SWIM and Horizon 2020 Support Mechanism

Working for a Sustainable Mediterranean, Caring for our Future

SWIM-H2020 SM Regional Activities

SMART-Plant Horizon 2020 project: Distinct SMARTechs, stakeholders, communication activities, exploitation of the results

Presented by:

Dr. Stelios Samios

SWIM and Horizon 2020 SM

Study Tour: Visit to State-of-the-Art Sludge Management Systems

25/06/2018, Athens, Greece

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Horizon 2020 research and innovation programme

Project: No 690323 SMART-Plant

Full project title:

Scale-up of low-carbon footprint **ma**terial **r**ecovery **t**echniques in existing wastewater treatment **plant**s (SMART-Plant)

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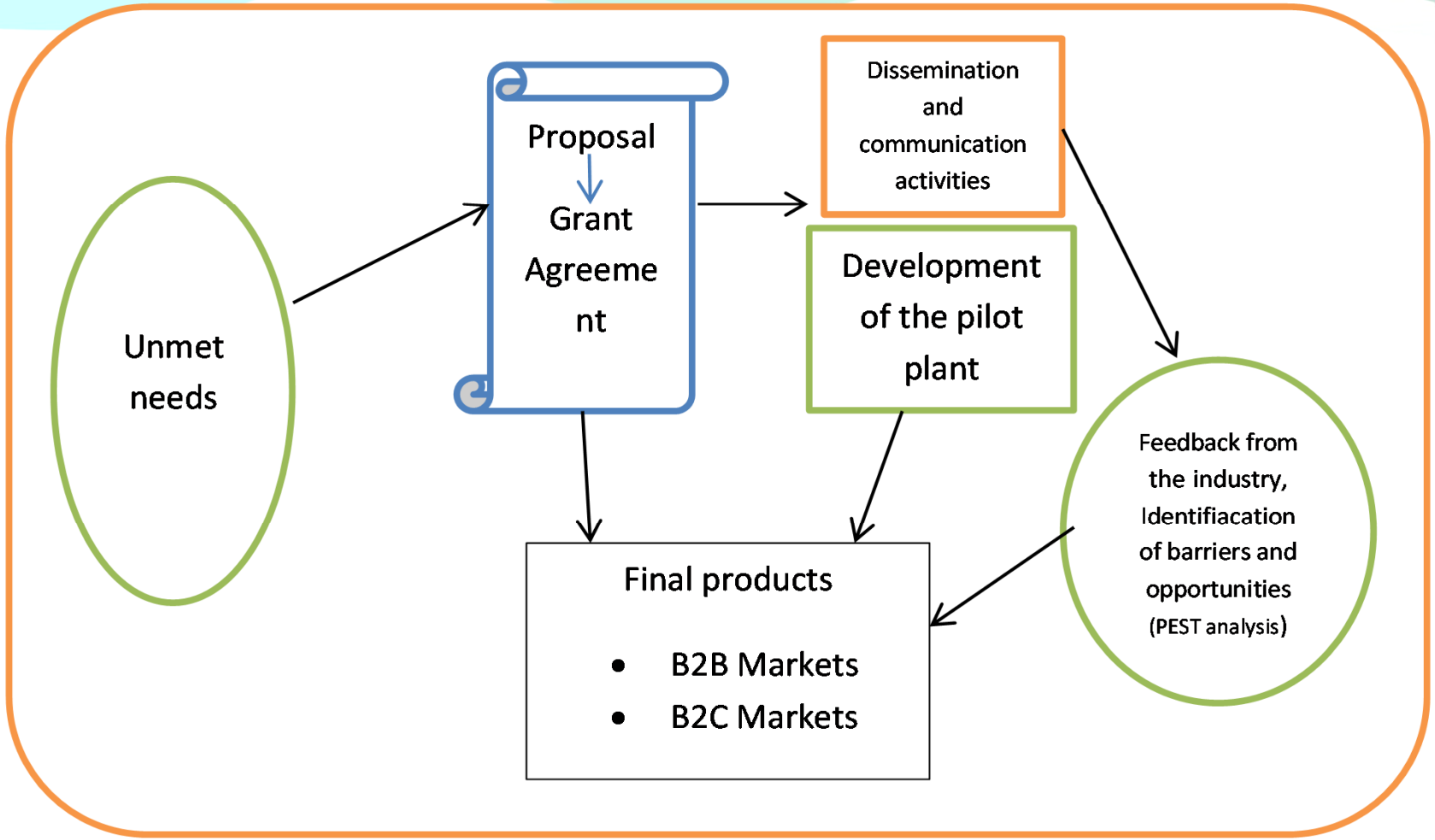

