Interreg
Baltic Sea Region
Baltic Slurry Acidification

EUROPEAN UNION
EUROPEAN REGIONAL DEVELOPMENT FUND

EU STRATEGY FOR THE BALTIC SEA REGION
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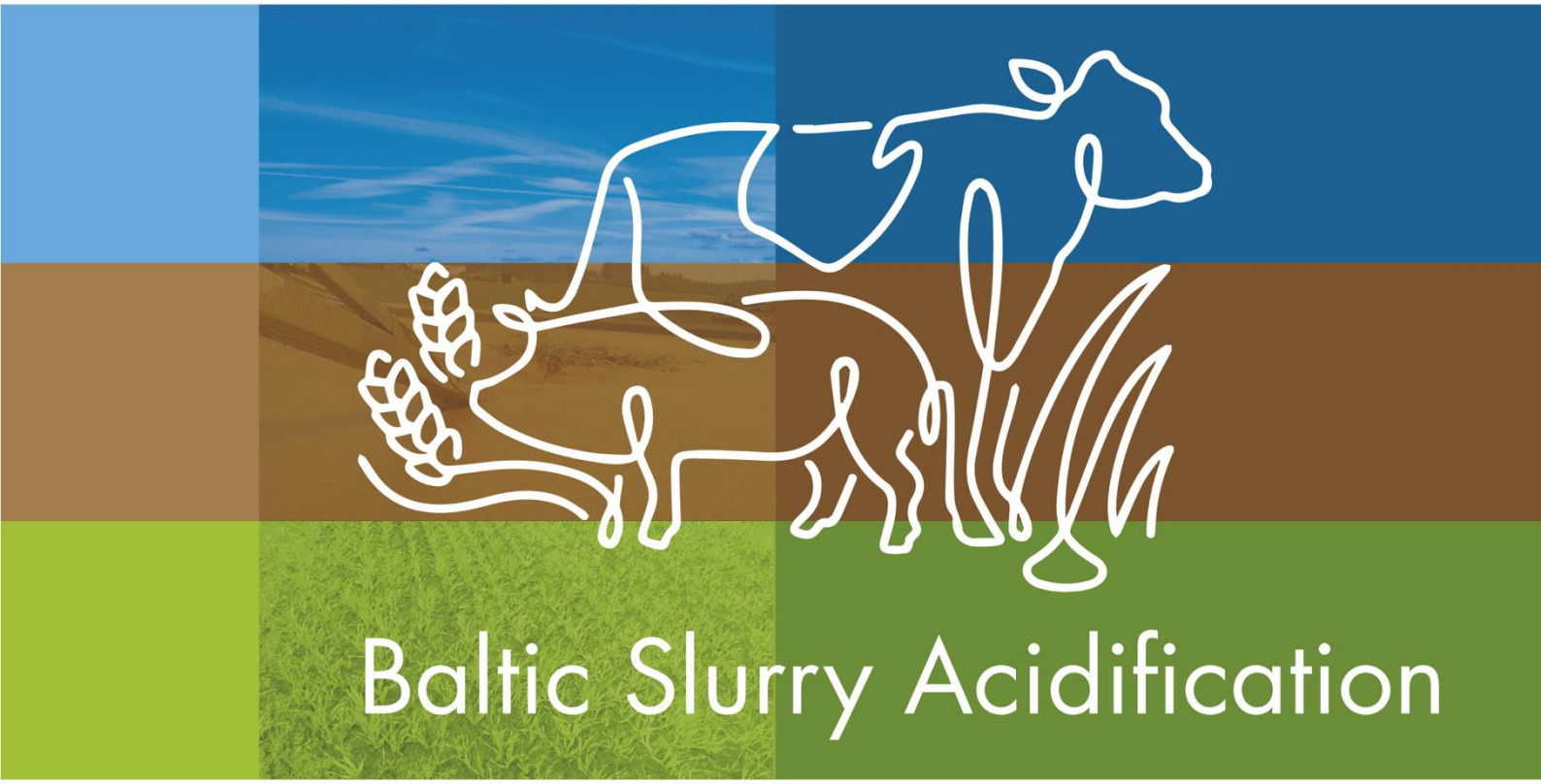

Procurement process of pilot installations

Edited by Jānis Kažotnieks, Latvian Rural Advisory and Training Centre

August 2018

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August 2018

Preface

This report is prepared in the frames of the Baltic Slurry Acidification project, co-financed by Interreg Baltic and implemented by 16 partners from Baltic Sea Region (BSR) countries in the period from March 2016 to February 2019.

The report is a deliverable of work package 3 (WP3) concerning Procurement process of pilot installations.

The report contains descriptions of whole procurement process in each particular project partner countries – Germany, Latvia, Lithuania, Poland and Sweden. Descriptions include types of slurry acification technology (SAT) chosen, some technical information about particular SAT's, procurement sums, offering companies, procurement time schedules, some specific details of contract as well as general explanation of whole procurement processes.

The procurement of the specific SAT was made in accordance with local legislation of each particular country, the feasibility considerations and within the available budget limitations of project.

The report is compiled by the WP3 leader on basis of information and data provided by the 6 pilot installation hosts. The framework of the report has been made by assisting leader of WP3 Henning Lyngsø FOGED from Organe Institute Aps, he has also carried out review of this particular report.

Ozolnieki, Latvia

August 2018

Jānis KAŽOTNIEKS

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Summary

Procurement process began with tendering, that included elaboration of technical specifications too. General specifications for slurry tankers, spreading and acidification equipment were designed by WP3 leader Janis Kazotnieks and it was freely available for all the investment partners online in projects BaseCamp site. Some of the investing partners found it a challenge and reason for major delay to organise needed documentation to comply with.

Procurement process was carried out on basis of national and EU tender regulations in combination with the strict procurement requirements of Interreg Baltic. It was also based on facts obtained during feasibility studies and study trip to Denmark earlier in the project. There were totally 9 separate procurements done in six investment projects in six countries: Estonia - Estonian Crop Research Institute (ECRI); Germany - Blunk GmbH; Latvia – Lauku Agro SIA; Lithuania - Lithuanian University of Health Sciences (LUHS); Poland - Institute of Technology and Life Sciences (ITP) and Sweden - Br. Göransson AB. All the procurements were finalised as planned by the end of the project period No.5.

There were two types of acidification equipment procured during the process: five in-field – ECRI (small scale), Blunk GmbH, Lauku Agro SIA (used), LUHS and Br. Göransson AB; one in-storage - ITP.

Based on procurement of six investment projects a total budget of € 1'345'257 (compared with 1'141'333 planned) was used and it is expected to save the environment for 66'980 kg nitrogen via reduced ammonia emissions, and thus reduced use of nitrogen mineral fertiliser. The use of sulphuric acid will also reduce the costs for purchase of sulphuric mineral fertiliser.

