



Activity report 2011 - 2014
UArctic EALÁT Institute
University of the Arctic Institute for Circumpolar
Reindeer Husbandry (UEI).

Dr Mikhail Pogodaev, president of the UEI Council, Chairman Association of World Reindeer Herders Association (WRH) and dr Svein Disch Mathiesen, UEI Institute leader professor.



Co-ordinated by:



International Centre for Reindeer Husbandry
Международный Центр Оленеводства
Riikkaidgaskasaš Boazodoalloguovddáš

supported by:



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Introduction

The main goal of the *IPY EALÁT* project, *Climate Change and Reindeer Herding*, was to assess the vulnerability of reindeer herding in Eurasia to the effects of climate change. With reindeer herding we mean economic foundation for reindeer herders societies. Today, reindeer herding communities across the Arctic and Sub-Arctic are facing profound changes in their societies; both climate change and socio-economic change are already impacting reindeer herding cultures. The project concluded that adaptation to climate change demand training of local arctic leaders in long term sustainable thinking, based on the best available adaptation knowledge, both scientific and experienced-based traditional and local knowledge. Resilience - thinking should be used to build adaptive capacity through learning and education locally in herders communities. *IPY EALÁT* therefore recommended that national adaptation strategies must recognize minorities, indigenous peoples traditional knowledge, cultural and linguistic rights and integrate them in their adaptation strategies. One of the recommendations from *IPY EALÁT* was to strengthen the cooperation of the circumpolar reindeer herders' network, by supporting the IPY legacy, the *University of the Arctic Institute for Circumpolar Reindeer Husbandry*, (*UArctic EALÁT Institute*) as reindeer as a species and their grazing lands have a special significance for human life and the economy in the Arctic.

Establishing the UArctic EALÁT Institute

On the Occasion of the 4th World Reindeer Herders' Congress Kautokeino, Norway, March 30th - April 3rd 2009 the Kautokeino declaration decided to support the establishment of *UArctic EALÁT Institute* - University of the Arctic Institute for Circumpolar Reindeer Husbandry - as a legacy of IPY EALÁT where all partners in EALÁT-Network Study should be invited to participate on equal terms, and emphasized that Association of World Reindeer Herders should have the leading role in this initiative, to secure user participation. A special MoU to establish the institute was signed by Sámi University College (SUC), the Association of World Reindeer Herders (WRH) and the International Centre for Reindeer Husbandry (ICR) in the presents of UArctic, on this occasion which later all become the founding partners of *UArctic EALÁT Institute*.

Therefore, University of the Arctic Board of Governors approved November 2, 2009 the *UArctic Institute of Circumpolar Reindeer Husbandry (UArctic EALÁT Institute)*, under the cooperation of Sámi University College (SUC), the Association of World Reindeer Herders (WRH) and the International Centre for Reindeer Husbandry (ICR) as an *UArctic Institute*.

UArctic EALÁT Institute is a virtual, federal institute established as a to maintain networks established in the circumpolar north during IPY and to increase the cooperation related to information exchange, research and education in the circumpolar reindeer husbandry. Close to 100 000 herders and over 20 different indigenous peoples live off reindeer herding worldwide, and reindeer are significantly important for the economy and sustainability of these Arctic indigenous communities. We have estimated that about 20 000 youth from reindeer husbandry in Eurasia need educational and/or university training.

The institute focus on knowledge production related to reindeer herders' traditional knowledge, land use change and their food cultures, through increased information, documentation, research, monitoring and education as an adaption strategy to the rapid

changes occurring in the Arctic. With reindeer herding we mean the economic foundation for reindeer herders societies.

The activities of the institute are to

- Increase the public understanding for Arctic issues and challenges for indigenous peoples and reindeer husbandry, including monitoring.
- Increase the educational and research capacity of Arctic peoples, especially indigenous and reindeer herding peoples.
- Replicating to other regions affected by climate change and globalization the indigenous peoples' gained knowledge and ability to deal with such changes.
- The Institute shall have a circumpolar focus, and work for the benefit of Arctic residents, especially focusing on indigenous and reindeer herding peoples.

Target groups:

- Indigenous circumpolar reindeer herding peoples and youth
- Academic institutions, education and research institutions in the north
- Policy makers, and others

Official opening of UArctic EALÁT Institute

The official opening of UArctic EALÁT Institute took place Thursday 24th of March 2011 Guovdageaidnu - Kautokeino, Norway opened by the president of the Sami Parliament Egil Olli in the presents of UArctic Rectors' Forum.

