedz informāciju ES dalībvalstīm (ieredņiem, plānotājiem, lēmumu pieņēmējiem) ūdens atkārtotas izmantošanas pārvaldības plānošanā, politikas instrumentu attīstībā;
- ❑ **Eiropas ūdeņu konceptuālais plāns EC COM (2012)673 – identificē ūdens atkārtotu izmantošanu kā būtisku pasākumu, kuram nepieciešams ES līmeņa koordinēts atbalsts uzticības veicināšanai un atkārtotas izmantošanas prakses pārņemšanai;**

Projekta aktualitāte un izaicinājumi III

- **Aprites loka noslēgšana – ES rīcības plāns pārejai uz aprites ekonomiku (EC COM (2015)614) – *vairākas aktivitātes attīrītu notekūdeņu atkārtotai izmantošanai, fokuss uz aktivitātēm, kas noslēdz visu aprites ķēdi*** un paredz ES pievienoto vērtību;
- **Ilgspējīgas attīstības programma 2030.gadam (2015), apakšmērķi**
 - *ievērojami uzlabot ūdens izmantošanas efektivitāti un uzlabot ūdens kvalitāti t.sk. drošu atkārtotu izmantošanu*
- **Eiropas Ūdens Inovāciju partnerība (Stratēģiskais īstenošanas plāns (2012))– *inovatīvu risinājumu ūdens sektorā attīstība līdz 2020.***

Projekta aktualitāte un izaicinājumi IV

Priekšlikumi regulai par ūdens atkārtotas izmantošanas minimālajām prasībām (28.05.2018.)
(COM/2018/337)



Noteikumi ūdens atkārtotai izmantošanai ES lauksaimniecības zemju apūdeņošanai un laistīšanas, kas ietver:

- **minimālās prasības**, kas ir vajadzīgas no komunālo notekūdeņu attīrīšanas iekārtām iegūto attīrīto notekūdeņu atkārtotai izmantošanai un kas attiecas uz mikrobioloģiskiem elementiem (piemēram, *E. coli* baktēriju koncentrāciju) un monitoringa prasībām regulārajai un validēšanas uzraudzībai. Minimālo prasību noteikšana nodrošinās, ka ūdens, kas iegūts saskaņā ar jaunajiem noteikumiem, būs drošs apūdeņošanai;
- **riska pārvaldību** - visur, kur vien jānovērš papildu bīstamība, lai ūdens atkārtota izmantošana būtu droša;
- **lielāka pārredzamību** - sabiedrībai būs iespēja iegūt informāciju tiešsaistē par ūdens atkārtotas izmantošanas praksi savā dalībvalstī.



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2nd Stakeholder's Meeting – Linkage of Water Reuse with other policies

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26/04/2019

Scope of the Presentation

Annex VI Part B (x) of the WFD refers to *efficiency and reuse materials inter alia, promotion of water efficient technologies in industry and water saving irrigation techniques as one of the supplementary measures to be adopted with the Program of Measures in Art 11(4)*

The scope of this presentation is aligned with the objectives Directive and is meant to:

- Explain how and where water reuse fits in an integrated water resource management model
- Show the interconnection between water policy and various economic sectors
- Explain the benefits which may be derived by reusing water including the reduction of water stress if treated water is properly matched with the intended use.
- Show how water reuse improves efficiency of use and is an effective source to alleviate scarcity and improve the status of water bodies.

Water Stress and Water Reuse

- Main pressures on water consumption derive from agriculture, industry and urban domestic demand, tourism included
- Drought has dramatically increased over the past 30 years; at least 11% of the European population and 17% of Europe have been affected by water scarcity to date – no longer confined to southern Europe.
- European and national strategies recognize water reuse as a sustainable alternative to other conventional water resources.
- Sustainable Development Goal on Water (SDG 6) specifically targets a substantial increase in recycling and safe reuse globally by 2030.
- Water reuse is a top priority area in the [Strategic Implementation Plan of the European Innovation Partnership on Water](#).
- Maximization of water reuse is a specific objective in the Communication [“Blueprint to safeguard Europe’s water resources”](#).