Investments were made on a pure commercial basis in three cases: Blunk GmbH in Germany and Br. Göransson AB in Sweden, which both are contractors, and by Lauku Agro in Latvia which is pig and arable farm businesses. Two investors, Institute of Technology and Life Sciences (ITP) in Poland, and Animal Science Institute of Lithuanian University of Health Sciences (LUHS) in Lithuania have scientific aims for the investments, but at the same time will use the equipment for their own livestock farms. Estonian Crop Research Institute (ECRI) will use their slurry acidification equipment exclusively for scientific purposes.

1. Background

For the planning purposes there were feasibility studies done in each of the investment case. Each of six individual investment partners made an indicative decision about the preferred SAT, and included indicative budgets for the needed investments in the entire project budget. There were also some meetings and workshops as well as study trip to Denmark to encourage the development of the project's investment side. It was the phase of detailed planning afterwards, including feasibility studies, where each individual investment partner estimated the economic, financial, logistical, environmental and other relevant issues to make their choice as sustainable and reliable as possible. Final decisions about the preferred SAT for the individual investment partner was taken and the feasibility study planning used for preparation of tender material and tenders itselves.

Table 1: Summary of the main SAT feasibility study conclusions.

Country	Organisation	Preferred SAT	Expected investment cost, €	Expected time of procurement	Expected annual reduction of N-loss, kg
EST	ECRI	In-field	192'000	Quarter 4/2017.	Minimal
DEN	Blunk GmbH	In-field	233'333	Summer 2017	25'300
LAT	Lauku Agro SIA	In-field	160'000	Second half of 2017	12'500
LIT	LUHS	In-field	180'000	Summer 2017	10'240
POL	ITP	In-storage	61'000	Second half of 2017	8'740
SWE	Br. Göransson	In-field	315'000	Finalised in February 2017	10'000
TOTAL	**6 pilot installations**		**1'141'333**		**66'980**

2. Procurement

Estonia

Figure: In-field SAT (SyreN mini) investment made by ECRI. The SyreN mini was produced specifically to work with smaller tankers for research purposes.

ECRI has invested in an in-field acidification system for research purposes only. They procured Joskin 8 m^3 slurry tanker from Eesti Agritehnika OU equipped with 3m wide open slot disc injector (EUR 57'480) and Biocover SyreN mini for another EUR 87'480.

According Estonian regulations, national tenders have to be organised for procurements of values above € 40,000, and international tenders for values above € 130,000. All three items to procure have values below the threshold for international tenders, provided they are purchased separately. As a result the first procurement for slurry tanker and spreading device failed, because there was only one valuable offer and the price for tanker and spreader was too high - 165 790 EUR plus VAT, instead of 175 000 EUR for whole system.

The second procurement was made in two parts: one for tanker and injector, another for small scale acidification equipment. The first part was successful with 2 offers: from Eesti Agritehnika OU for EUR 154'800 and from Stokker AS for EUR 57'480, choosing the last. The second got just one offer from Eesti Agritehnika OU for EUR 87'480, which was good enough to choose.

The second procurement at the end was easy and understandable, but there were some minor problems with functionality of equipment. There were also some disagreements between ECRI and supplier, because it seemed the dealer is not familiar with machinery supplied. ECRI recommends to pay more attention to qualify suppliers, but in this case there was the only supplier of acidification equipment which made whole procurement process more complicated.

The investment costs were below the project budget of € 192,000 (144'960). A digital procurement process was undertaken during October/November of 2017. Equipment was delivered in June 2018.

The Estonian legislation about public procurement is available at https://www.riigiteataja.ee/en/eli/501112016003/consolide

Procurement regulations in ECRI instead are available at http://www.etki.ee/images/pdf/Riigihange/Riigihank_eeskiri_2014_06_27.pdf

Estonian dealers for slurry acidification equipment are Eesti Agritehnika OU at www.agritehnika.ee/.

Germany

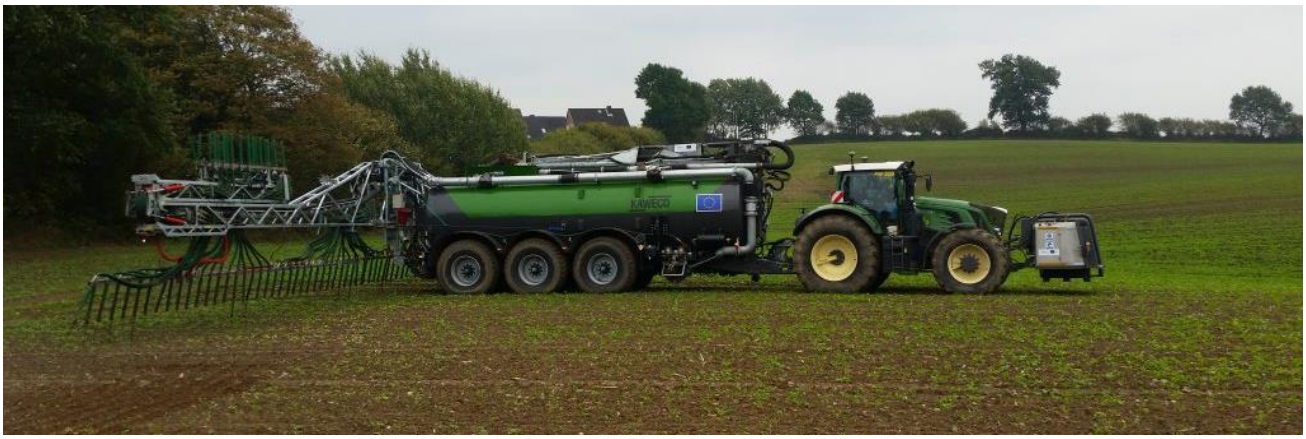

Figure: In-field SAT investment (SyreN) made by Blunk GmbH in Germany spreading acidified slurry during a demonstration outside of Kiel.

Blunk GmbH has invested in an in-field SAT system. As they are farm contractors, their equipment is of larger size containing 30 m^3 Kaweco slurry tanker equipped with 24m wide trailing hose spreading device and SyreN acidification equipment. The total cost of machinery was EUR 366'825.

The original decision was to go for slurry tanker which would be suitable to carry 2,000 litres of sulphuric acid (2 IBC's) on it, and so that the IBC tanks with sulphuric acid would be placed in between the slurry tanker and tractor rather than in front of the tractor. The tender process has begun in January 2017 with half a year delay as planned due to the complicated process of preparing the tender documents. As a result they got an offer for 460'000 which was far above the budget limitations. Partly based on a fact that it was too expensive and by that time legislation had changed there was another decision to change their specifications and return to an ordinary construction of acidification equipment. It was then another procurement process with one good offer from Kaweco (EUR 366'825) which ended up with signed contract in January 2018. Equipment was delivered in July 2018. The investment costs were above the budget of EUR 233,333 as EUR 366'825.

