

IWA International SAM Forum 2021

18 Nov 2021 / BELGRADE / SERBIA



WATER FORUM 2021

Conference and Exhibition

Using AM Tool / Principles for long-term planning – SEEAM experience

Georgi Hristov / Oliver Nachevski, GIZ



Integrated Asset Management for Water Utilities in SEE



Project partners: **GIZ (Germany) & Hydro-Comp (Cyprus)**

Duration: **2017 – 2022**

Region: **6 Western Balkan Countries (Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia and Serbia)**

Objective: **Enable Asset Management Centers to provide capacity building to the participating water utilities to carry out *Integrated Asset Management* activities through *training, support* and the provision *appropriate software* and *best-practice methodologies*.**

Budget: **4.8 Mil. EUR (50% each project partner)**

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SEEAM Program Partnership & Structure



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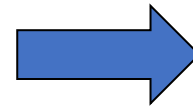
Federal Ministry
for Economic Cooperation
and Development



HYDRO-COMP

Public partner

Private partner



HYDRO-COMP



IAWD



UTVSI



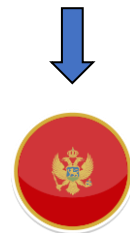
ASSOCIATION
„AQUASAN
Network in B&H“



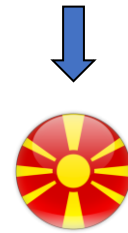
SHUKALB
WATER SUPPLY AND SEWERAGE ASSOCIATION OF ALBANIA



SHUKOS
SHKODRA MUNICIPALITY WATER AND SEWERAGE ASSOCIATION OF KOSOVO



Montenegro



North
Macedonia



Serbia



Bosnia and
Herzegovina



Albania



Kosovo

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2017 – 2022

2019 – 2022

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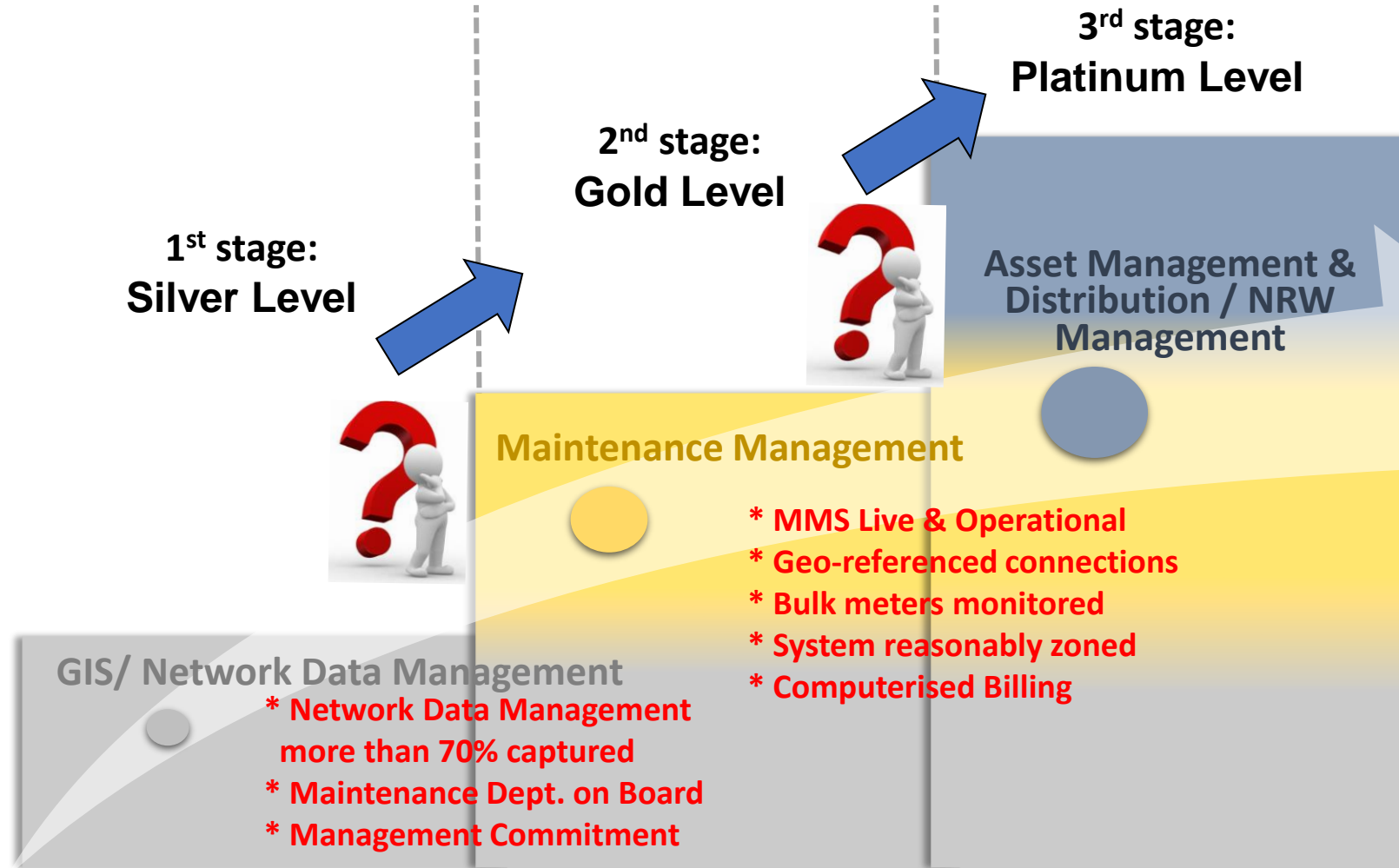
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3-year IAM programme