Policy Considerations of Water Reuse



- Regulation on the reuse of water must take into account health and environmental considerations.
- Setting of guidelines and codes of good practice from different applications – matching the right quality of treated effluent for specific applications.
- Identification of areas/sectors where water reuse can be safely and effectively utilized by agriculture and industry or recharged into the aquifers.
- Change consumer misconceptions through information campaigns.
- Improve infrastructural investment and identify cost-effective and/or low cost options for the distribution of treated water.
- Monitor the impact of irrigation on soil salinization and associated effects on crop and produce output.
- Promote water re-use for tourism and urban use not requiring potable water (ex. Road cleaning, landscaping etc..)
- Cost considerations and quality requirements may require additional cost.

Climate Change and Drought Considerations – Hard facts

- Emissions of CO₂ and other green-house gases are the main reason behind climate change; effects on temperature, precipitation and extreme events.
- Southern Europe experienced a reduction of 20% rainfall during the last century.
- Water demand has doubled in the second half of the last century as a result of rapid economic development, improved living standards and increase in population.
- Future estimations forecast a 25% increase in consumption by 2025 in the southern and eastern Mediterranean.
- Agriculture is by far the major use with an average 65% in the Mediterranean.
- Tourism adds more pressure to water availability – tourists consume up to five times more than average citizen.

Need to Address the Issue of Water Stress.

- Today 1/3 of EU territory suffers from water stress all year round and WS&D affecting most EU countries.
- Projections show a worsening of the problem by 2050.
- Lower water availability will affect competitiveness on the internal market.
- Accepting reuse as an alternative resource will alleviate water stress on conventional natural resources.
- Reducing water stress lowers the rate of desertification and soil erosion.

Integration of Water Reuse at EU Level



In 2015 Commission committed to develop further actions for the uptake of water reuse where economically feasible and safe to public health.

A number of actions were proposed to be followed, namely:

- Integration of reuse in water planning and management as a measure to reduce pressure from WS&D, and overcoming the potential barriers to the acceptance of water reuse. Guidelines developed within the Common Implementation Strategy on integration of reuse within the context of the WFD.
- Minimum quality requirements for water reuse in irrigation and aquifer recharge. The EU Commission proposed legislation underwent an intensive public consultation and is currently in the 2nd reading in the EU parliament/Council.
- Water reuse in industry: The Commission is looking into the development of best practices for more integration of water reuse in industrial processes under the scope of the Industrial Emissions Directive.
- Support to research and innovation in water reuse; development of smart technologies, improvement of water treatment facilities etc. H2020 research projects.

Demand Management. Hierarchy of Policy Measures

- Demand management should come first and should include but not be limited to:
 - Leakage control
 - Investment in infrastructural and network improvement, pressure/flow control, real-time monitoring
 - Smart metering
- Pricing systems aligned with social policies; rising block tariffs aimed at rewarding efficiency whilst deterring wastage.
- Awareness raising on water saving culture; education, exposure of school children to water saving, training and capacity building of economic operators in water efficiency.
- Integration of water reuse policy and efficiency measures with other policy namely agriculture land-use, industry and energy generation, etc..
- Alternative resources, ex desalination, abstractions, should be considered once all potential water savings and efficiency measures have been exhausted.

Expanded Achievements of Reuse Initiatives

- Alleviating water scarcity in the context of climate change.
- Increasing availability for irrigated agriculture cost-effectively and safely.
- Protecting economic feasibility and profitability of EU farmers.
- Establishment of an enabling framework through a common approach for water reuse for irrigation across the EU to facilitate a more efficient management of resources.
- Protection of consumers, workers from disease.
- Protecting the environment, water resources and soil.
- Laying a positive public perception and acceptance of water reuse.

Value Added of Action at EU Level

- EU member states share 60% of EU river basins; actions across the EU necessary to address water management issues and pollution.
- Reuse will be restore depleted river basins.
- Common approach needed to maximize cost-benefit and reduce cost of water treatment providers.
- For agriculture irrigation action at EU level avoids unfair distortions to the internal market of agricultural products irrigated with reused water.
- For aquifer recharge due to consideration has to be given to the local conditions in line with EU Directives particularly the GWD.
- In an urban/domestic scenario water reuse can substitute more costly resources where non-potable water is required: ex landscaping, tourism, etc..