Another procurement was done due to Blunk's plans to use safer containers for an acid – Varioboxes. It was an easy process comparing the purchase of fertilisation hardware and was completed within three months between May and July 2018. Only one valuable offer was received from Promens with the total cost for 20 Varioboxes of EUR 20'080.

The legislation which limits the procurement processes in Germany are as follows: RICHTLINIE 2014/24/EU DES EUROPÄISCHEN PARLAMENTS UND DES RATES vom 26. Februar 2014 über die öffentliche Auftragsvergabe und zur Aufhebung der Richtlinie 2004/18/EG

In English: Directive 2014/24/EU of the European Parliament and of the Council of 26 February 2014 on public procurement and repealing Directive 2004/18/EC.

Link: https://www.bmwi.de/Redaktion/DE/Downloads/P-R/richtlinie-vergabe-oeffentlicher-auftraege.pdf?__blob=publicationFile&v=1

There are no dealers of slurry acidification equipment in Germany at the moment.

Latvia

Figure: In-field SAT investment (SyreN) made by Lauku Agro while on display at the inauguration event.

Lauku Agro has invested in an in-field acidification system from GOMA Viborg ApS consisting of Samson PG25 slurry tanker, 24m wide spreading device with trailing hoses and acidification equipment SureN from BioCover. They use it for spreading acidified separation liquids from pig slurry as well as digestate from biogas production. Equipment was procured as a second hand alternative in very good shape. The total cost of investment was EUR 157'000, which fits into the project budget of EUR 162'000 perfectly.

It was the easiest and quickest procurement in whole project, beginning in July 2017 and ending up with machinery delivered 2,5 months later at the end of September 2017. There were 3 good offers received: AR Agro for EUR 169'500; AGS Maskiner for EUR 162'500 and GOMA Viborg ApS for EUR 157'000 respectively. The main problem for tender providers was to find acidification system that has been reflected in specs because of only one manufacturer - BioCover. All the rest of procurement of bid of three was easy and smooth, finalising in optimal result just close to 3 months after beginning. The result was as good, because the company have excellent and experienced personnel having completed much even more completed procurement before.

The legislation act which limits the procurement process in Latvia is Publisko iepirkumu likums, Public Procurement Law, 15 December 2016, https://likumi.lv/doc.php?id=287760 English version not available.

There are no dealers of slurry acidification equipment in Latvia at the moment.

Lithuania

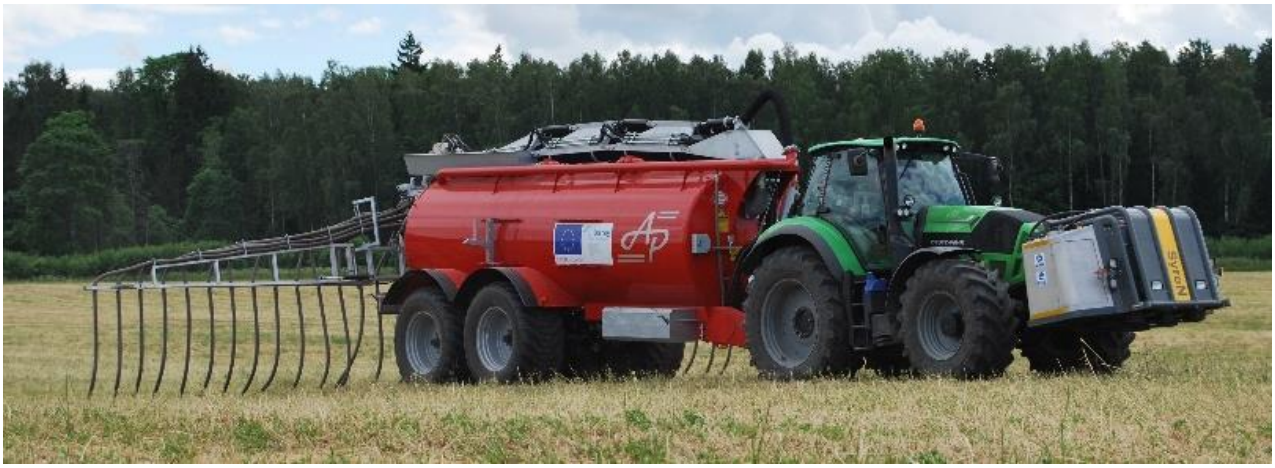

Figure: In-field SAT investment (SyreN) made by LUHS in Lithuania spreading acidified slurry on their experimental farm.

LUHS has invested in an in-field acidification system from UAB Biržu žemtiekimas consisting of AP 20 m^3 slurry tanker, 12 m wide spreading device with trailing hoses and acidification equipment SureN from BioCover. They use it for spreading acidified cattle slurry. The total cost of investment was EUR 223,474, which was still above the project budget of EUR 180'000.

LUHS did use EU-wide-tender method for the equipment and the first procurement was for the tanker of capacity of 24 m^3 and the 12 m wide trailing hose spreading device equipped with acidification device. The only offer of EUR 238'000 was too expensive for their budget and was rejected therefore. The decision about purchase of smaller scale tanker (20 m^3) was taken immediately and the second procurement announced with just some small changes in tendering documentation.

It took three months for the second procurement to be finalised. They again got one valuable offer from UAB Biržu žemtiekimas for EUR 223'474,90. It was finally AP 20 m^3 tanker with 12 m trailing hose spreading device and SureN acidification equipment on it. Purchase was completed by August 2017 and equipment was delivered in November 2017. But it still was not the end of the story because LUHS they did not have the tractor capable enough to carry 1 m^3 of sulphuric acid plus IBC and equipment on it's front linkage. It was time to find the one to rent and they did it. So, it is extremely urgent to understand and take in account that the needed lifting capacity of front linkage should be not less than 4,5 tons in this case.

In Lithuania there are strict procurement requirements and a long document evaluation period. The open tender procedure takes about 4 months.