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SEEAM Provided Services to Water Utilities

Participation: Participation costs are heavily subsidized. Training for Water Utilities are undertaken by the AM hubs as well as Hydro-Comp.

Data Conversion & IAM Systems Implementation: The [EDAMS IAM software](#) provided to each Water Utility and is hosted and operated through the Cloud.

Classroom Trainings: Training courses are held on a regular basis addressing all aspects of IAM with different courses applying for different stages of the program.

Support and on-site Visits: Daily remote support to Water Utilities in the use of the software and procedures adopted and regular on-site visits by the AM hubs.

Workshops/ Conferences: Held on a regular basis presenting various aspects of the services and IAM and results of the achievements.

Access to additional IAM Services: Will be provided if required optional at an extra cost to assist the Utilities with studies, such as the compilation of Commercial Rehabilitation Plan, Investment Plan, Rehabilitation & Maintenance Plan and Infrastructure Plans.



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SEEAM Achieved results

Silver Stage – 2017, 2018, 2019, 2020/21 & 2021/22



Participation and results:

127 water utility companies:
20 from Albania + Tirana as 5 WUCs
19 from B&H
7 RWCs = 35 WUCs from Kosovo
11 from Montenegro
14 from North Macedonia
23 from Serbia.

127 PUCs Silver Level improved their performance level related to data management by on average 77%.

77 PUCs Gold Level improved their performance level related to operations and maintenance by on average 57%.

52 PUCs Platinum Level A, B and C improved their performance level related to planning by on average 50%.

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SEEAM Achieved results

Silver Stage – 2017, 2018, 2019, 2020/21 & 2021/22



Gold Stage – 2018, 2019, 2020/21 & 2021/22



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Platinum Stage A – 2019, 2020/21 & 2021/22