EU Policy Context and Applicability of Water Reuse

- Art.5 of the WFD requires an analysis of pressures on water bodies. Pressures include both qualitative and quantitative pressures.
- Where over abstraction is identified, MS should take appropriate measures to reduce existing ones and reduce further depletion arising from climate change.
- Measures may include but not limited to, leak reduction, demand management.
- Water reuse may also be applied to groundwater recharge if the effluent is safely treated – adopt the *prevent and limit* criterion and do not create a quality problem whilst addressing quantitative issues.
- Alternatively it may be discharged to a surface water body especially where this is under heavy stress.

River Basin Districts Under Stress

(Courtesy of the EEA)

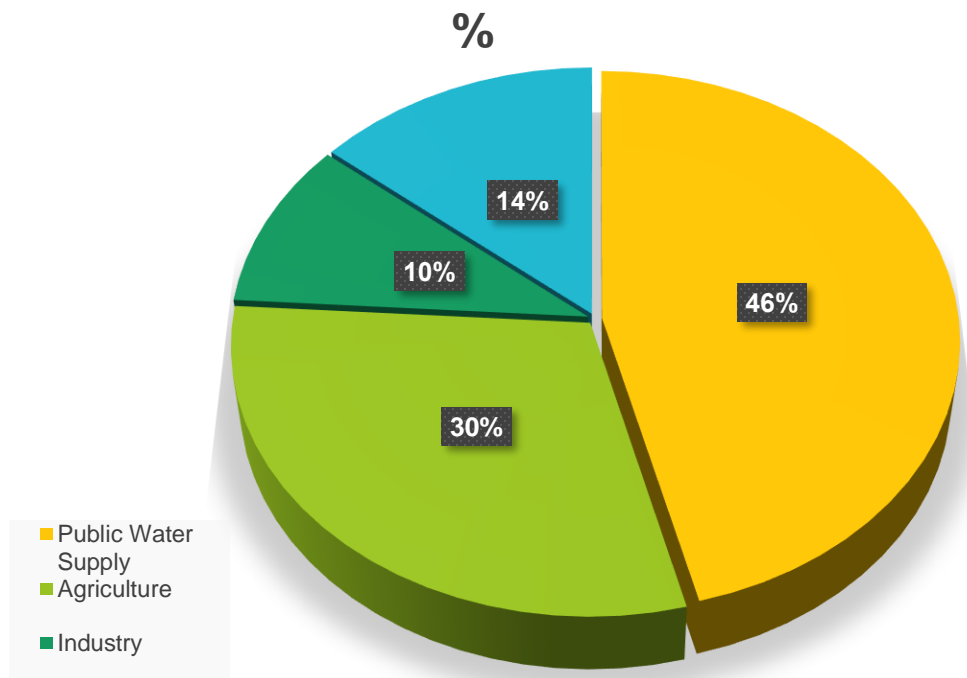


Source: FFA 2016

Sectoral Water Uses in Europe

- Municipal water supply accounts for 46% of abstractions in Europe
- Agriculture accounts for 30% of total abstractions and around 55% of consumptive water users.
- Industrial processing takes around 10% of abstraction whilst 14% is used for cooling waters and power generation.
- Pressure for irrigation water is therefore higher than southern countries.

Sectoral Water Abstraction in Europe



On average, water consumption in the EU is only 32% of water abstraction. The rest is returned to the water cycle where it is subjected to further treatment.

Irrigation Demand

- Of all abstractions, agriculture consumes around 55% almost entirely for irrigation.
- In southern Europe, these figures increase to 62% of total abstractions and 73% of consumptive use.
- Irrigation is the most important water demand especially in the Mediterranean countries: Greece (83%), Italy (57%), Spain (68%), Portugal (52%).
- The volume of irrigation which is water dependent on climate – countries in north and central Europe are less dependent on irrigation applications than those in southern Europe.
- Pressure for irrigation water is therefore higher in southern countries and hence higher possibilities for water reuse.