Lithuanian dealers for slurry acidification equipment are UAB Biržu žemtiekimas at:
Tiekimo 4, LT-41128 Birzai, Lithuania
GSM: + 370 682 18997
E-mail: info@zemtiekamas.lt
www.zemtiekimas.lt

Poland

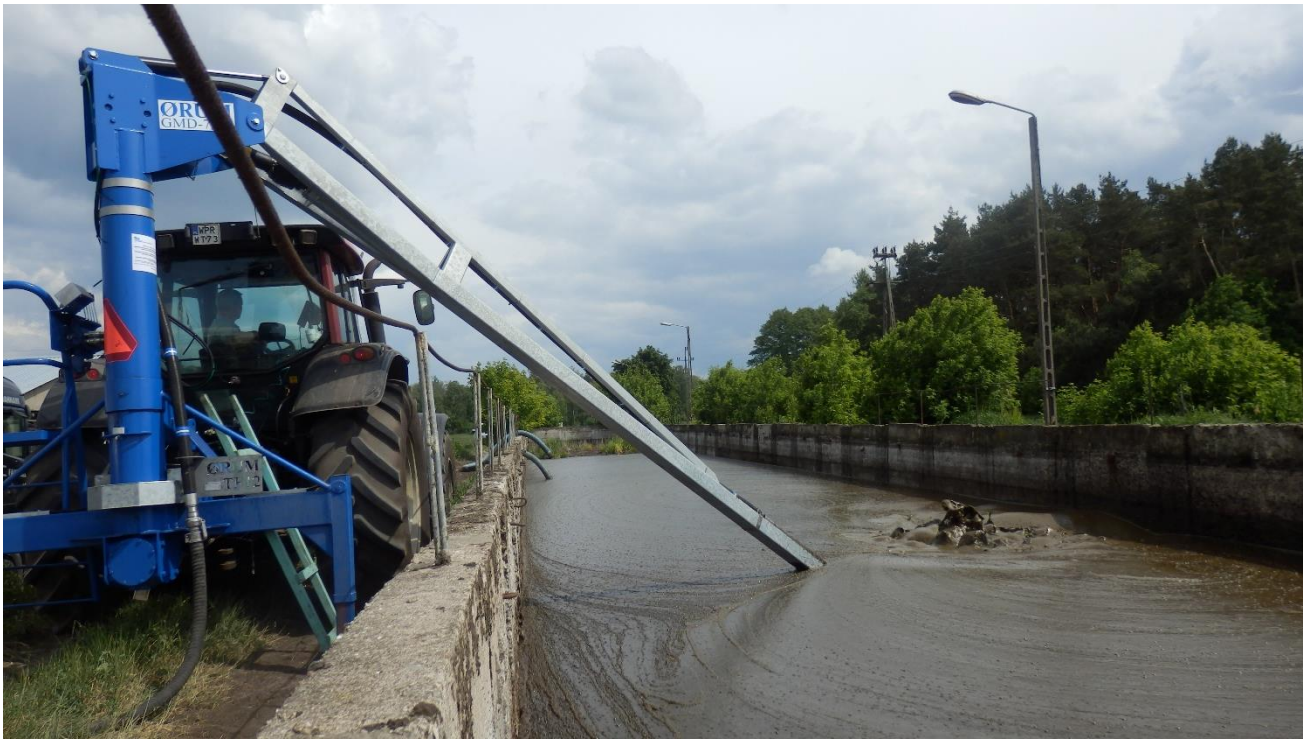

Figure: In-storage SAT investment (Ørum) made by ITP in Poland, here acidifying slurry at ITP's experimental farm in Biebrza.

ITP have invested in a tractor powered in-storage acidification equipment from Orum Co as for EUR 39'000 well as in small scale (2 x 12,5 m^3) in-storage equipment from FAPO Co for EUR 22'000 at their research farm. The total cost of investment was EUR 61'000, which matches perfect with the project budget of EUR 61'000.

The procurement was separated in two parts: one for tractor propelled in-storage and another for small scale in-storage equipment. The small scale equipment procurement was initiated in August 2017 and completed in December 2017. Only one offer from FAPO Co for EUR 22'000 was received and accepted. Equipment was installed in December 2017. The second procurement for tractor powered mixer was initiated in October 2017 and completed in February 2018. There was only one offer from ORUM Co for EUR 39'000 in this case too. The sign of good co-operation between ITP and ORUM was that the machinery was delivered (December 2017) even before the payment was made (February 2018).

As the problematic sight of the procurement for ITP was that all the documentation from ORUM in Danish (or even in English) had to be translated into Polish to complete the procurement in a correct way.

There is no specific legislation that limits the procurement. ITP was using method to bid-at-three.

Figure: The small-scale In-storage SAT investment designed by ITP for experimental purposes at their Falenty field station.

Polish dealers for slurry acidification equipment are:

West part of Poland: www.pomot.pl, address: str. Słowiańska 2, 74-500 Chojna, Poland. Managing Director: Leszek Siatka

East part of Poland: www.agro.serwis.com, address: str. Kościelna 16, 18-315 Kołaki Kościelne, Poland, Owner: Dariusz Sobol

Sweden

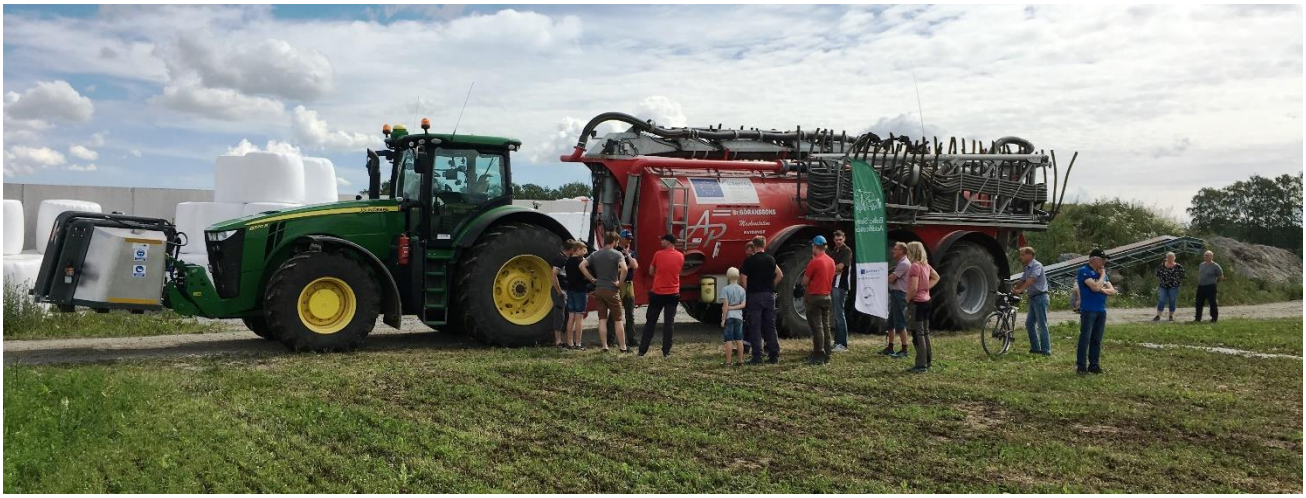

Figure: In-field SAT investment (SyreN) made by Br. Göransson on display at a demonstration in Sweden.

