IDF GUIDELINES AND IDF INPUT TO CCFH GUIDELINES ON USE AND REUSE OF WATER

Aim: To ensure that the CCFH general guidelines and the specific annex for dairy are appropriate for the dairy sector. In addition, IDF to develop guidance for the dairy sector that would complete CCFH work, address indicators for hygiene, as well as chemical quality, which would not be covered by CCFH work.

Priority objectives for 2024: As co-lead of the CCFH eWG on dairy annex, conduct the drafting of the annex according to facts provided by IDF and Codex members.
Status: CCFH general guidelines published.
IDF **co-lead of the WG**. Initial dairy annex was drafted by delegations of EU and Chile, as well as IDF Action Team. Advanced draft discussed at CCFH and recommended for adoption by CAC at step 5/8.
CCFH - Further work on water safety plan and technologies (not specific to Dairy).
IDF remains co chair.
IDF complementary work to kick off to complement Codex guidance.

Fact Sheet

connect to the world of dairy

Input to EDA Factsheet on WATER USE/REUSE IN THE DAIRY SECTOR

- **Why is water relevant in dairy industry and sector?**

Water is a finite and vulnerable vital resource, and an essential element for dairy: **85-90 % of milk is made of water!** Even most importantly, water is key to high quality dairy products, as it is used in the dairy plants for **heating, cooling, washing, and cleaning**, always prioritising **the highest hygienic standards and maximum safety** in all sectors of production.

Water scarcity is an increasing problem that simultaneously affects society, the environment, and food production, both at primary production and at the processing stage. Therefore, to tackle the challenge of food security, the challenge of water has to be met first. (1)

The importance of water is … BIG and SMALL

Without water, there is no **farming** (1): in fact, agriculture uses 70% of the fresh water worldwide. A reliable, high quality water supply is essential to dairy farms. Water is used for animal consumption, milk cooling, cleaning and sanitizing equipment, cow cooling, irrigating crops, producing value added products, moving manure and cleaning the barns via flush systems. (2)

Regarding dairy **processing**, according to published research results, most dairy plants consume from 1 to 10 m^3 of water per every m^3 of processed milk. (3) Water supply to dairy processing plants varies according to location, but may be from town water, bore wells, wells, river, dams or irrigation channels (4), and it has many uses in dairy processing—heating, cooling, washing, and clean-up. (5)

The dairy industry is continuously working on greater water sustainability through various international, as well as national, initiatives. For example, in UK, the Dairy companies featured in the Food and Drink Manufacturing Water Use Report (2015) have reduced their water intensity – the amount of water used to produce a tonne of product – by 13% over the preceding seven years, accounting for a reduction of 0.2m3 per tonne of product. (6)

Water scarcity:

Freshwater withdrawals are expected to increase with the expanding human population, potentially worsening local water resources in many regions in the world. (7) Europe's freshwater resources are also under increasing stress, with a worrying **mismatch between demand for, and availability of, water resources** across both temporal and geographical (spatial) scales (EEA, 2012). (8) This is not only an issue for arid regions with low rainfall and high population density that are prone to increasing water stress; temperate areas with intense agricultural, tourism and industrial activities also suffer from frequent water shortages and/or expensive supply solutions (Rodriguez et al., 2007a). (9)

Resource availability is further compromised by **poor or unsuitable water quality** which can significantly increase the financial costs of supply. (8) The microbiological quality of milk determines the range of heat treatments in a dairy plant, and it affects the usage of cooling water in heat exchangers and the consumption of cleaning water. (3) Water savings at dairy processing sites can also be made through more efficient cleaning in

II

(Comunicazioni)