Water Reuse in Agriculture

- Water reuse can substitute both groundwater and surface waters.
- It is a valuable resource of nutrients for depleted soils.
- In southern Europe, agriculture is heavily dependent on irrigation water. On the contrary, in northern Europe, crop productivity is higher than in the south for climatological reasons – mainly higher levels of rainfall.
- With the effects of climate change, temperatures are set to increase and rainfall becomes more scarce – higher evapotranspiration rates.
- Reuse of treated water, if diligently managed can solve water scarcity and improve productivity of crops where dry conditions have so far affected negatively agriculture.

CAP Reform and Instruments Promoting Good Water Management

- CAP present major influence on agriculture and water reuse.
- CAP reform in the 90's led to a more efficient use of water in the south-western countries.
- Since 2002, an increase on irrigation demand has been observed south-eastern Europe (Bulgaria, Rumania, Hungary), mainly as agri-production.
- Rural development measures supporting investment in smart irrigation techniques leading to higher efficiency levels.
- Cross compliance framework which includes statutory requirements related to water management and protection arising from the GWD and the ND.
- Protection of water quality and quantity as required by the WFD. The directive requires MS to have adequate RBMPs in place, and adequate pricing instruments to ensure efficient water use.
- Payments under Art.38 of the Rural Development Regulation will contribute to the implementation of the WFD.

Cross Compliance Regulations

Since 2005 farmers receiving subsidies became subject to cross compliance regulations which include two main elements;

- a) Statutory management requirements which refer to 18 legislative standards related to environment, food safety, animal and plant health and animal welfare.
- b) Good Agricultural and Environmental Conditions (GAEC) – The obligations of keeping land in good agricultural and environmental conditions refers to a range of standards related to soil protection, maintenance of soil organic matter and structure, avoiding the deterioration of habitats and water management.

Water reuse therefore fits within this regulatory framework in providing a suitable alternative to conventional water resources and avoiding resource depletion.