Platinum Stage B – 2020/21 & 2021/22



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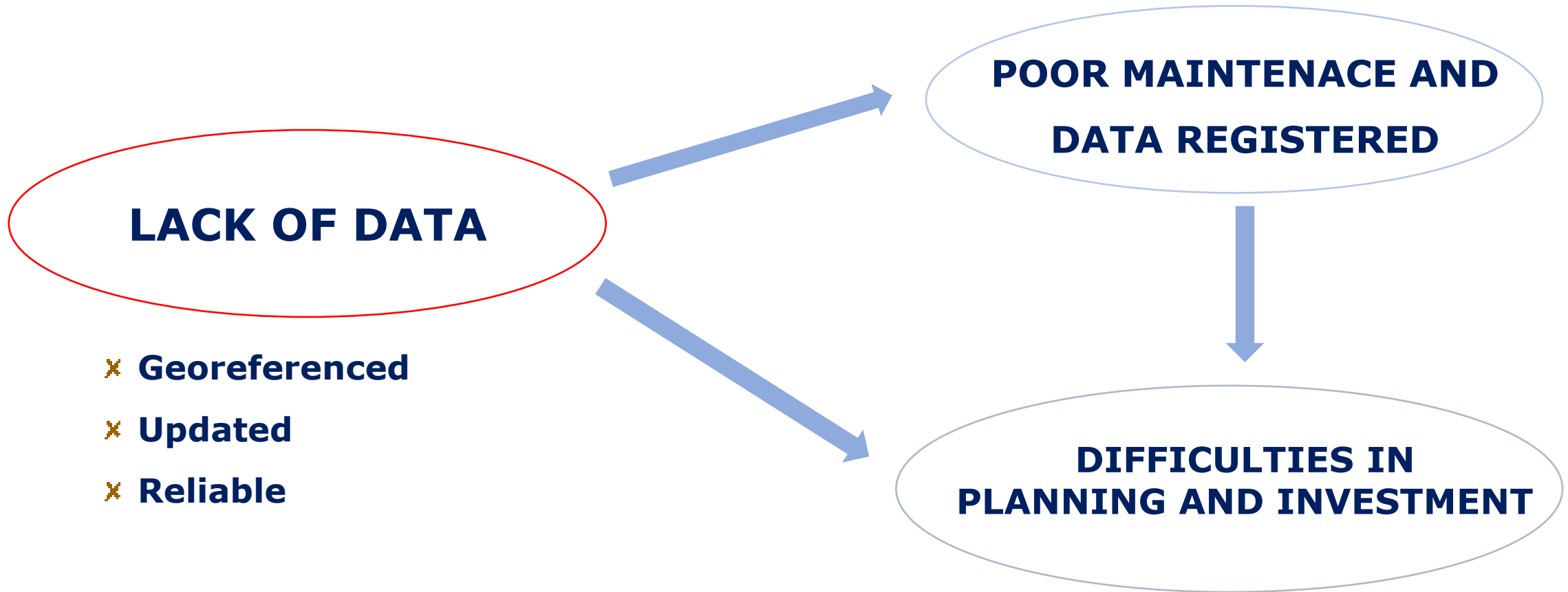
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Challenges Faced



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Asset Management Planning



-  MMS Live & Operational
-  Most of the network captured and validated
-  Above ground assets have condition assessment

Rehabilitation Assessment Output - Risk Level Matrix

Element Type:

Operational Condition (Likelihood of failure)	Importance Categories (Consequence of failure)				
	Highest	Important	Average	Low	Very low
Excellent	Elements: 71 Cost: 323825353.68(R) Length: 149100.567	Elements: 77 Cost: 175649256.47(R) Length: 130967.365	Elements: 166 Cost: 77775627.29(R) Length: 71194.749	Elements: 509 Cost: 76721706.00(R) Length: 119830.549	Elements: 4830 Cost: 329141068.91(R) Length: 727428.003
Good	Elements: 3 Cost: 14030139.12(R) Length: 2623.746	Elements: 15 Cost: 19861926.61(R) Length: 9482.596	Elements: 67 Cost: 18535424.39(R) Length: 22340.346	Elements: 366 Cost: 28138737.10(R) Length: 48339.613	Elements: 3196 Cost: 108773918.81(R) Length: 388978.644
Average	Elements: 0 Cost: 0.00(R) Length: 0.000	Elements: 0 Cost: 0.00(R) Length: 0.000	Elements: 0 Cost: 0.00(R) Length: 0.000	Elements: 0 Cost: 0.00(R) Length: 0.000	Elements: 0 Cost: 0.00(R) Length: 0.000
Fair	Elements: 19 Cost: 49585587.14(R) Length: 8665.577	Elements: 39 Cost: 40825110.55(R) Length: 21557.193	Elements: 271 Cost: 56836759.00(R) Length: 68090.534	Elements: 993 Cost: 62164803.70(R) Length: 143811.544	Elements: 3559 Cost: 134000484.76(R) Length: 459688.313
Poor	Elements: 40 Cost: 142710253.39(R) Length: 25235.395	Elements: 27 Cost: 31828033.00(R) Length: 16609.291	Elements: 156 Cost: 38779428.83(R) Length: 43129.937	Elements: 805 Cost: 56057330.79(R) Length: 127915.830	Elements: 1661 Cost: 72381680.01(R) Length: 252770.076
Unservicable	Elements: 105 Cost: 197629760.87(R) Length: 215968.702	Elements: 148 Cost: 93332975.54(R) Length: 53274.450	Elements: 479 Cost: 90827280.80(R) Length: 104991.702	Elements: 2650 Cost: 164502796.80(R) Length: 374824.223	Elements: 4684 Cost: 264075971.45(R) Length: 801858.959

