

Application of SCIEN drainage technologies – examples from Germany

Report for the conference "A Greener Agriculture for a Bluer Baltic Sea" Helsinki, Finland, August 27th, 2013 Uwe Rammert





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The starting point



 Spring draught

 Water and nutrient loss

Cost

 "Errors of the past"





The challenges



- Secure plant health
- Reduce losses
- Save money and time
- Comply with WFD







One of the test fields



Baltic Sea Region Programme 2007-2013



Data collection

Tabelle 1: Ergebnisse der Wasserpoben und Begleitparameter vom 17.09.2010 der Messpunkte auf dem
Schumacher Gelände (S1-S6) und Bossmann-Gelände (B1-B6):

237		N_{ges}	NO_3-N	NH ₄ -N	P_{ges}	PO ₄ -P	LF	pH-Wert	O₂-gehalt	Temperatur
	*)	[mg/l]	[mg/l]	[mg/l]	[mg/l]	[mg/l]	[µS/cm]	[-]	[mg/I]	[°C]
	S1	12.7	10.3	0.3	0.3	0.2	1034	6.6	4.4	13.7
The second	S 2	4.7	3.5	0.1	0.1	0.1	687	6.8	5.4	14.1
	\$3	8.4	4.3	0.9	0.7	0.2	796	7.0	6.0	13.2
	S 4	20.5	16.4	0.0	0.1	0.1	889	7.1	8.5	13.2
	<mark>S</mark> 5									
	S 6	10.5	8.6	0.1	0.2	0.1	881	6.8	4.4	14.1
	B1	13.6	10.3	0.0	0.0	0.0	1204	7.0	7.1	13.9
	B2	18.8	15.9	0.0	0.0	0.0	812	7.0	5.6	13.7
	B 3	16.9	13.7	0.0	0.0	0.0	837	7.1	7.0	13.8
	B4	13.2	10.8	0.0	0.0	0.0	851	6.9	6.1	13.3
	B5	14.6	11.7	0.0	0.0	0.0	876	6.9	4.8	13.1
and the second	B6	16.3	14.3	0.0	0.0	0.0	848	6.7	6.7	13.4
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	Gütekla 1998)	sse (L	AWA 1	1-2	2 2-3	3	3-4 4		re	port



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Discussions







Indicator based analysis

- CSSA Indicator Skonomie
- Uses standard reporting data
- Overview over farm status
- Management information for farmers







Solutions



Controlled drainage Collecting ponds Harvesters **Reuse nutrients** Create better





Controlled drainage



GUIDELINES

for the reduction of nutrient discharges from drained agricultural land



Initial idea: valve gate to be installed in the drainage inspection shaft

Improved idea: Semi automatic valve system

Developed for Schleswig-Holstein and transferred to the Baltic Sea region

Bettina Holsten, Sabine Ochsner, Achim Schäfer, Michael Trepel







Collecting ponds







Growing and harvesting algae

- Ponds used for growing
- Microalgae as nutrient collectors → fertilisers
- Origin of new products
- Create additional income



- Harvesting technology as main challenge
- See poster of Mrs. Annika Gröning!







Summary

- Problem centred approach, not legal obligations
- Ideas from the farmers
- "Translation" by agency
- Solutions fit into the SCIEN concept
- How can the results be used for future projects?







Thank you