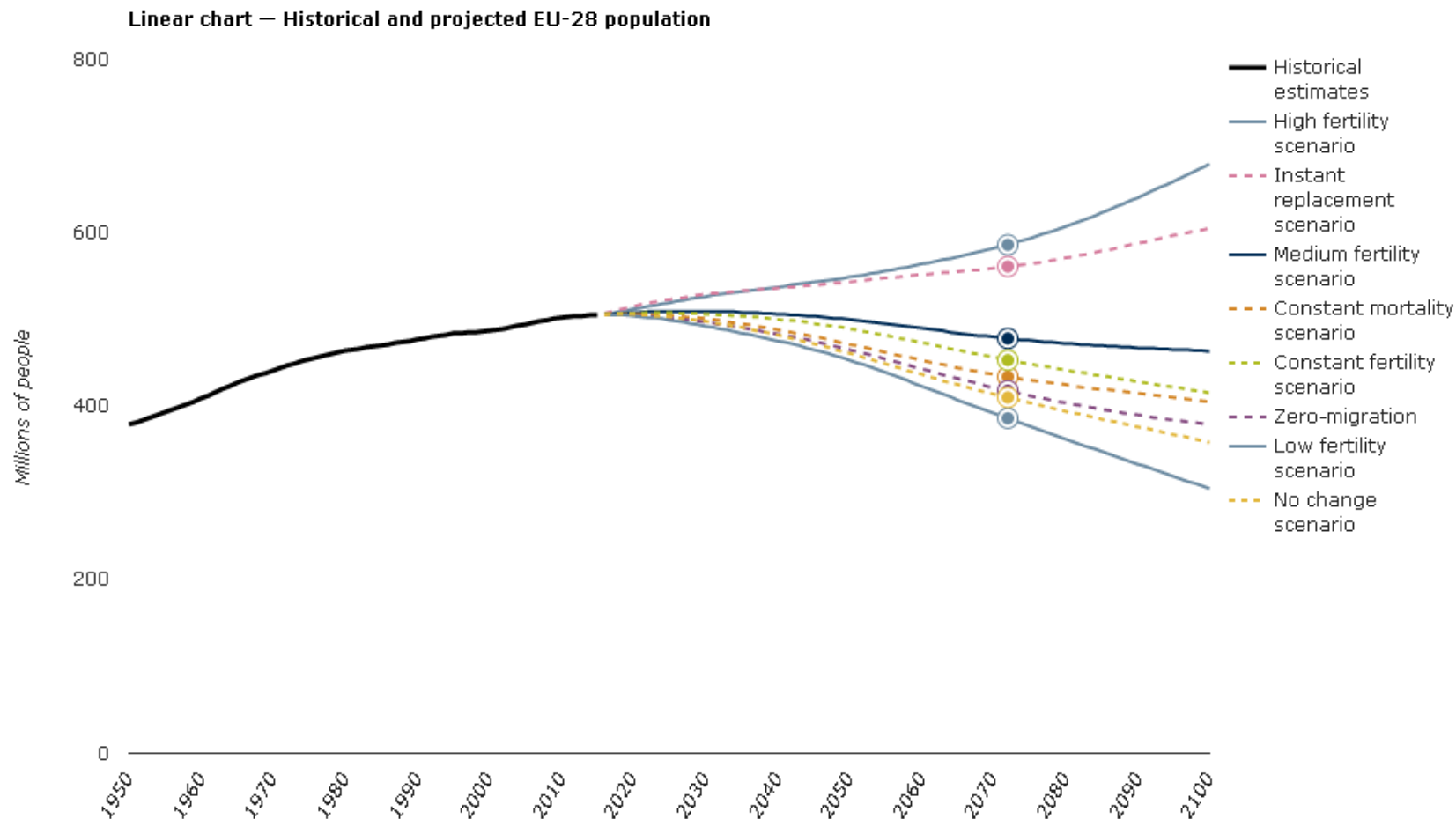
Urban Planning and Water Supply

- Urban water supply includes households, public services, commerce and small industry.
- In several countries, around 40% of urban water supply goes to domestic use.
- Variations on public water can be observed across Europe as a result of different lifestyles, pricing of water supplies and leakage rates.
- Water reuse can replace existing practices of using high quality sources used for non-potable purposed in urban areas; ex. Landscaping, road cleaning, maintenance of sewers etc..
- Water reuse in urban areas can also supplement rainwater harvesting as a secondary source of water if condominiums are adequately planned for water reuse.