The official opening ceremony for UEI was attended by, among others:

- President Egil Olli of the Norwegian Sámi Parliament
- Deputy Minister Raimo Valle of the Norwegian Government
- Finnmark County Governor Gunnar Kjønneøy
- Chair of the Board of Governors of UArctic Dr Barry Sherr
- Rectors of UArctic, representing Universities across the circumpolar north
- Executive Chair Dr Mikhail Pogodaev of Association of World Reindeer Herders
- Circumpolar group of reindeer herding youth and UArctic students

Council of UArctic EALÁT Institute

The council is represented by leader from partner institutions and led by the council president chairman of Association of World Reindeer Herders, Dr Mikhail Pogodaev. Two council meetings have been hold in January 2012 and June 2012 in Tromsø, Norway to inform partners about activities.

UArctic EALÁT Institute administration

International coordination of the institute and its activities are taking place at International Centre for Reindeer Husbandry (ICR) in Kautokeino, Norway where professor, dr philos Svein D. Mathiesen is employed as UArctic EALÁT Institute leader using the unique network of Association of World Reindeer Herders (WRH) and partner institutions. Professor, dr Robert Corell, USA is also employed at *UArctic EALÁT Institute* at International Centre for Reindeer Husbandry to support the development of the Institute. The purpose of the International Centre for Reindeer Husbandry (ICR), established in 2005 is to strengthen the international cooperation of reindeer husbandry. ICR is a member of University of the Arctic. The main aim of the Centre is to contribute to the maintenance and development of a sustainable reindeer husbandry in the North and to contribute to a strengthening of the cooperation between the world's reindeer herding peoples. The Centre shall also contribute to taking care of the traditional knowledge of reindeer husbandry, and to spread knowledge and understanding of reindeer husbandry. ICR shall gather information and get an overview of relevant knowledge about reindeer husbandry and pass on information and documentation about conditions important for reindeer herders, for their culture and ecology, also including research results and reindeer herders' traditional knowledge. The Centre can indicate the need for and initiate research in collaboration with others. ICR is an independent institution with its own board and budget and is formally organized as a Norwegian state administrative body with a special authority.

Partners of UArctic EALÁT Institute with MoU

Institutions, individual and units at following institutions are presently partners of the institute:

1. Association of World Reindeer Herders - founding



Ассоциация «Оленеводы Мира»
Association of World Reindeer Herders

2. International Centre for Reindeer Husbandry - founding



International Centre for Reindeer Husbandry
Международный Центр Оленеводства
Riikkaidgaskasaš Boazodoalloguoovdáš

3. Sami University College – founding



4. Arctic University of Norway (UiT), Norway



5. University of Lapland, Finland



6. Norwegian School of Veterinary Science, until 31 Dec 2013,
Norwegian University of Life Sciences.



7. North-Eastern Federal University, NEFU, Yakutsk, Russia.



8. Umea University, Sweden



9. Hertzen University, St Petersburg, Russia



10. Yamal Polar Agro-11..Economic Technikum, Salekhard, Yamal Nenets AO, Russia.



11. Nenets AgroEconomic Technikum, Narjan Mahr, Russia.

12. Grid Arendal, Norway.



13. Arctic Portal, Iceland



Activity in UArctic EALÁT Institute 2011

HSH Prince Albert II of Monaco's International Seminar on Arctic Indigenous People, Knowledge Development and Ethics: Thursday 24th of March 2011 in Kautokeino Norway

Training of future arctic indigenous leaders: Professional training program for a group of young indigenous reindeer herders from across the circumpolar Arctic consisting of the following people from Russia: Friday 25th of March 2011 in Kautokeino Norway.

1. Nadya Laptander, Nenets AO (Nenets)
2. Roman Latyshev, Nenets AO (Nenets)
3. Igor Slepshkin, Yamalo-Nenets AO (Nenets)
4. Eduard Lapsuy, Yamalo-Nenets AO (Nenets)
5. Sandra Serotetto, Yamalo-Nenets AO (Nenets)
6. Kristina Serotetto, Yamalo-Nenets AO (Nenets)
7. Ivan Tuprin, Uryung-Khaya, Anabar Ulus, Sakha Republic (Dolgan)
8. Aleksandr Pogodaev, Topolinoe, Sakha Republic (Even)
9. Matrena Struchkova, Topolinoe, Sakha Republic (Even)
10. Maria Kolesova, Batagay-Alyta, Eveno-Bytantaysky, Sakha Republic (Even)
11. Aleksandr Grigorjev, Iengra, Sakha Republic (Evenk)
12. Svetlana Avelova, Khatystyr, Sakha Republic (Evenk)
13. Marianna Kornilova, Khatystyr, Sakha Republic (Evenk)
14. Anna Degteva, Karelia/ St.Petersburg (Veps)
15. Dalaijargal Gombo, Tsaganuur (Dukha/ Tsaataan)
16. Hosbayar Bayandalai, Tsaganuur (Dukha/ Tsaataan)