COMUNICAZIONI PROVENIENTI DALLE ISTITUZIONI, DAGLI ORGANI E DAGLI ORGANISMI DELL'UNIONE EUROPEA

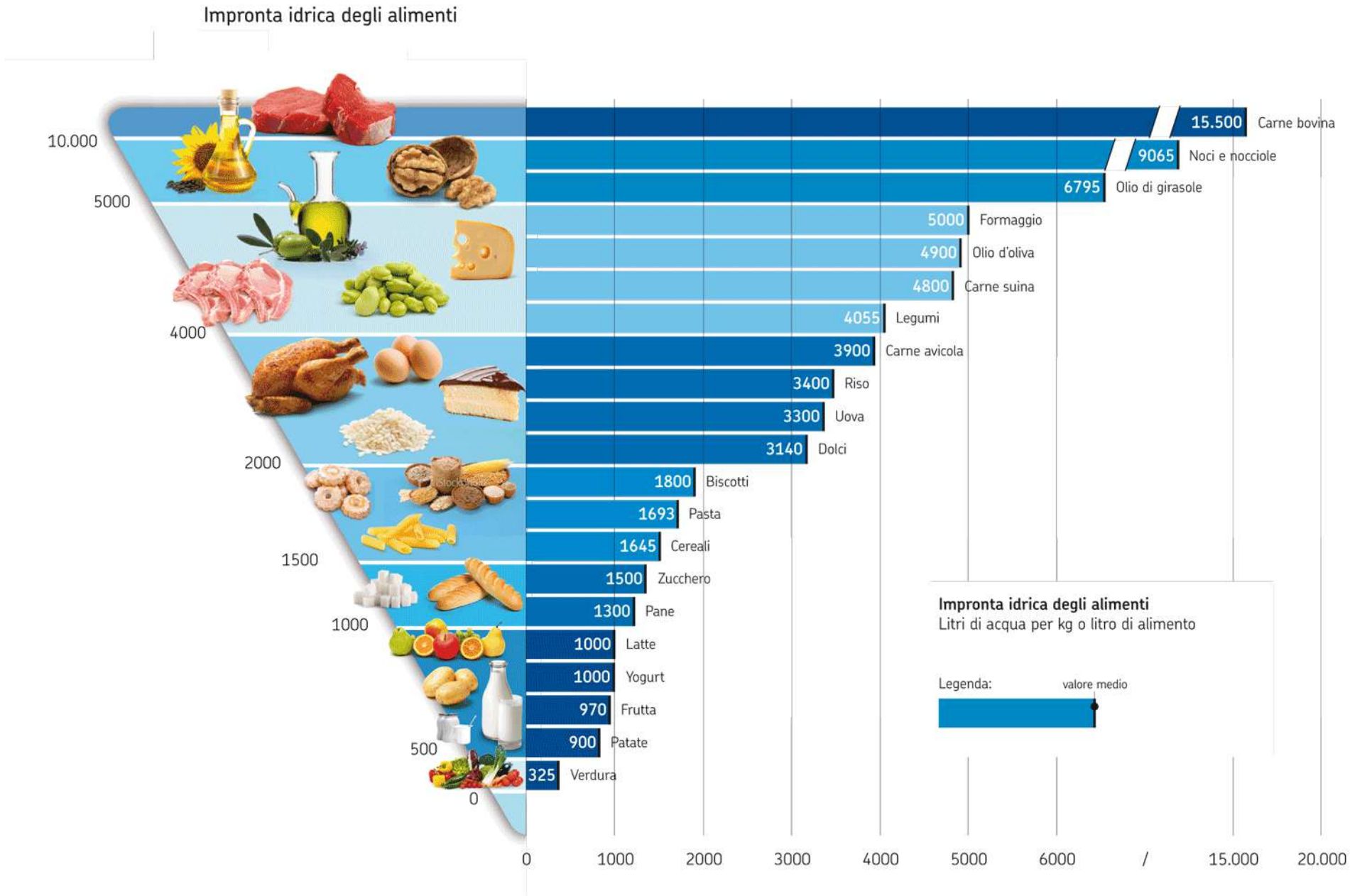
COMMISSIONE EUROPEA

COMUNICAZIONE DELLA COMMISSIONE

Orientamenti a sostegno dell'applicazione del regolamento (UE) 2020/741 recante prescrizioni minime per il riutilizzo dell'acqua

(2022/C 298/01)

Indice



GRAN MORAVIA Water Footprint

In 2011 **Gran Moravia** was **the first cheese in the world** to **evaluate** his **Water Footprint** (DNV) and to **communicate** it to the consumers.