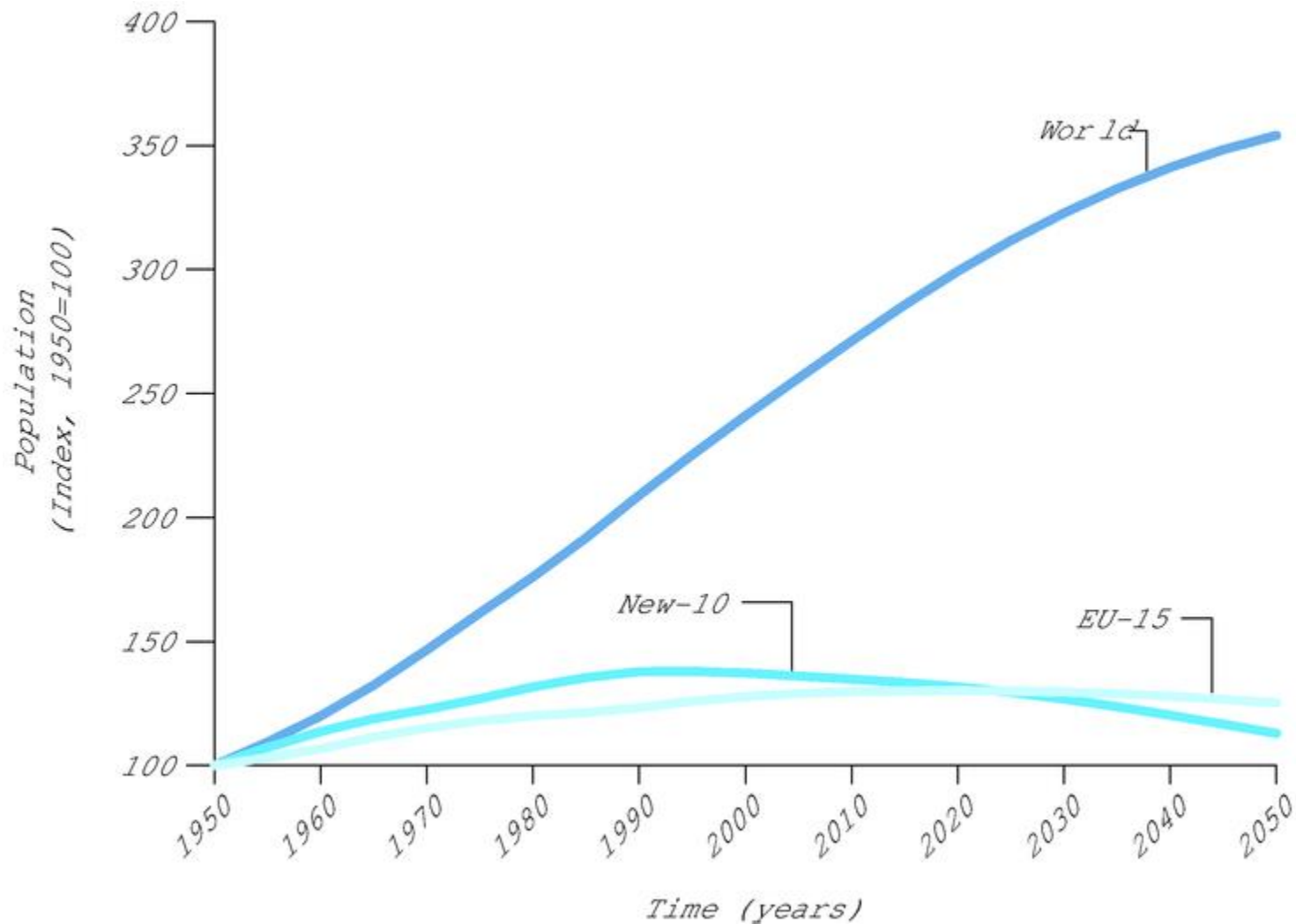
Demographic Trends and Changes

- Population in EU-28 projected to increase from its current **505M** to 510M by 2030.
- In subsequent decades, it will decrease to about 46% assuming medium fertility rates.
- Age structure will also change: people aged 65 and over will increase from current 19% to 30% by 2050 and to 32% by 2100, assuming medium fertility rates.
- Changes in the demographic model will induce changes on water demand arising from change in lifestyle, climate change, personal hygiene etc.
- As population density increases in heavily urbanized regions, a higher demand will be placed on pristine resources for domestic consumption purposes.
- Also there will be more need to improve on water efficiency and rely on water reuse if stress on water bodies is meant to be checked.

Historical and Projected EU Population



Population Growth Rate



Industrial Water Use

- Industry is an important economic sector where water reuse can be gainfully applied.
- The main water consuming industries include metallurgy, chemical industry, paper processing.
- Industrial use of water accounts for 10% of water abstractions in the EU.
- Cooling water accounts for 14%, most of it being returned to the water cycle.