Close

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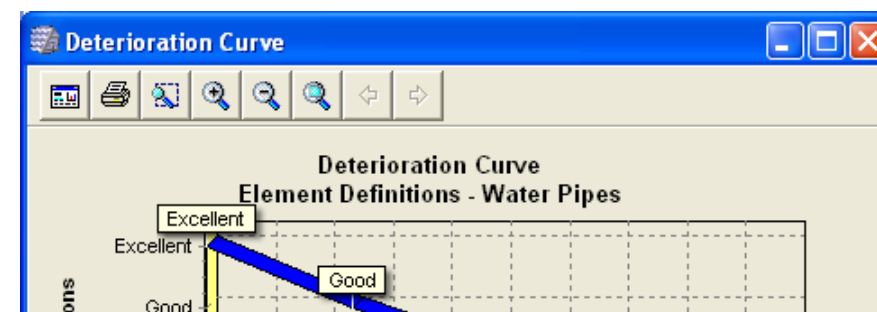


Rehabilitation Planning

Decision support methodology for assisting Utilities in establishing infrastructure investment plans.

-  Assessment of Useful Lives
-  Risk Assessment
-  Asset Categorisation
-  Rating & Ranking Assets
-  Budgeting

		Dams	Water Treatment Works	Water Pump Stations (Bulk Supply)
Useful Life	Useful Life	169	60	53
	Life to date	92	40	36
	Remaining Life	78	20	17
Original Cost	at date	01/01/2005	17/05/2005	13/11/2005
	Civil Cost	R 408,265,000	R 345,849,665	R 6,590,000
	Mechanical Cost	R 18,995,000	R 33,477,678	R 51,460,000
	Electrical Cost	R 1,740,000	R 13,123,850	R 21,830,000
	Total Cost	R 429,000,000	R 392,451,193	R 79,880,000
Valuation	Replacement Cost	R 640,423,878	R 585,138,209	R 112,779,520
	Straight Line Depreciation (Historical)	R 397,343,464	R 260,887,611	R 59,860,845
	Current Cost	R 566,240,420	R 463,869,096	R 84,556,393
	Depreciation			



Level of Risk	No of months for inspection	No of years for replacement	OPEX Action (Maintenance)	CAPEX Action (Rehabilitation)	Description
Negligible	1000	100	Do nothing	Do nothing	Very low likelihood & consequence of failure
Low	60	20	Inspect every 5 years to assess Useful Life	Renew or replace within 20 years of evaluation	Low likelihood & consequence of failure
Medium	24	10	Inspect every 2 years to assess Useful Life	Renew or replace within 10 years of evaluation	Medium likelihood & consequence of failure
High	12	5	Inspect annually or repair within 12 months	Renew or replace within 5 years of evaluation	High likelihood & consequence of failure
Extreme	0	1	Inspect immediately and determine if repairs are needed	Renew or replace within 12 months of evaluation	Imminent likelihood of failure & critical consequence of failure