Br. Göransson AB has invested in an in-field SAT system in order to sell slurry acidification services to their customers when spreading the slurry. As they are too are farm contractors (as same as Blunk), their equipment too is of larger size containing 28 m^3 AP slurry tanker from AP Gyllevongne A/S equipped with 24m wide trailing hose spreading device and SyreN acidification equipment from Biocover. The total cost of equipment was EUR 384'618,75.

The procurement was separated in two parts: one for 30 m^3 slurry tanker equipped with 24m wide trailing hose spreading device and other for acidification equipment. The slurry tanker and spreader procurement was initiated in December 2015 and completed in April 2016. They got 3 good offers for that: from GOMA Viborg ApS for EUR 262'083 plus VAT and shipping; from HARSO for EUR 259'012 plus VAT and shipping and from AP Gyllevongne A/S for EUR 252'695 plus VAT and shipping. Offer 3 was the lowest cost but they also had the largest tires which was a procurement criteria. Then there was the procurement for acidification equipment from April 2016 till April 2017 and only one good offer was received from Biocover AS for 55'000 plus VAT and shipping.

The long delay before announcing the procurement acidification equipment was because Br. Göransson was waiting for the approval of the procurement process for slurry tanker and spreader. Also after recieving the SAT in April 2017, it took another month before the equipment was installed on the tractor and slurry tanker.

Procurment critera for the tanker included: largest available tanker under 30 m3, trippleboggie with largest wheel size possible, 24 meter trailing hose boom, crane-arm loading, centrifugal pump. Procurement critera for the SAT equipment included: verified according to standards equal to or greater than VERA, approved for ADR transport of dangerous goods, use concentrated sulfuric acid (approx 96%), automatic pH regulation, easy to rinse clean with water, controlled through ISO BUS terminal based software for easy integration with the tractor.

Procurement for the SAT equipment was delayed due to difficulties and getting the first procurement approved by the the MA/JS. There were uncertainties about which procurement method should be used due to the overall size of the investment, whether bid-at-three, national open procurement or EU open procurement. Public procurement legislation in Sweden is only for authorities not intended for private companies and therefore it is essentially not possible for private companies to comply with the legislation. After consultations with the National Agency for Public Procurement, the Swedish Competition Authority and the Swedish Agency for Economic and Regional Growth, it was still unclear about what rules actually applied in Sweden. Another issue without clarification was that total cost of the slurry tanker was above the national threshold for open procurement, however, the amount that would be reimbursed to our partner through the de minimus state aid element for the tanker was under the national threshold and within the "bid-at-three" procurement range. After discussions with the above named authorities, it was eventually decided that bid-at-three procurement would be sufficient for the tanker as well since the amount of reimbursement from the Interreg program is under the national threshold. There were no issues with the procurement for the SAT equipment and the "bid-at-three" rule was applied, however only one bid was actually received.

There are no dealers of slurry acidification equipment in Sweden at the moment.

Table 2: Summary of the procurement process.

Country	Organisation	SAT type	Investment cost, € (including VAT)	ERDF Funding, €	Equipment delivered
EE	ECRI	In-field	144,960	102,680	June 2018.
DE	Blunk GmbH	In-field	366,825	175,000	July 2018
LV	Lauku Agro SIA	In-field	157,000	117,750	September 2017
LT	LUHS	In-field	223,474	156,987	November 2017
PL*	ITP	In-storage	68,379	58,122	December 2017
SE	Br. Göransson	In-field	384,619	192,345	April 2017
TOTAL	**7 pilot installations**		**1,345,257**	**802,883**	

*PL made 2 investments which are summarized here.

Annex A: Specifications

Annex A.1: Specification of slurry tanker

		Needed
GENERAL		
Volume	m3	20
Chassis	Type	Fully welded
Number of axles	Pcs.	2
Loading	Type	Self loading
Unloading	Type	Centrifugal
Brakes	Type	Hydraulic
PTO shaft	Diameter/splines	1 3/4 and 6 or others
Drawbar	Type	Hydraulic suspension
Tyres	Not smaller than	650/60-R30,5 Radial
TANK		
Volume	m3	20
Diameter	At least, mm	2000
Material	Type	Steel grade
Material thickness	At least	5mm
Outside cover	At least	Sandblasted, polyuerethane, varnish and primer
Inside cover	At least	Epoxy
Anti-surge partion	At least	3
6” coupling		Yes
Inspection hatch		Yes
Mechanical level indicator		Yes
Electronic filling indicator		Yes
Hydraulic ball plug valve for mixing		Yes
Hose protection for trailing hose boom		Yes
CHASSIS		
Type		Fully welded
Cover	At least	Sandblasted, polyuerethane, varnish and primer
Boom fixing		Fixed
Coupling	Type/size, mm at least	Bolt on Schamuller Ball type hitch, 80
Drawbar	Type	With hydraulic suspension
Drawbar height adjustment	At least	Mechanical
Parking		Hydraulic jack
AXLES		
Number of axles	At least	2
Suspension		Hydraulic with speed sensors

Steering type		Electronic with axle lock
Steering angle	At least, degrees	15
Mudguards on all wheels		Yes
Brakes	Type	Hydraulic
Brake sizes	At least, mm	410x180
Width	At least, mm	2200
Tyres	Not smaller than	650/60-R30,5 Radial
Tyre pressure regulators		2 circuit, shut off valve for each wheel
PTO		
Wide angle universal shaft	Min length, m	XX
LOADING		
Device	Type	Self loading, hydraulic arm, vacuum pump
Turning circle of device	At least, degrees	100
Output	At least, l/min	6000
Max reach, storage height	At least, mm	2600
Max reach, in storage	At least, mm	5200
Flowmeter		Yes
Computer control		Yes
Auto-load and weight control		Yes
UNLOADING		
Device	Type	Centrifugal pump with hydraulic drive
Pump output	At least, l/min	4500
Stone trap		Yes
Flowmeter		Yes
Computer control		Yes
Piping galvanised		Yes
Coupling for trailing hose system		Yes
HYDRAULICS		
Couplings at the rear of tanker	At least	9
Coupling type		Quick release couplings
Outlets prepared for section control		Yes
Computer control		Yes
LIGHTS		
According to legislation road trafic safe		Yes
Working lights on loading device	At least, pcs.	2
Type of working lights/ brightness	At least, Type/lumens	LED/ 1500
LUBRICATION		
Type	Manual	Yes
OTHER		
Camera at the rear		Yes