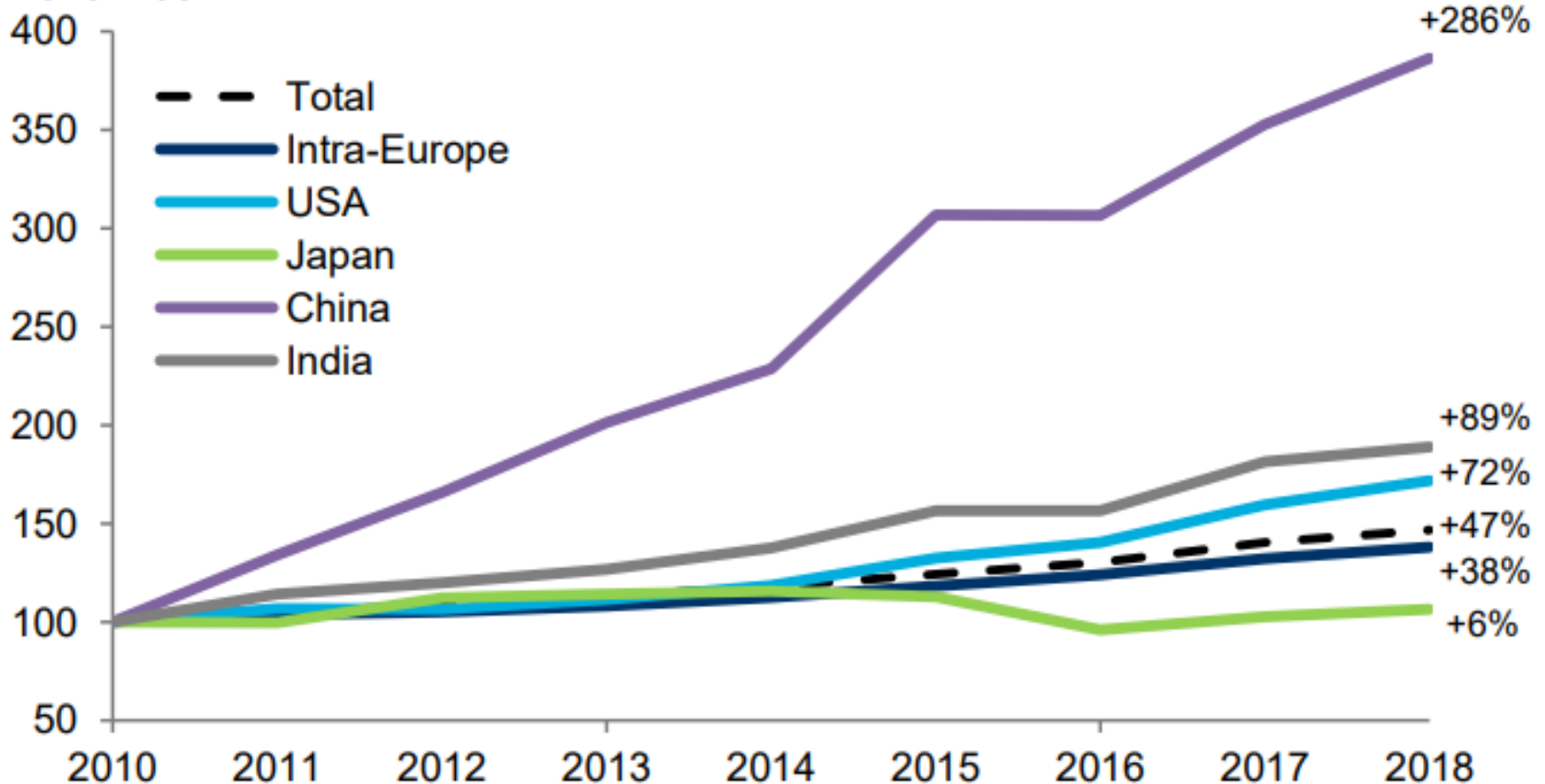
Tourism

- It is well known that tourists consume almost three times as much as the average person living in large cities.
- Peak seasons for tourism often coincide (except for mountain resorts) with summer time when water resources are scarce.
- In coastal areas water demand for tourism is often buffered by additional abstraction of groundwater leading to saltwater intrusion.
- Water reuse has a wide scope of application in the tourism industry; golf courses, landscaping, etc.
- Tourist arrivals in Europe have increased by 47% since 2010 (*Tourism Economics*).