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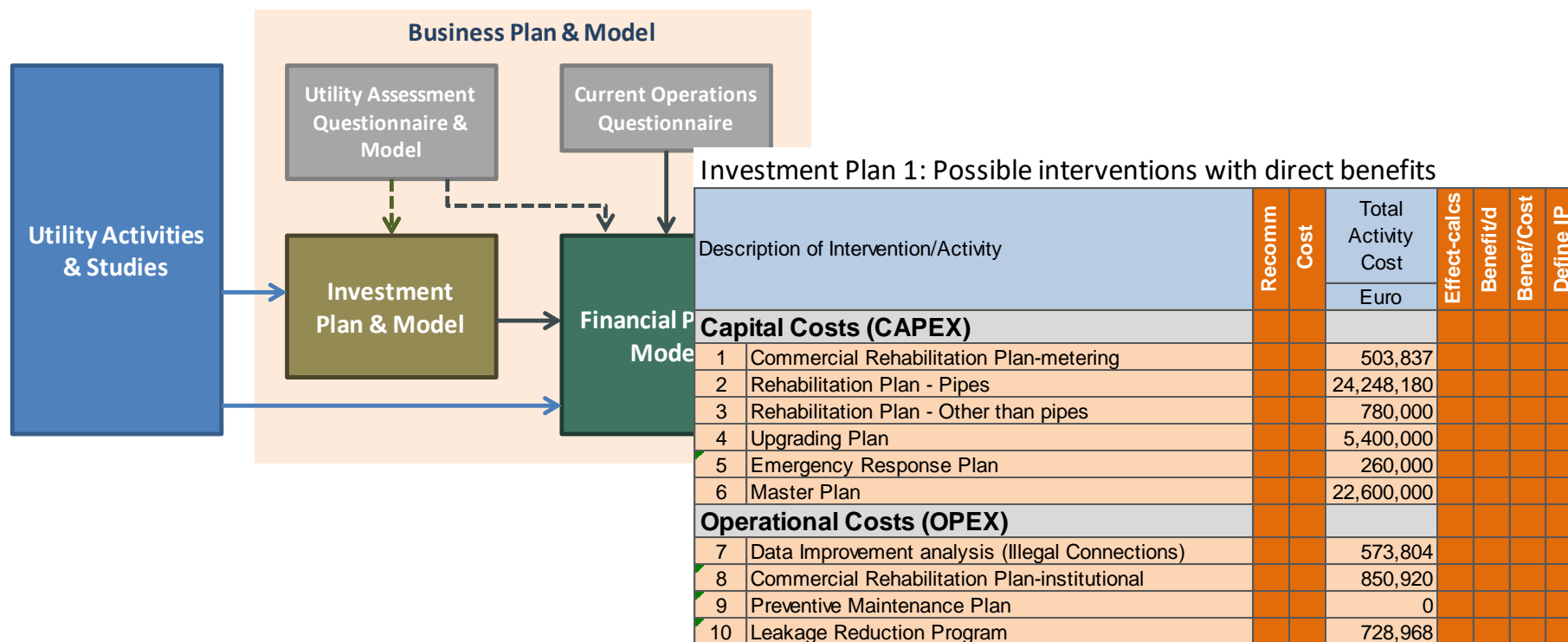




Business Planning



Business Planning Modelling assess the performance and sustainability of a Water Utility based on its current condition and the effect of various interventions to be carried out through a proposed Investment Plan.



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Program Benefits

- ✓ **Financial benefits** are realised through increased revenues, reduction of operating costs, less annual rehabilitation and maintenance costs and a considerable reduction in future capital costs.
- ✓ **Improved service delivery** will be achieved through better customer services, better water delivery (in terms of both pressures and quality), quicker response to maintenance problems and more effective emergency & crisis management.
- ✓ **Conformity to regulation & transparency** will be achieved through the production of a more accurate balance sheet, water quality reporting, water audit reporting and more accurate budgets on operational costs and capital cost requirements.

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Benefit examples (1)

JP „Vodovod i kanalizacija“ Gračanica, Bosnia and Herzegovina

Expansion of water supply area Bijela Polja – Gornji Drafnici – Gornja Lohinja, 360.000 EUR, different donors

- ✓ Use of GIS referenced Asset Registry and MMS modules of EDAMS

Procurement of cadastral and leak detection equipment, 78.000 EUR, own funds

- ✓ To obtain accurate system data and get full-scale advantages as offered by EDAMS

JKP „Vilin Lug“, Crna Trava, Serbia

Improvement of the technical equipment of the company, 76.300 EUR, Donation from the Government of Japan

- ✓ Use the Asset Registry in EDAMS



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Benefit examples (2)

KP “Vodovod” a.d. Prnjavor, Bosnia and Herzegovina

SCADA system for the water supply system, 153.000 EUR, own funds

- ✓ Monitoring of water inputs and outputs in the water supply system

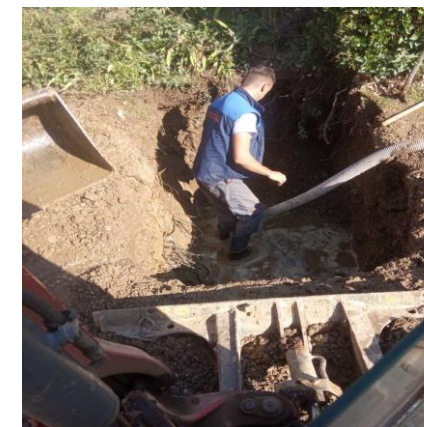
Establishing DMA zones, 77.000 EUR, own funds

