April 2022

DON'T POUR MONEY DOWN THE DRAIN-FIX IT!

A few years later

Besides the detection and effects of vertical land motion on sewage systems, the solution applies to domains of climate adaptation, monitoring above of gas reservoirs, and risk based assessments of critical infrastructure etc. By continuous innovation the solution is "growing into" a very dynamic, accurate and precise, and user-friendly tools set, provided through a non-specialist web-based environment.

Carlo Sørensen, Danish Coastal Authority, Coasts & Climate

	TIER 1: SERVICE PROVIDER	TIER 2 PRIMARY USER	TIER 3 SECONDARY USER	TIER 4 END USER BENEFICIARIES
BENEFICIARIES	Private company and a University	Danish Coastal Authority; Lemvig Municipality	Lemvig Utility Company	Society and Citizens
SERVICES	Sentinel-1	Detailed subsidence maps i.e. maps of differential pattern of vertical land motion	Process innovation: more intelligent and cost-efficient maintenance and new pipeline design; training of local employees on EO data/services usage	Improved overall use of water resource; Improved health, environmental, and economic societal aspects

Value chain definition following SeBS Methodology - https://earsc.org/sebs

The space-based solution

This Copernicus-based solution was produced by a commercial company for other users such as companies, professionals, agencies, associations, single citizens. In the past years there have been significant performance/automation improvements.

The Usage Maturity Level

In the past years, the solution has transitioned to a higher level, achieving UML=5. The reason for such transition has been recognised in new space-funds were allocated to uptake the space-based solutions into territorial practices.

Thematic Area	Region of Application	Sentinel mission used	Copernicus Service used	Usage Maturity Level
CLIMATE, WATER AND ENERGY	MIDTJYLLAND - VESTJYLLAND	S1	–	5

Overall benefits

ECONOMIC

- Capital expenditure has been reduced or avoided
- Cost savings of operating expenditure have been registered
- Increased revenues have been registered
- Efficiency gains have been registered
- Reduction of risk has been registered
- Employment

REGULATORY

- The solution has helped to inform the design/ review of policy parameters
- The solution has facilitated or improved the compilation of institutional reports by the PA
- The solution has improved the PA's capabilities to detect and assess non-compliances
- The solution allowed to improve accountability of duty holders and/or regulators

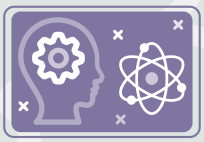
INNOVATION

- The solution has helped to introduce some innovation in the functioning of the public administration
- There were positive market externalities

ENVIRONMENTAL

- Reduced depletion of natural resources

SCIENCE



- The solution has helped to improve understanding about a topic traditionally not related to EO
- The solution has enabled some technological advancement
- There was an increase in technical/scientific expertise related to Copernicus/EO within the PA
- There was an increase in technical/scientific expertise related to Copernicus/EO at the service provider

SOCIETAL

- Improved coordination and governance has been registered
- Sense of trust/community for the involved actors has increased
- Civil security has improved
- Strategic added value was registered for the involved actors
- Strategic added value was registered for society as a whole
- There has been an increased access to public utility
- There have been improvements in public awareness

Benefits classification following SeBS Methodology - https://earsc.org/sebs

Interesting facts...

In terms of technical advancements, the solution has now improved in digitalization, automation, precision and accuracy. Also, areas of use and the number of entities across sectors using the solution have increased significantly over the past few years.

An interesting fact is that Primary User (Tier 2) of this solution recognises that a marked increase in awareness and collaborative with public entities (national agencies, regional and municipal), and across sectors. Such fact is evaluated as ongoing driver for innovation.

Outlook to the future

The solution will continue to be further developed and matured and set in a global, web-based work environment. It now integrates vertical ground motion and geological and geotechnical properties, in a risk based approach to asset management and climate adaptation so as to improve societal resilience.

Acknowledgements

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