

Present

Dr Roy Bartle	Lews Castle College
Andrew Mackenzie	Lews Castle College
Ms Agnes Mols Mortensen	TARI – Faroe seaweed
Prof Lisbeth Truelstrup Hansen	Arktisk Teknologi Center, Greenland
Prof Francesco Gentili	Swedish University of Agricultural Sciences
Calle Niemi	Swedish University of Agricultural Sciences
Jon MacLeod	An Lanntair
Clíodhna Ní Ghríofa	Údarás na Gaeltachta, Na Forbacha, Co. na Gaillimhe
Dr Ronan Sulpice	NUI Galway (part by VC)

Apologies

Prof Rúnar Unnþórsson	University of Iceland
Dr Angus Murray	Lews Castle College
Dr Alasdair Macleod	Lews Castle College, Stornoway

Minute


	ITEM	Comment	Decision	Task	Who?	By date
1.	Approval of Skype meeting minute of 13 January 2020		Approved			
2.	Matters arising from previous meeting	All covered by agenda				

	ITEM	Comment	Decision	Task	Who?	By date
3.	Reporting arrangements (see PDF sent by e-mail)	Andrew gave a detailed account of what was required during the first reporting period and distributed instructions made available by NPA. He requested that all Partners provide details of their FLC and that they should contact their FLC and agree what information they require.		Send details of FLC to Andrew for input to EMS.	All	As soon as possible.
4.	Website progress and questionnaire	<p>The website is now operational (SW-GROW.EU) with information about the purpose of the project and links to further information. In the future, there will be a "private" tab available to Partners where information and documents can be shared.</p> <p>The questionnaire was discussed, and a strategy agreed for data collection.</p>	<p>After small edits, Partners will visit their Associate Partners in each country, to complete a paper copy of the questionnaire. On completion (on paper with hand notations) the document should be scanned and sent via e-mail to Angus Murray (angus.murray@uhi.ac.uk) who will populate the database. On conclusion, a report will be printed showing the outcome(s). We will then discuss our experiences (at a future meeting) and see if the questionnaire needs to be modified before repeating the exercise with all SMEs</p>	Remind Partners of decision	Andrew Mackenzie	Done, e-mail sent 9 March 2020.

	ITEM	Comment	Decision	Task	Who?	By date
			(that will participate) in each country.			
5	Greenland visit	It was agreed that as many Partners as possible should attend the Greenland meeting in the week beginning Mon 10 August 2020 in Sisimiut. Lisbeth has previously circulated details of possible travel options but informed the meeting that Air Greenland flies twice a day from Copenhagen (CPH) to Kangerlussuaq (SFJ) – please note that the late-night departure is going to be on a rental plane with low comfort.	Partners advised to book travel early.	Book travel early if attending.	All	As soon as possible.
6	Any other business	Agnes gave an introduction to TARI and Janus Vang showed participants around the Research Park iNOVA facilities. This is a newly opened facility (June 2013) where private enterprise and public institutions can access state-of-the-art laboratories, instruments, offices and an event location. It was created as a part of a coordinated effort by the state and an array of the largest private enterprises on the islands to improve the scientific infrastructure of the Faroe Islands.				
		Roy gave the presentation that he had given to the conference in Norway in Tromso on 26-30 January 2020. In the presentation he described a computer model developed at Lews Castle College to demonstrate a wind power system for seaweed drying and concluded that: <ul style="list-style-type: none"> Seaweed drying using wind as the primary energy source is very plausible in the NPA region due to good water characteristics. 				

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	<ul style="list-style-type: none"> • Excellent mean windspeeds. • Order-of-magnitude reduction in power requirement if energy capture drying processes are introduced. • For an off-grid system, trade-offs exist between turbine size, battery capacity, and acceptable level of “waste” production. 				
	Calle gave a presentation outlining his recent work that covered Protein quantification, Carbohydrate analysis, Lipid analysis and Spectroscopy of seven varieties of macroalgae.				
	There was discussion about payments received from NPA for the preparatory project.	Check	Establish if the funds have been received by Lews Castle College and distributed to Project Partners.	Andrew Mackenzie	Done (money distributed and Project Partners informed)

Update on progress by person/organisation over the last month	
Lews Castle College	
General	Roy has been designing a blown air-drying experimental facility.
Údarás na Gaeltachta	Reporting on the project, organising trip to Faroe Islands and visiting two seaweed companies.
Swedish University of Agricultural Sciences	At SLU during last month they have received the amino acids analysis from the Umeå Metabolomics centre and have calculated the amount of protein in several samples from other projects (including seaweed from Norway). These data will be useful to set up a reliable

Update on progress by person/organisation over the last month
<p>protein quantification method to be used once we will receive the samples from different SW Grow participants. They have now fixed their GC-FID (Gas Chromatography - Flame Ionization Detector) for the fatty acids analysis!</p>
<p>An Lanntair The last month's activity has been dominated by the Faroes visit facilitated by Tari seaweed and hosted in part by iNOVA in Torshavn. Following the two-day meeting and site visits, time was spent researching the traditional uses of seaweeds at the Faroes museum in Torshavn In the last month, work package activity has been to collate a Directory of seaweed products and branding worldwide, - to seek out local initiatives in the Highlands and Islands, (through previous contacts), and to collect seaweed lore on the Island from archive and oral history resources as a possible window into the efficacy of certain uses and techniques traditionally associated with the two types of seaweed on which we are focussing</p>
<p>University of Iceland Seaweed grow project continues at their faculty. They have taken samples from post-processing of the alga waste from Algalif and dried it into flakes see figure. At the moment they are waiting for chemical analyses at Alega lab.</p>  <p><i>Figure. Alga flakes.</i></p>