Camera at the loading device		Yes
Colour screen in cab for cameras		Yes
Tool box		Yes
Clean water tank	At least 15l	Yes
Ladder for inspection		Yes
User's manual (including maintenance issues) in local language		Yes
PRACTICAL TRAININGS AND DEMOS		
How to connect tanker to the tractor		Yes
How to operate tanker/spreader basic operations		Yes
Safety instructions		Yes
Guidelines for maintenance		Yes
Warranty issues		Yes

Annex A.2: Specification of slurry spreading equipment

		Needed
GENERAL		
Connected to tanker		Yes
Boom width	m	24
Number of distributors	Pcs.	1
Material		Fully galvanised metal parts
ISOBUS compatible		Yes
BOOM		
Width	m	24
Protection	Type	Trapezium
Material		Galvanised steel
Rising/lowering	Type	Hydraulic from cabin
Folding/unfolding	Type	Hydraulic from cabin with master/slave cylinders
Transport position		Inclined to protect against dripping
Anti drip system		Yes
Trailing hose end type	Type	Trailing shoes, open end???
Section control		Yes
Max width of section	m	2
DISTRIBUTOR		
Pieces	Pcs.	1
Position		Vertical
Chopper		Rotating knives
Drains per distributor	Pcs.	48...72
Output per distributor	l/min	6000+
Stone trap		Yes
Stone trap slide valve	At least	Hydraulically operated for emptying
Dosage		From cabin via controller
HYDRAULICS		
Couplings at the rear of tanker	At least	9
Flow	l/min	40+
Pressure	bar	180+
Computer control		Yes
LIGHTS		
According to legislation road trafic safe		Yes
LUBRICATION		
Type	Manual	Yes
OTHER		

PRACTICAL TRAININGS AND DEMOS	
How to operate spreader	Yes
Safety instructions	Yes
Guidelines for maintenance	Yes
Warranty issues	Yes

Annex A.3: Specification of slurry acidification equipment

		Needed
GENERAL		
Connected to tanker		TBD
Acid used		96% H2SO4
Number of mixers	Pcs.	1
Tank placement		Front linkage
ISOBUS compatible		Yes
TRACTOR TO BE EQUIPPED (INFORMATION FOR SUPPLIER)		
Brand/Model		XXX
Power	hp	230+
Transmission		Powershift
Front linkage lifting capacity	Kg	4500+
Front linkage category		3
Hydraulic coupler at the front		Yes
Hydraulic return at he front		Yes
Elevated traffic light	At least at bonnet level on sides of cab	Yes
ISOBUS plug at the rear		Yes
ISOBUS terminal in the cab		Yes
TANKER TO BE EQUIPPED (INFORMATION FOR SUPPLIER)		
Brand/Model		XXX
Boom width	m3	24
Central wire box for coupling to ISOBUS wire harness		Yes
TANKS		
Main acid tank	Type	IBC with self vented drip free dry connector installed
Main acid tank volume	m3	1
Tank for additives	Type	Stainless steel with external level indicator with self vented drip free dry connector installed
Volume of tank for additives	l	80+
Clean water tank	Type	Stainless steel with electronical and external level indicator
Clean water tank volume	l	50+
Acid pump with PTFE lined ADR approved hose and self vented drip free dry connector to connect to acid tank		Hydraulic drive with RPM sensor and calibrating valve
Electrically driven pump for additives		Yes
HOSES		
Material		PTFE lined ADR approved hose for sulphuric acid

Couplings	Type	Stainless steel 60 degree cone	
Couplings per hose	Pcs.		2
Total length of hoses	m, according to tractor and tanker models	To be checked by supplier	
MIXER			
Type of mixer		Turbulence type with direct acid injection	
Material of mixer		Galvanised steel	
Type of injector		Direct with contra valve	
Material of injector		Stainless steel	
ph meter in stainless steel sump		Yes	
LIGHTS IN FRONT			
According to legislation road trafic safe		Yes	
Type		LED	
Low beam	Pcs.		2
High beam	Pcs.		2
Turning lights	Pcs.		2
Side position (gabarites)	Pcs.		2
SAFETY			
Filling acid	Type	No direct filling	
Connections to acid/ additive tanks	Type	Self vented drip free dry connector	
Washing system with clean water after use	Type	Automatic	
All around external impact protection cage with impact safe floor for acid tank		Yes	
Lockable cage for acid tank		Yes	
Tree point linkage for fitting to tractor		Yes	
Extra chain for tank cage safety		Yes	
Traffic monitoring camera on acid tank cage with monitor in cabin		Cameras at left and right side	
Camera for monitoring acid tank loading in cage with monitor in cabin		Yes	
Storage for safety equipment within acid tank cage	Type	Closed type, lockable	
Gloves approved to work with sulphuric acid	Pair		1
Visor for eye protection	Pcs.		1
Protection apparel	Pcs.		1
pH calibration fluids	Pcs.	2 x 3 bags pH 7 and pH 4	
User's manual	Pcs.		1
Spare part catalogue	Pcs.		1
ELECTRONICS/ DATA STORAGE			
ISOBUS compatible ECU with coupling to tractor ISOBUS terminal		Yes	
ISOBUS software integrated in ECU for controlling dose rate of acid and additives from cabin		Yes	

Wire harness with central wire box and coupling for tank sensor, light, GPS / GSM and ECU controller	Yes
GPS / GSM module for automatic data transfer for documentation in CSV format.	Yes
Log-in to internet download of data	Yes
1 year data traffic from GPS / GSM system	Yes
PRACTICAL TRAININGS AND DEMOS	
How to operate spreader	Yes
Safety instructions	Yes
Guidelines for maintenance	Yes
Warranty issues	Yes

Annex B – Check list template

Project:	Baltic Slurry Acidi
WP:	3
Activity:	3.2.
Sub-activity:	3.2.6.
PP:	

Checklist

SAT type chosen:	
In storage	
In field	
Comments	
Procurement sums (including VAT), EUR	
Offer No.1	
Offer No.2	
Offer No.3	
Comments	
Offering company:	
Offer No.1	
Offer No.2	
Offer No.3	
Comments	
Time schedule (dates):	
Procurement documantation ready	
Procurement announced	
Offers received	
Contract signed	
Machinery received	
Comments	

Specific details of the contract (if applicable):	
General explanation of whole procurement process (please indicate any difficulties or deviations as well):	

Annex C – Procurement process for Estonian installation

Annex C.1: Checklists for procurement process

Project:	Baltic Slurry Acidi
WP:	3
Activity:	3.2.
Sub-activity:	3.2.6.
PP:	3, ECRI

Checklist

SAT type chosen:	
In storage	
In field	SyreN
Comments	Device is BioCover SyreN mini. This is SyreN special edition for research purposes. The acid tank is 60 l and is placed behaind the tractor.
Procurement sums (including VAT), EUR	
Offer No.1	72900+14 580(VAT)=87 480 EUR
Offer No.2	
Offer No.3	
Comments	It was public procurement, and only one offer was made.
Offering company:	
Offer No.1	Eesti Agritehnika OÜ
Offer No.2	
Offer No.3	
Comments	Eesti Agritehnika OÜ is BioCover dealer in Estonia.
Time schedule (dates):	
Procurement documantation ready	30.10.2017
Procurement announced	30.10.2017
Offers received	03.11.2017
Contract signed	03.11.2017
Machinery received	
Comments	The machinery is ready for delivery in BioCover and is waiting for slurry tank and slurry spreader
Specific details of the contract (if applicable):	The contract icludes also the installing of system to the spreader and also training of staff.