Unmet needs
Proposal
Grant Agreement
Dissemination and communication activities
Development of the pilot plant
Feedback from the industry, Identifiacation of barriers and opportunities (PEST analysis)
Final products
B2B Markets
B2C Markets

ABBREVIATIONS

CAMBI = technology of thermal hydrolysis employed in Psyttalia

N = Nitrogen

P = Phosphorous

PHA = PolyHydroxyAlkanoates

PHB = PolyHydroxybutyrate

SBR = Sequencing Batch Reactor

SPC = Sludge Plastic Composite

SCENA = Short-Cut Enhanced Nutrients

SCEPPHAR = Short-Cut Enhanced PolyHydroxyAlkanoates Recovery

SMARTechs = SMART-Plant Technologies

USP = Unique Selling Point

VFA = Volatile Fatty Acids

WPC = Wood Plastic Composite

WWTP = Waste Water Treatment Plant

TERMINOLOGY

Downstream operations = further processing of the recovered products eg PHA, cellulose, P-rich composting etc.

Mainstream= the main wastewater flow

Sidestream= a portion of the wastewater flow that has been diverted from the main treatment process flow for specialized treatment

Struvite= a precipitated compound form of magnesium ammonium phosphate hexahydrate $MgNH_4PO_4 . 6H_2O$