Water Footprint	Gran Moravia	Parmigiano Reggiano *
Green Water	1 944	9 500
Blue Water	72	700
Grey Water	78	ND
lt/ 1 kg product	**2 094**	**10 200**

*Source: Rulli, Veroni, Rosso, Dip. Ing. Civile Politecnico di Milano, 2011

Latte PIÙ

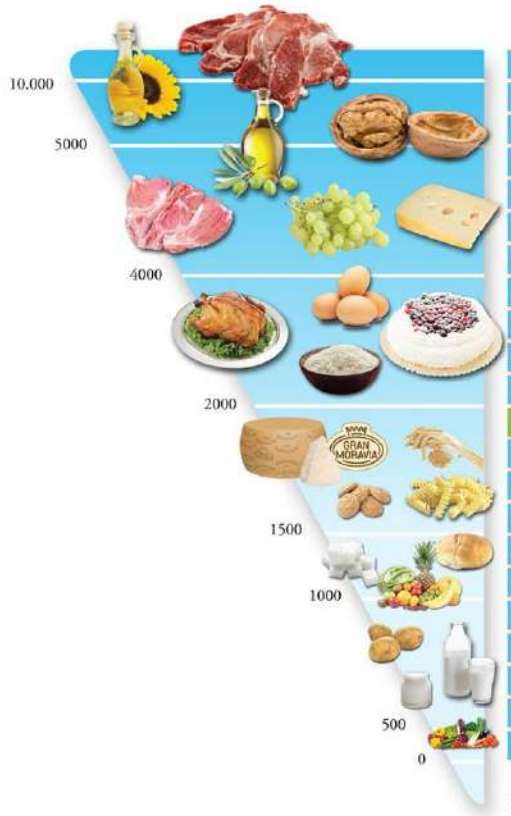
Brazzale dal 1784

Quine EMPOWERING MINDS

The optimal geographic allocation of production processes is the key to quality, efficiency, convenience and environmental sustainability.

GRAN MORAVIA
Water Footprint

LA PIRAMIDE ALIMENTARE SECONDO L'IMPRONTA IDRICA



15.500 CARNE BOVINA
9065 NOCI E NOCCIOLE
6795 OLIO DI GIRASOLE
5000 FORMAGGIO
4900 OLIO D'OLIVA
4800 CARNE SUINA
4055 LEGUMI
3900 CARNE AVICOLA
3400 RISO
3300 UOVA
3140 DOLCI
2094 GRAN MORAVIA
1800 BISCOTTI
1693 PASTA
1645 CEREALI
1500 ZUCCHERO
1300 PANE
1000 LATTE
1000 YOGURT
970 FRUTTA
900 PATATE
325 VERDURA

I valori indicati sono da considerarsi in litri d'acqua per kg di prodotto

Fonte: Barilla Center for Food and Nutrition, 2011

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Focus on Litovel plant (CZ)