General explanation of whole procurement process (please indicate any difficulties or deviations as well):	The most complicated part was to prepare conditions for procurement. Procurement process itself was not difficult because we have 1) digital system in Estonia for public procurements, 2) an experienced person in ECRI who is reponisble for procurements and he worked with procurement system.

Project:	Baltic Slurry Acidi
WP:	3
Activity:	3.2.
Sub-activity:	3.2.6.
PP:	3, ECRI

Checklist

SAT type chosen:	
In storage	
In field	X
Comments	Joskin Slurry 8 m3 tanker and 3 m open-slot disc injecteor. It will work with BioCover SyreN mini.

Procurement sums (including VAT), EUR	
Offer No.1	47900+ 9580(VAT)=57480
Offer No.2	129000+25800=154800
Offer No.3	
Comments	It was public procurement, and only two offers was made.

Offering company:	
Offer No.1	Stokker AS
Offer No.2	Eesti Agritehnika OÜ
Offer No.3	
Comments	

Time schedule (dates):	
Procurement documantation ready	31.10.2017

Procurement announced	01.11.2017
Offers received	17.11.2017
Contract signed	14.12.2017
Machinery received	By contract it should be 30.04.2017
Comments	

Specific details of the contract (if applicable):	

General explanation of whole procurement process (please indicate any difficulties or deviations as well):	The most complicated part was to prepare conditions for procurement. Procurement process itself was not difficult because we have 1) digital system in Estonia for public procurements, 2) an experienced person in ECRI who is reponisble for procurements and he worked with procurement system.

Annex D – Procurement process for German installation

Annex D.1: Checklists for procurement process

Project:	Baltic Slurry Acidi
WP:	3
Activity:	3.2.
Sub-activity:	3.2.6.
PP:	10, Blunk GmbH

Checklist

SAT type chosen:	
In storage	
In field	x
Comments	
Procurement sums (including VAT), EUR	
Offer No.1	366,825.00
Offer No.2	
Offer No.3	
Comments	
Offering company:	
Offer No.1	Kaweco
Offer No.2	
Offer No.3	
Comments	
Time schedule (dates):	
Procurement documantation ready	10.01.2017
Procurement announced	16.01.2017
Offers received	06.02.2017
Contract signed	18.01.2018
Machinery received	11.07.2018

Comments	
Specific details of the contract (if applicable):	
General explanation of whole procurement process (please indicate any difficulties or deviations as well):	

Project:	Baltic Slurry Acidi
WP:	3
Activity:	3.2.
Sub-activity:	3.2.6.
PP:	

Checklist

SAT type chosen:

In storage	
In field	x 20 Variboxes
Comments	

Procurement sums (including VAT), EUR

Offer No.1	1,004.00
Offer No.2	
Offer No.3	
Comments	

Offering company:

Offer No.1	Promens
Offer No.2	
Offer No.3	
Comments	

Time schedule (dates):

Procurement documantation ready	10.05.2018
Procurement announced	11.05.2018
Offers received	18.05.2018
Contract signed	01.06.2018
Machinery received	03.07.2018
Comments	

Specific details of the contract (if applicable):	
General explanation of whole procurement process (please indicate any difficulties or deviations as well):	Because of the total amount of 20.080 € we were allowed to use a free award procedure process for the the Variboxes. There were no problems.

Annex E – Procurement process for Latvian installation

Annex E.1: Checklist for procurement process

Project:	Baltic Slurry Acidi
WP:	3
Activity:	3.2.
Sub-activity:	3.2.6.
PP:	21, Lauku Agro SIA

Checklist

SAT type chosen:	
In storage	
In field	x
Comments	Syren system from Biocover, Fendt 930 tractor and Samson PG25 slurry tanker with 24m booms and hose system
Procurement sums (including VAT), EUR	
Offer No.1	162,500.00
Offer No.2	169,500.00
Offer No.3	157,000.00
Comments	all second hand equipment, very well refurbished
Offering company:	
Offer No.1	AGS Maskiner, VAT No DK33134908
Offer No.2	AR Agro SIA, VAT No LV43603039552
Offer No.3	GOMA Viborg ApS, VAT No DK 10963230
Comments	1) Samson, 2) Joskin, 3) Samson
Time schedule (dates):	
Procurement documantation ready	03.07.2017
Procurement announced	03.07.2017
Offers received	12.07.2017
Contract signed	31.08.2017
Machinery received	29.09.2017

Comments	-
Specific details of the contract (if applicable):	-
General explanation of whole procurement process (please indicate any difficulties or deviations as well):	The main problem for tender providers was to find acidification system that we asked in product specs because of only one manufacturer - Biocover. Few minor issues regarding tanker specs, had to change before publishing because it fit only one manufacturer

Annex F – Procurement process for Lithuanian installation

Annex F.1: Checklist for procurement process

Project:	Baltic Slurry Acidi
WP:	3
Activity:	3.2.
Sub-activity:	3.2.6.
PP:	18, LUHS (Institute of animal sciences)

Checklist

SAT type chosen:	
In storage	
In field	Biocover A/S system slurry acidification in field.
Comments	Tank capacity is 20 cubic metres and 12 metres spreading hoses.
Procurement sums (including VAT), EUR	
Offer No.1	184 690,00 + VAT 38 784,90 Total amount including VAT 223 474,90 Euro
Offer No.2	
Offer No.3	
Comments	Was organized public procurement and was got one offer.
Offering company:	
Offer No.1	UAB Biržų žemtiekimas (Joint-Stock Company Biržų žemtiekimas)
Offer No.2	
Offer No.3	
Comments	UAB Biržų žemtiekimas is BioCover dealer in Lithuania.
Time schedule (dates):	
Procurement documantation ready	13.06.2017
Procurement announced	14.06.2017
Offers received	28-06-2017
Contract signed	01.08.2017
Machinery received	07.11.2017

Comments	The equipment will be tested until 27 July 2017, depending on weather conditions.
Specific details of the contract (if applicable):	The contract including for two people training and full installation and testing.
General explanation of whole procurement process (please indicate any difficulties or deviations as well):	In Lithuania there are strict procurement requirements and a long document evaluation period. The open tender procedure takes about 4 months.