- ✓ Formation of a database for all users, analysis of non-revenue water of the entire system

KP “Budućnost” a.d. Laktaši, Bosnia and Herzegovina

Establishment of district measurement areas and supervision of the water supply network, 300.000 EUR, own funds

- ✓ Use the Asset Registry in EDAMS to determine individual areas of district measurement



SEEAM Outreach and presence in social media



[IWA International SAM Forum](#)

Belgrade, Serbia 18th November 2021



[LESAM-PI-2019 book](#) with SEEAM presentation



SEEAM [Brochure](#)



IWA SAM SG [Newsletter August 2019](#)



IWA SAM SG [Newsletter May 2020](#)



IWA SAM SG [Newsletter May 2021](#)



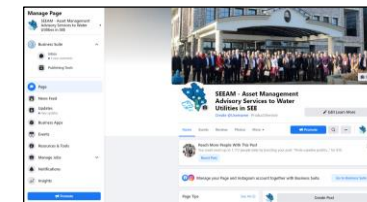
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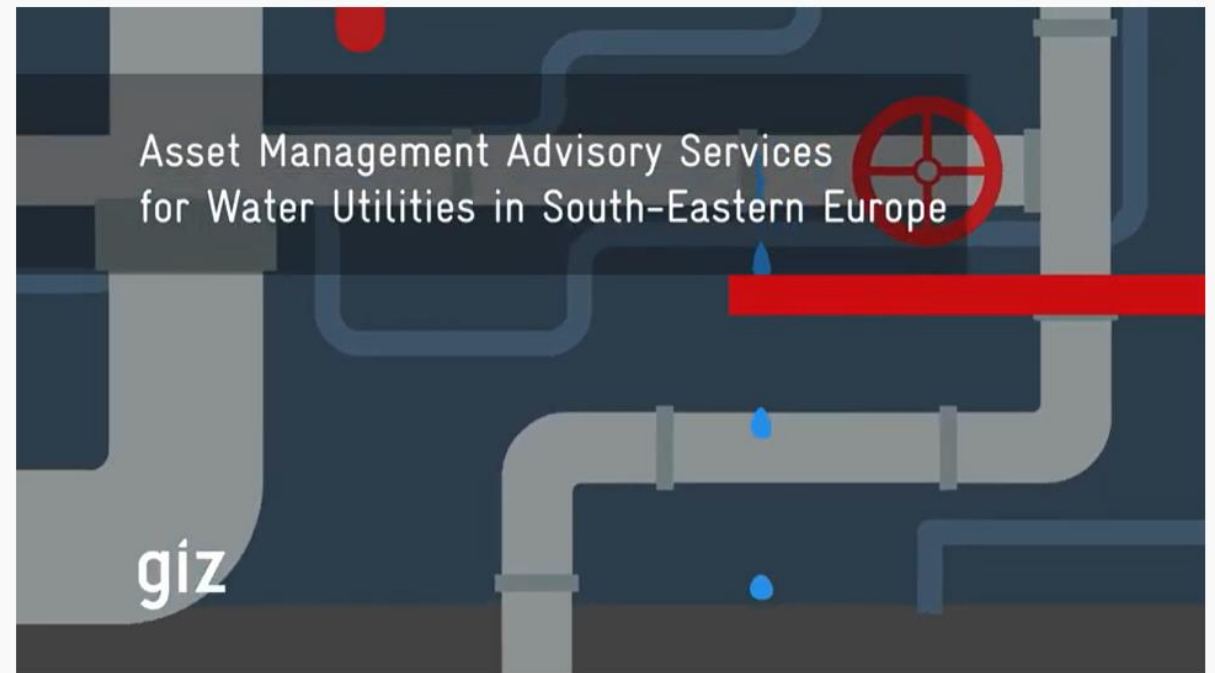
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- [SEEAM video on YouTube](#)



SEEAM Integrated Asset Management Advisory Services for Water Utilities in SEE (English version)

**Хвала
Danke
Thanks
Благодарам
Faleminderit
Σας ευχαριστώ**

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Project Managers, GIZ ORF MMS