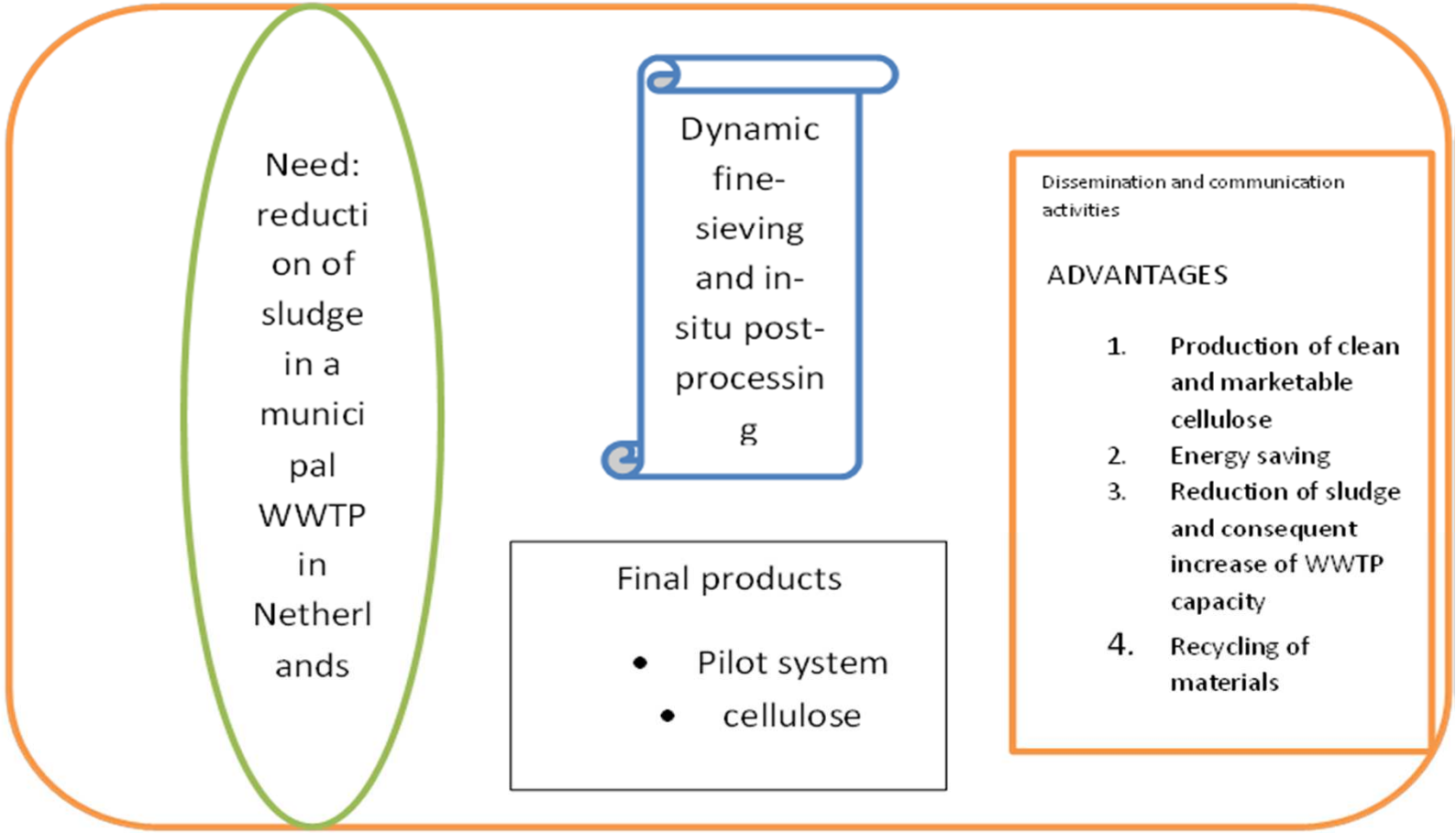
PARTNERS

- Water and wastewater services
- Universities
- SMEs

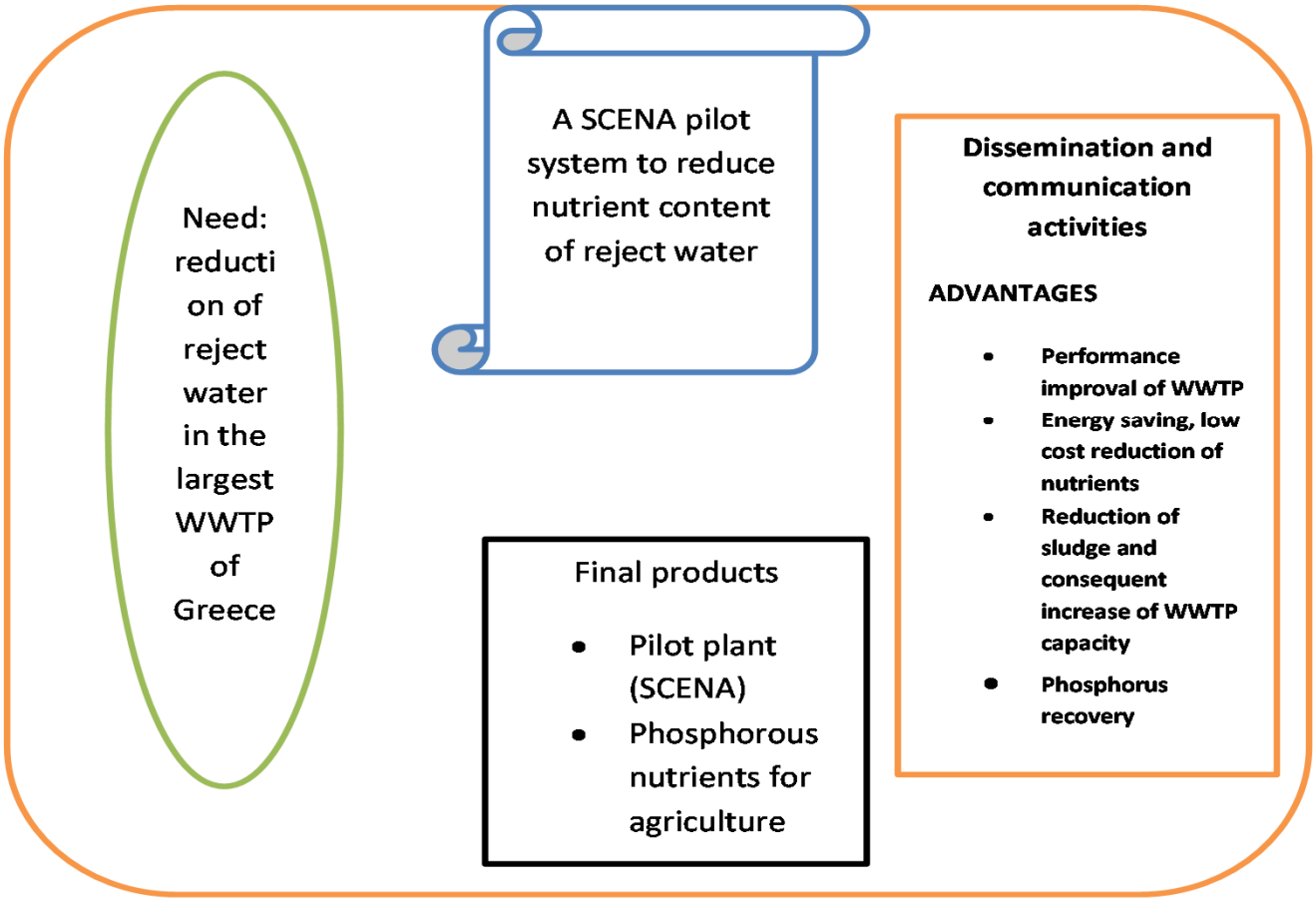
Overview of SMARTechs

SMARTech#	Scope	Target Recovery:	Lead of Technology / Other Partner involved
SMARTech1	Primary (upstream) dynamic sieving and clean cellulose recovery	Cellulosic sludge, Cellulose	CIRTEC (former BWA) / SALSNES
SMARTech2a	Secondary mainstream biogas recovery by polyfoam biofilter	Biogas	AGRB /MEKOROT
SMARTech2b	Secondary mainstream SCEPPHAR	PHA rich biomass, Struvite	UAB/AdM
SMARTech3	Tertiary nutrient recovery by mesolite and nano ion exchange	N salts , P salts	CU/ STW/BYK
SMARTech4a	Sidestream S.C.E.N.A.	VFA, P-rich sludge	ATS/UNIVPM/UNIVR
SMARTech4b	Sidestream TH_SCENA	Biogas, VFA, P-rich sludge	NTUA/ EYDAP / AKTOR
SMARTech5	Sidestream SCEPPHAR	PHA rich biomass, VFA	UNIVR/UNIVPM/ATS/SALSNES
Downstream SMARTechA	Post-processing of recovered cellulose and PHA for bio-composites production	Cellulose/PHA biocomposite	UBRUN / SBPL_ECODEK
Downstream SMARTechB	Post-processing of cellulosic and P-rich sludges	P-rich compost Biomass-fuel	UVIC

SMARTech 1


Need: reduction of sludge in a municipal WWTP in Netherlands
Dynamic fine-sieving and in-situ post-processing
Final products
Pilot system
cellulose
Dissemination and communication activities
ADVANTAGES
1. Production of clean and marketable cellulose
2. Energy saving
3. Reduction of sludge and consequent increase of WWTP capacity
4. Recycling of materials