Annex G – Procurement process for Polish installation

Annex G.1: Checklists for procurement process

Project:	Baltic Slurry Acidi
WP:	3
Activity:	3.2.
Sub-activity:	3.2.6.
PP:	7, ITP.

Checklist

SAT type chosen:	
In storage	X
In field	
Comments	FAPO production, but system was elaborated by ITP. Original acidification storage system siutable for Polish conditions presented to POLISH PATENT OFFICE
Procurement sums (including VAT), EUR	
Offer No.1	22,000.00
Offer No.2	
Offer No.3	
Comments	That was provided public procurement with only one offer.
Offering company:	
Offer No.1	FAPO Co..
Offer No.2	
Offer No.3	
Comments	It took time but there was no problems with procurement and money transfer.
Time schedule (dates):	
Procurement documantation ready	15.08.2017
Procurement announced	15.09.2017
Offers received	15.10.2017

Contract signed	15.11.2017
Machinery received	20-12-2017
Comments	Good cooperation with FAPO
Specific details of the contract (if applicable):	
General explanation of whole procurement process (please indicate any difficulties or deviations as well):	There was no problems with procurement and money transfer activities.

Project:	Baltic Slurry Acidi
WP:	3
Activity:	3.2.
Sub-activity:	3.2.6.
PP:	7, ITP

Checklist

SAT type chosen:	
In storage	X
In field	
Comments	ORUM system type GDM 7500 - TF -12, power requirements about 200 hp
Procurement sums (including VAT), EUR	
Offer No.1	39,000.00
Offer No.2	
Offer No.3	
Comments	That was provided public procurement with only one offer.
Offering company:	
Offer No.1	ORUM Co.
Offer No.2	
Offer No.3	

Comments	It took time but there was no problems with procurement and money transfer.
Time schedule (dates):	
Procurement documantation ready	15.10.2017
Procurement announced	15.11.2017
Offers received	25.11.2017
Contract signed	15.02.2018
Machinery received	15-12-2017 (yes that is true we received machinery before payment)
Comments	Good cooperation with ORUM
Specific details of the contract (if applicable):	
General explanation of whole procurement process (please indicate any difficulties or deviations as well):	There was no problems with cooperation , just procurement needs time spent to get things done.

Annex H – Procurement process for Swedish installation

Annex H.1: Checklist for procurement process

Project:	Baltic Slurry Acidi
WP:	3
Activity:	3.2.
Sub-activity:	3.2.6.
PP:	17

Checklist

SAT type chosen:	
In storage	
In field	X
Comments	
Procurement sums (including VAT), EUR	Two stage procurement - (1) for slurry tanker and (2) for in-field SAT
Offer No.1	(1) 259 012 excluding VAT and shipping, (2) 55 000 excluding VAT
Offer No.2	(1) 262 083 excluding VAT and shipping
Offer No.3	(1) 252 695 exluding VAT and shipping
Comments	
Offering company:	
Offer No.1	(1) Harsø (27), (2) Biocover
Offer No.2	(1) Göma Viborg APS (Samson pg II 27)
Offer No.3	(1) AP Gyllevongne A/S (28)
Comments	(1) For slurry tanker only. Offer 3 was lowest cost but they also had the largest tires which was a procurement criteria. (2) Only one offer for the in-field SAT was recieved, Kyndestoft did not send in a bid since their system did not meet the procurement critera.
Time schedule (dates):	
Procurement documantation ready	(1) December 2015, (2) April 2016
Procurement announced	(1) December 2015, (2) December 2016

Offers received	(1) December 2015, (2) February 2017
Contract signed	(1) February 2015, (2) March 2017
Machinery received	(1) April 2015, (2) April 2017
Comments	(2) the long delay before announcing the procurement was because PP17 was waiting for the approval of the procurement process for (1). Also after recieving the SAT in April, it took another month before the equipment was installed on the tractor and slurry tanker.
Specific details of the contract (if applicable):	(1) procurment critera for the tanker included: largest available tanker under 30 m3, trippleboggie with largest wheel size possible, 24 meter trailing hose boom, crane-arm loading, centrifugal pump. (2) procurement critera for the SAT equipment included: verified according to standards equal to or greater than VERA, approved for ADR transport of dangerous goods, use concentrated sulfuric acid (approx 96%), automatic pH regulation, easy to rince clean with water, controlled through ISO BUS terminal based software for easy integration with the tractor.

General explanation of whole procurement process (please indicate any difficulties or deviations as well):	(2) procurement for the SAT equipment was delayed due to difficulties and getting the (1) procurement approved by the the MA/JS. There were uncertainties about which procurement method should be used due to the overall size of the investment, whether bid-at-three, national open procurement or EU open procurement. Public procurement legislation in Sweden is only for authorties not intended for private companies and therefore it is essentailly not possible for private companies to comply with the legislation. After consultations with the National Agency for Public Procurement, the Swedish Competition Authority and the Swedish Agency for Economic and Regional Growth, it was still unclear about what rules actually applied in Sweden. Another issue without clarification was that total cost of the slurry tanker was above the national threshold for open procurement, however, the amount that would be reimbursed to our partner through the de minimus state aid element for the tanker was under the national threshold and within the "bid-at-three" procurement range. After discussions with the above named authorities, it was eventually decided that bid-at-three procurement would be sufficient for the tanker as well since the amount of reimbursement from the Interreg program is under the national threshold. There were no issues with the procurment for the SAT equipment and the "bid-at-three" rule was applied, however only one bid was actually recieved. The total cost for the tanker and SAT system was around 310 000 EUR, however, PP17 was only allowed to claim 255

Interreg Baltic Sea Region

Baltic Slurry Acidification

EUROPEAN REGIONAL DEVELOPMENT FUND

EUROPEAN UNION

www.balticslurry.eu

Summary of the project

'Baltic Slurry Acidification' is an agro-environmental project, co-financed by Interreg Baltic Sea Region under the priority area 'Natural resources' and the specific objective 'Clear waters'. The aim of the project is to reduce nitrogen losses from livestock production by promoting the use of slurry acidification techniques in the Baltic Sea Region and thus to mitigate eutrophication of the waters, including airborne eutrophication.

Summary of the report

This feasibility study report describes the background, conditions, planning issues and expected environmental and economic impacts of seven pilot installations of slurry acidification technology equipment in Estonia, Latvia, Lithuania, Poland, Germany and Sweden.

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