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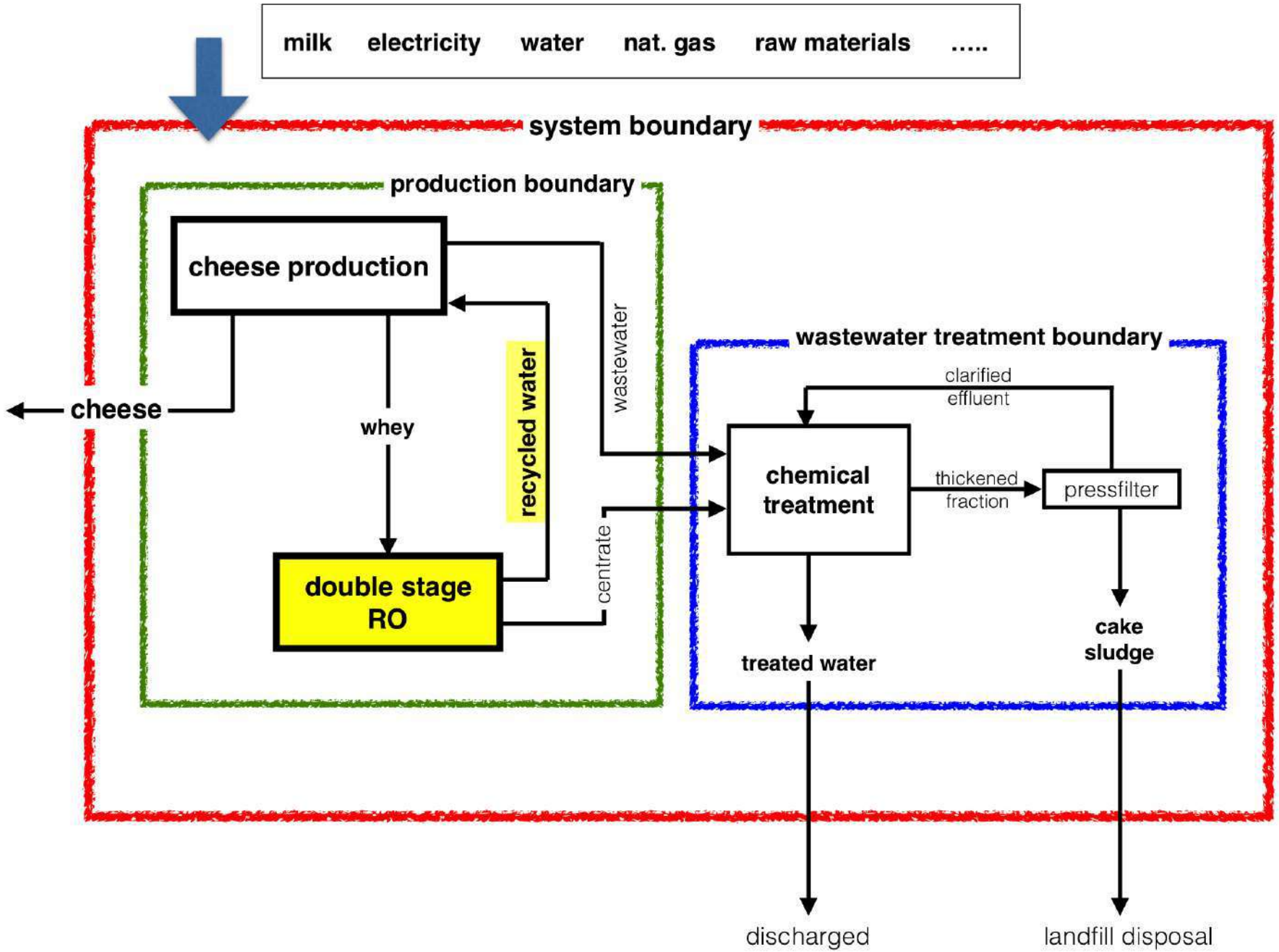
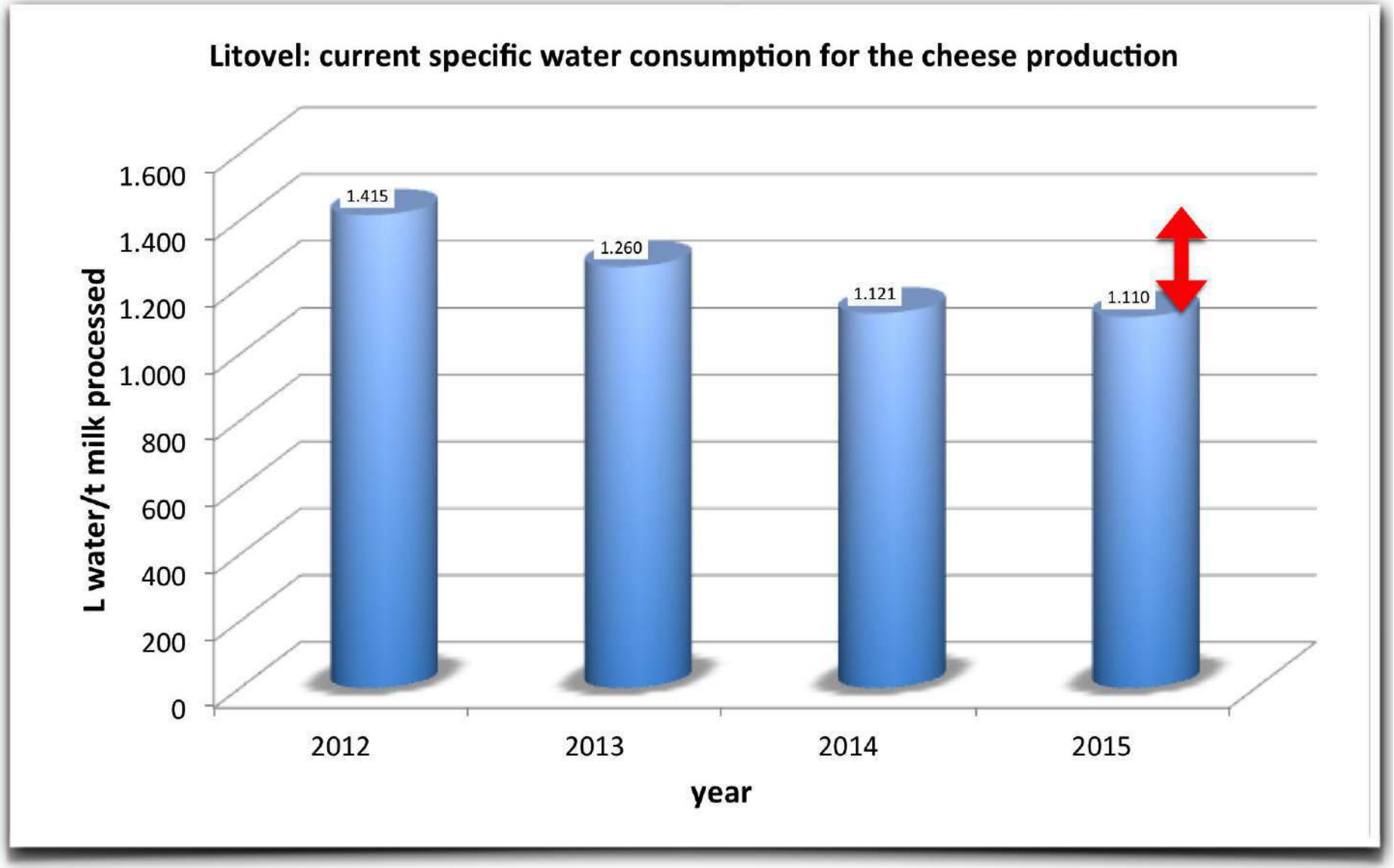