Tourism Arrival Trends in Europe

European tourism arrivals trends

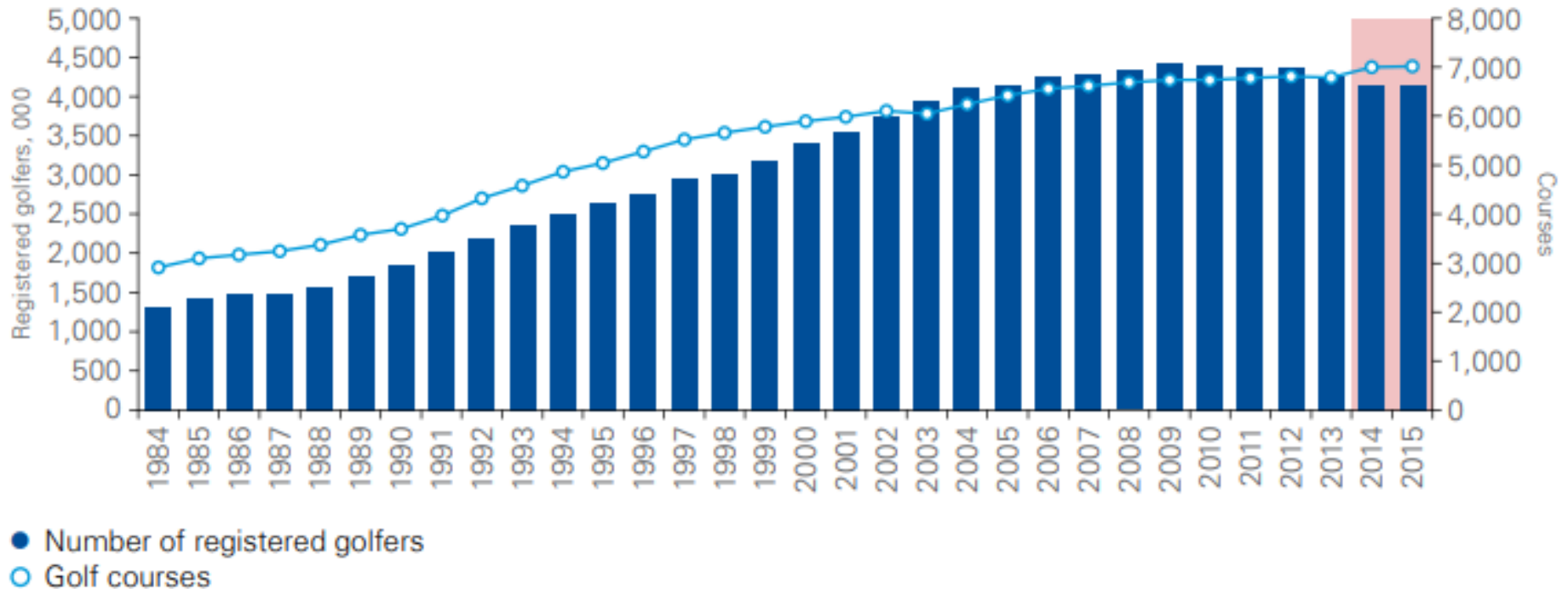
2010=100



Source: Tourism Economics

Golf Trends in Europe (Last 30 Years)

Development of golf in Europe, 1985 – 2015



Sources: European Golf Association and local golf associations with KPMG elaboration

Note: Please note that between 1985 – 2013, data was sourced from the European Golf Association. For the years 2014 and 2015, local golf associations reported directly to KPMG. Please see our methodology on page 5 to learn more about the changed

Water Conservation and Reuse

- Water reuse is an important component of water conservation strategies and demand management.
- Water can be reused for several purposes: irrigation, MAR, non-potable usage in urban centers, recreational purposes.
- Benefits of reuse:
 - - Alternative supply for non potable purposes
 - - Reduction of environmental impacts
 - - Reducing wastewater outflow
- In the framework of IWR strategy, water reuse enhances water availability and reduces pressures on depleted resource.

Measures Proposed by the Commission in 2018

New rules proposed to stimulate and facilitate water reuse in the EU for agricultural irrigation aimed at helping farmers overcome the water scarcity in a sustainable manner:

- Minimum requirements for the reuse of treated wastewater from urban wastewater treatment plants covering microbiological elements, monitoring requirements for routine and validation monitoring.
- Risk management addressing additional hazards for water reuse to be safe.
- Increased transparency: public to have more access to inform about water reuse practices in EU member states.

Quote by H.E. Commissioner Vella, responsible for the environment

“This proposal will create only winners – our farmers will have access to a sustainable supply for irrigation water, our consumers will know the products they eat are safe, and our businesses will see new opportunities. The biggest winner of them all will be the environment as the proposal contributes to better management of our most precious resource – water.”



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Thank you!

Questions welcome



Project media