Update on progress by person/organisation over the last month
<p>TARI – Faroe seaweed</p> <p>Arranging Faroe meeting – liaising with Roy Bartle (Lews Castle College) over possible drying methods and discussing how they could collaborate on improving their production setup to make it more sustainable.</p> <p>Making arrangements with Fiskaaling with regard to using their freeze dryer for preparing the <i>Alaria esculenta</i> and <i>Palmaria palmata</i> samples for molecular analyses and content of various compounds.</p> <p>Test cultivation of <i>Palmaria palmata</i>, or at least to start.</p>
<p>Arktisk Teknologi Center, Greenland</p> <ul style="list-style-type: none"> • Work on paper on the element/metal content in seaweed species from Greenland, including <i>Palmaria</i> and <i>Alaria</i>. • Attendance at the project meeting in the Faroe Islands • Planning of the SW-Grow project meeting in Sisimiut (scheduled for the week beginning Mon 10 August 2020 in Sisimiut.) • Postponed: shipment of <i>Alaria</i> samples to Ronan and Francisco • Administration
<p>NUI Galway</p> <p>Last month Ronan collected <i>Pamaria Palmata</i> from Ireland (1 strain) and confirmed that they can get good quality DNA. The DNA will be sent for sequencing in the next two weeks to confirm quality.</p>

Planned activity for next 6 months
<p>Lews Castle College</p> <p>General</p> <p>Roy’s main plan for the next 6 months is to construct a drying rig, obtain water activity/moisture content isotherms for the seaweeds, and then dry the seaweed investigating the effects of the following parameters - air velocity, air temperature, inlet humidity - on time, energy efficiency, nutritional quality, and taste. This work will continue beyond the next 6 months, but he will also be available to assist with any technical matters to do with the hatchery pilot.</p> <p>Angus will be adding content to the website and producing a database to hold responses from the survey of Associate Partners.</p> <p>Andrew, Roy and Alasdair will be attending the EMD in Cork on 14 - 15 May 2020 at the invitation of Christopher Parker from NPA. They have been invited to “pitch” SW-GROW to the International participants and are pleased to note that Clíodhna will also be attending.</p>

Planned activity for next 6 months
<p>Údarás na Gaeltachta Clíodhna will be traveling to schools in the local areas to inform them about careers in the marine industry and discussing the EU project SW Grow and how it benefits the local communities. Also meeting with Bord Bia (Irish food board) to discuss their efforts in the seaweed industry in Ireland and how they can increase or improve the help they can provide for SME's in the seaweed sector. She will be putting together a steering committee for the development of the Irish seaweed industry and we will be working on action items to see what way they can all help the Irish seaweed industry. Also, she will be attending the European maritime event in Cork, Ireland to present on SW-Grow and to be present at the stand that the Udaras have for the EU marine projects. In addition, Clíodhna will be organising a press release for month 12 of the project and continuing to post on-line social medias.</p>
<p>Swedish University of Agricultural Sciences During the next 6 months they will analyse the first samples of seaweeds received from SW-Grow participants. They should be able to carry out a full characterization including carbohydrate, lipid, protein, ash and heating value.</p>
<p>An Lanntair Over the next six months work will continue working on the Seaweed directory and oral history and archive research and to set up (skype) meetings together with colleagues at UHI - Steve Husband (Solar drying developer), Ailsa MacLennan (owner of 58 degrees North seaweed farm in Ullapool) and Dr. Andrew Rodgers (who has a background in pioneering seaweed farm research in conjunction with SAMMS) Work will also start on an inventory of specific seaweed species sites on the Island to form a resource map</p>
<p>University of Iceland They intend to pelletise the some of the waste in coming weeks. The pelletizer has been in repair after receiving spare parts and should be operational this week. They will test different moisture level when mixing water to the flakes but might have difficulties due to thickness of dough.</p>
<p>TARI – Faroe seaweed</p> <ul style="list-style-type: none"> • Collecting and preparing A. esculenta and P. palmata samples for molecular and content analyses. • Taking part in the pilot work in Fámjin. • Taking part in a drying experiment.
<p>Arktisk Teknologi Center, Greenland</p> <ul style="list-style-type: none"> • Work on paper on the element/metal content in seaweed species from Greenland, including Palmaria and Alaria. • Planning and execution of summer sampling program (cultivated Alaria and Saccharina, wild Palmaria if possible)

Planned activity for next 6 months	
	<ul style="list-style-type: none"> • Planning and execution of processing experiments (freezing, blanching and drying) • Planning and execution of experiments to characterize quality of raw and processed seaweed • Shipment of Alaria samples to SW-GROW partners • Final planning of the SW-Grow project meeting in Sisimiut (scheduled for August 2020) • Interactions with SW-Grow partners, conducting collaborative tests • Attendance in SW-Grow on-line project meetings • Administration: finances and reporting
	<p>NUI Galway</p> <p>In the next 6 months, they will collect more <i>Palmaria Palmata</i>, as well as <i>Alaria esculenta</i> in Ireland (ca 30 individuals from each seaweed species). They would like also to receive individuals from Faroe, Greenland, Sweden and Scotland if possible.</p> <p>A genome assembly for <i>Palmaria Palmaria</i> and <i>Alaria esculenta</i> will be performed in collaboration with the laboratory of Professor Bjorn Usadel at the CEPLAS (Dusseldorf, Germany). It will allow them to investigate, precisely, the genetic diversity present in both species in the different countries involved in the SW-GROW project. For <i>Palmaria Palmata</i>, they will also benefit from data regarding genomic diversity in Brittany (France) in collaboration with Professor Philippe Potin (Station Biologique de Roscoff, France).</p>

Next meeting:

Skype Thursday 26 March 2020