milk
electricity
water
nat. gas
raw materials
.....
system boundary
production boundary
cheese production
cheese
whey
recycled water
wastewater
centrate
double stage RO
wastewater treatment boundary
clarified effluent
chemical treatment
thickened fraction
pressfilter
treated water
cake sludge
discharged
landfill disposal

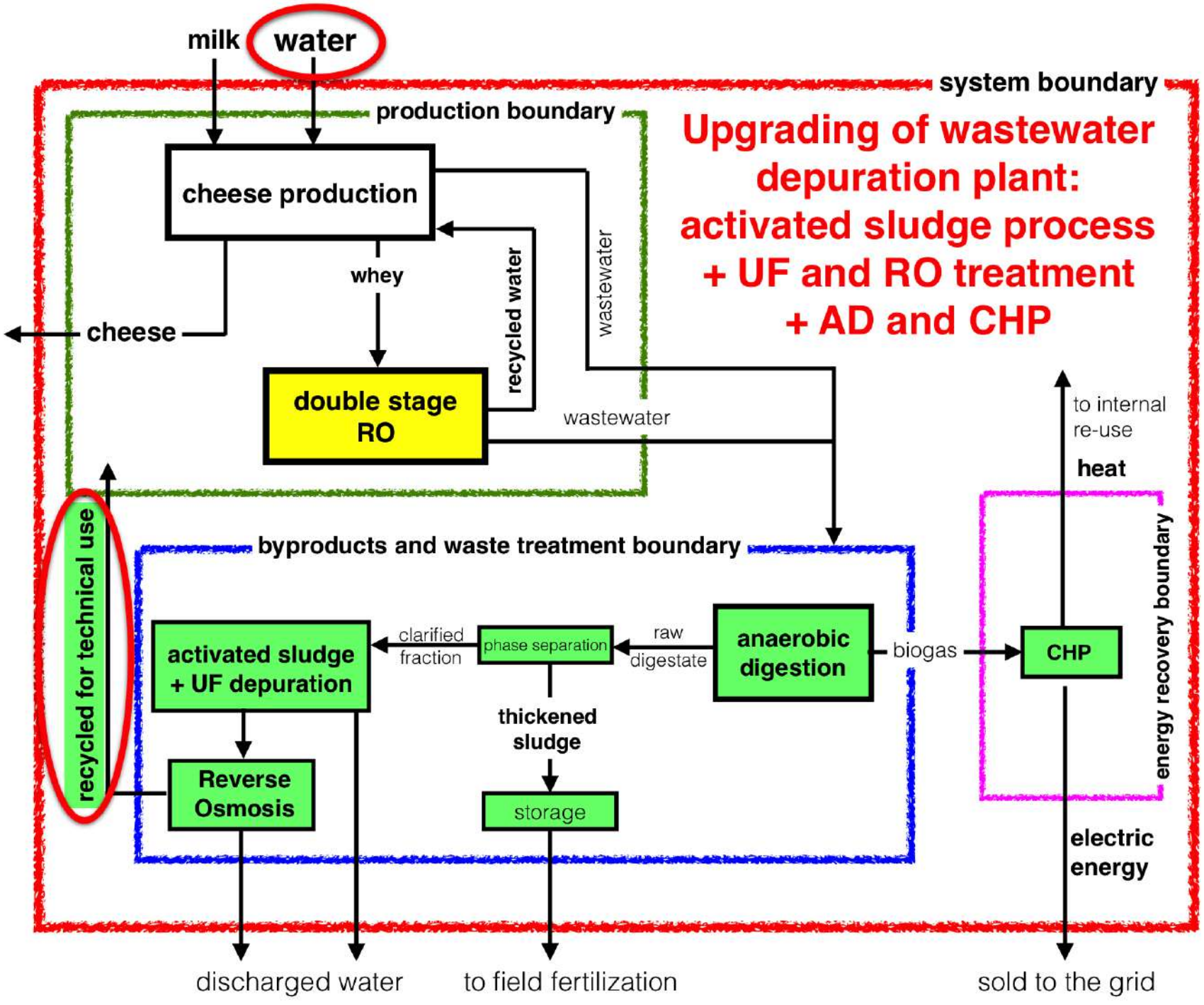
The existing Reverse Osmosis plant for the whey concentration

2nd permeate is demineralized water recycled in cheese production



Reduction compared to the reference year (2012): -20,8%

in 2013 partial use of RO


milk
water
system boundary
production boundary
Upgrading of wastewater depuration plant: activated sludge process + UF and RO treatment + AD and CHP
cheese production
whey
cheese
recycled water
wastewater
double stage RO
wastewater
to internal re-use
heat
recycled for technical use
byproducts and waste treatment boundary
activated sludge + UF depuration
clarified fraction
phase separation
raw digestate
anaerobic digestion
biogas
CHP
energy recovery boundary
thickened sludge
Reverse Osmosis
storage
electric energy
discharged water
to field fertilization
sold to the grid

Elements considered with the upgrading

Litovel: cheese, Anaerobic Digestion		
Electric energy	efficiency	
	cogeneration (from renewable source)	sold in the grid or re-used
Thermal energy		re-used
Water	reduction in quantity and improvment of **quality** of discharged water	
	partial recycling of treated water (up tp 80% saved) (COD 5 mg/L, TKN 0, Cl 13 mg/L)	
WaterFootPrint	Gran Moravia cheese, **upgraded**	
By-products	re-used for energy recovery	