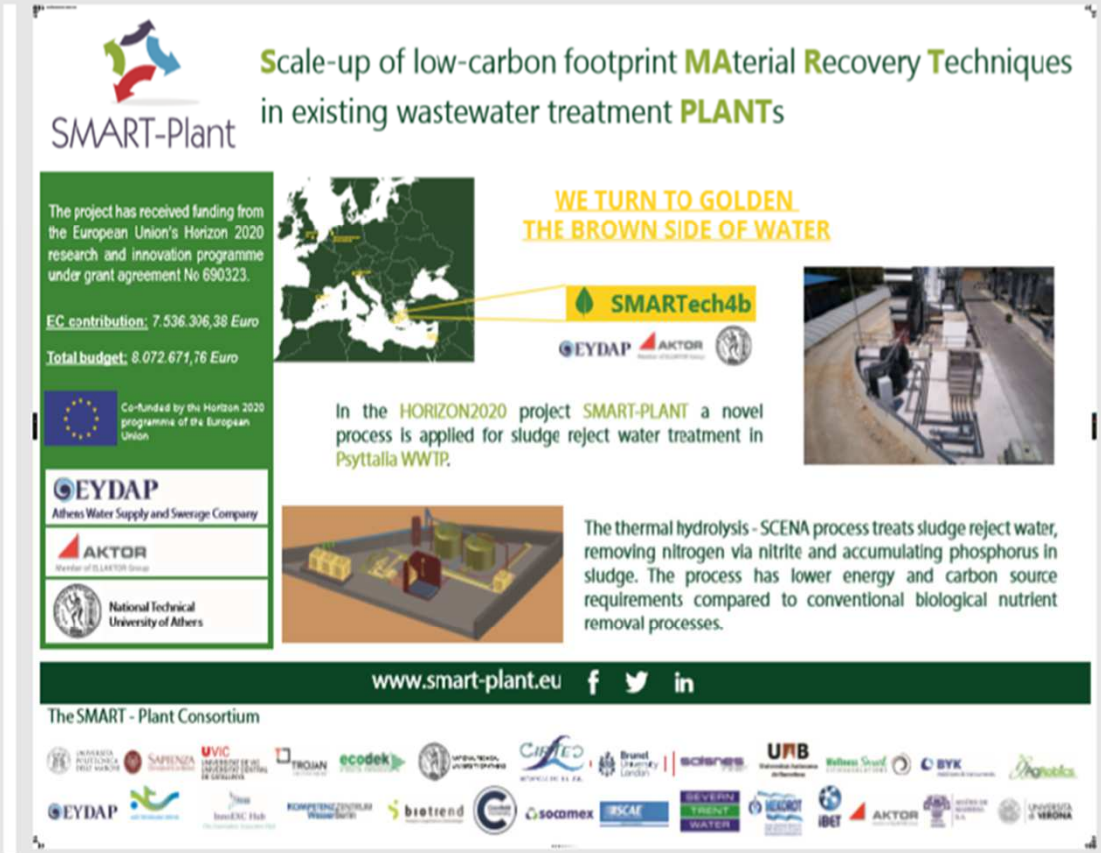
SMARTech 4b


Need: reduction of reject water in the largest WWTP of Greece
A SCENA pilot system to reduce nutrient content of reject water
Final products
Pilot plant (SCENA)
Phosphorous nutrients for agriculture
Dissemination and communication activities
ADVANTAGES
Performance improval of WWTP
Energy saving, low cost reduction of nutrients
Reduction of sludge and consequent increase of WWTP capacity
Phosphorus recovery

Communication tools

Press releases, Articles in magazines, Interviews,
Publications-scientific articles
Conference presentations
Web pages (Project website, social media esp. LinkedIn)
Videos
Exhibitions (eg. IFAT Trade Fair for water, sewage, waste and raw materials management)

Notice board



A catchy slogan

- we turn to golden the brown side of water

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Thank you for your attention.

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