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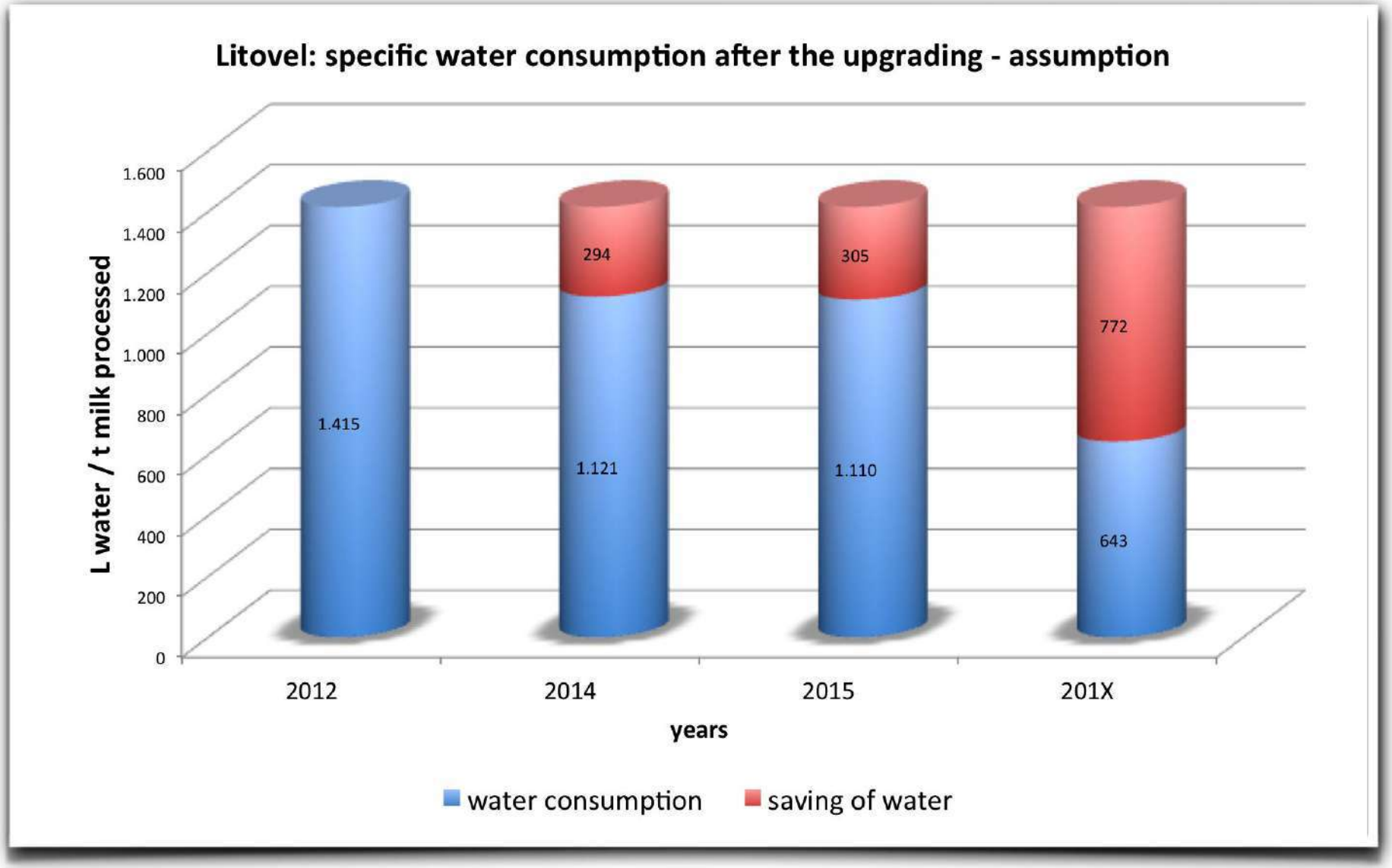
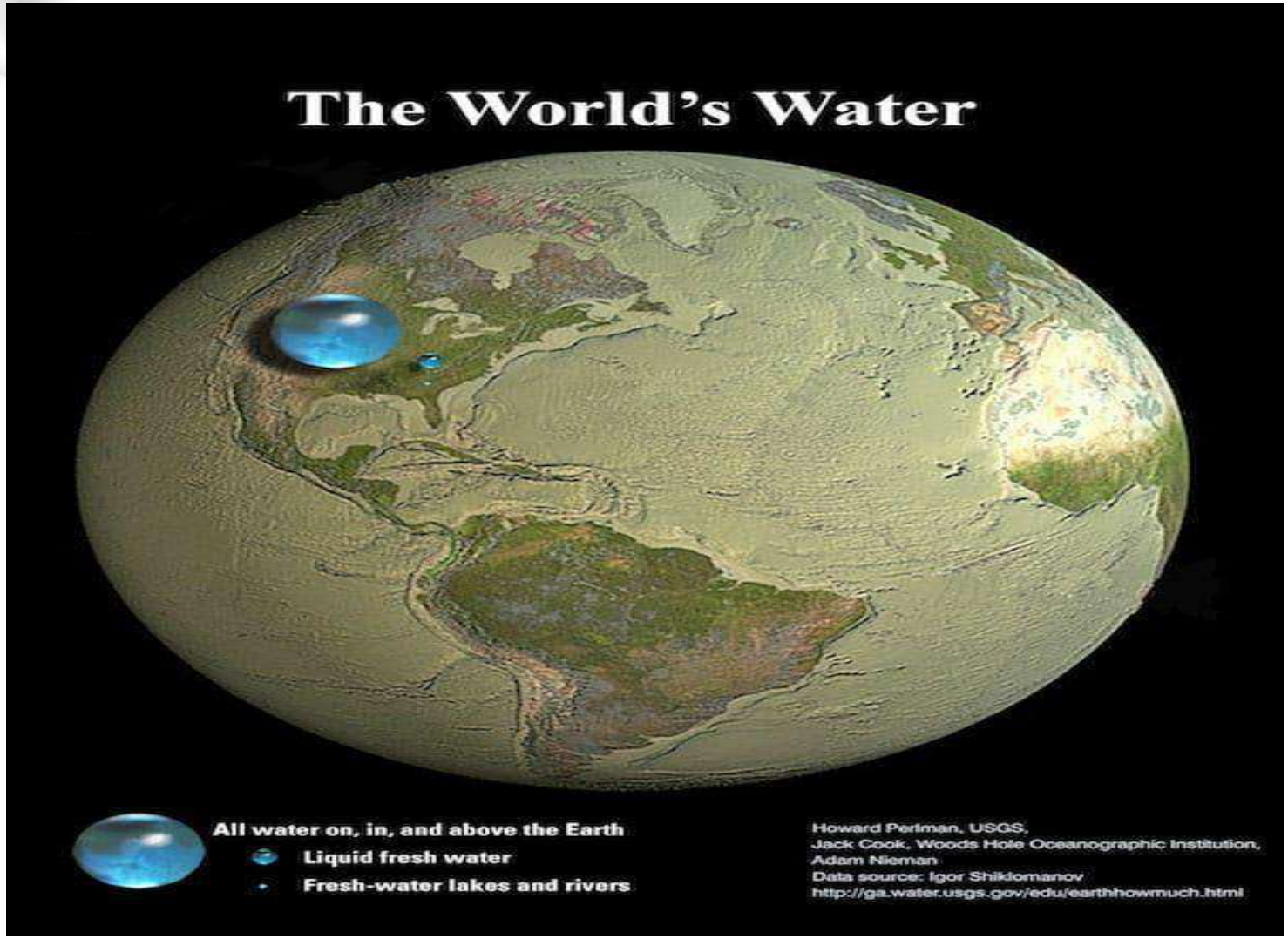


Reduction compared to the 2012 (reference year): -54,6%

GRAZIE PER L'ATTENZIONE

piercristianobrazzale@brazzale.com



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