Adaptation to globalization in the Arctic: the case of reindeer husbandry:

UEI at International Centre for Reindeer Husbandry hold online course (8ETCS/10ETCS) for registered 30 students in cooperation with Oulu University, Finland, and Arctic Portal, Iceland, using the UArctic VTL was given by the institute with lectures and students from partner institutions in Russia, Sweden, USA and Norway Jan, Feb and March 2011.

Arctic Lavvu Dialogue. Round table discussion on knowledge challenges and sustainable development in the north, with participants from different academic institutions, reindeer herding regions and reindeer peoples in Kautokeino Norway Thursday 24th of March 2011. As a contribution to Arctic dialogue, and as a novel method of structured dialogue between Arctic interests and entities, ICR arranged and hosted the first Arctic Lavvu Dialogue during the opening session for the Institute.

The fundamental goal was to stimulate discussions at sufficiently detailed levels so that new insights and deeper understandings could be gained, not only for the Dialogue participants but for the audience who watched the Dialogue proceed. An aim was to enhance intergenerational understandings, and most importantly enhance understanding between often vastly different sectors of society and The participants of the Arctic Lavvu Dialogue were as follows:

1. Prof. Dr Robert W Corell, UEI (Convener)
2. Head Gunn Britt Retter, Saami Council Polar Unit (Convener)
3. Prof. Dr Nils Oskal, Sámi University College (Keynote lecture: ‘The Philosophy of Sámi Traditional Knowledge’)
4. Prof. Dr Ole Henrik Magga, Sámi University College, Kautokeino
5. Dr Nancy Maynard, NASA, Washington DC
6. Exec. Chair Dr Mikhail Pogodaev, Assn. of World Reindeer Herders, Russia
7. Exec. Chair Helena Omma, Saminuorra (Sámi Youth NGO), Sweden
8. Prof. Dr Mauri-Yla Kotola, Rector of Univ of Lapland, Finland
9. Exec. Chair Nils Henrik Sara, Assoc. of Sámi Reindeer Herders in Norway
10. President Sarah Cardinal, Aurora College, Canada
11. Director Dr Douglas Nakashima, UNESCO
12. UArctic Student Representative Jackie Hrabok-Leppäjärvi, Finland
13. Assoc. Prof. Dr Asta Balto, Sámi University College (sum up)
14. Assoc. Prof. Dr Matthias Åhren, Tromsø University (sum up)

Activity in UArctic EALÁT Institute 2012

The activities undertaken have proven to be very successful and a positive force towards achieving some of the goals of the Institute: *“To build competence locally in reindeer herders societies through mobilizing the different partners in the form of developing and implementing research on themes important for reindeer husbandry, recruitment of indigenous students, their training and education, community-based workshops, seminars and conferences in circumpolar reindeer herding areas.”*

Seminar “Reindrift 2030 – ”Future management of Reindeer Husbandry”, 7th January 2012, Guovdageaidnu/ Kautokeino

Arctic Lavvu Dialogue at Arctic Frontiers, 23 – 27 January 2012, Tromsø Arctic Lavvu Dialogue held in relation to the Arctic Frontiers Conference in Tromsø, Norway, funded by International Centre for Reindeer Husbandry. Involving reindeer herding youth from Scandinavia, Nenets AO, Yamalo-Nenets AO and Sakha Republic in Russia. Including a pilot Arctic Lavvu Dialogue session with industry, authorities and reindeer youth, during Arctic Frontiers. Initial working sessions for youth on globalization, land use change and adaptation.

The aim of this preliminary session was to get direction on key issues of the project from the youth perspective, and test methodology (Arctic Lavvu Dialogue concept etc.)

Arctic Council SDWG EALLIN workshop Tromsø January 23-26 2012 The Arctic Council EALLIN project will bring the voice of reindeer herding youth to Arctic Council. EALLIN is a project of the Russian Federation of Arctic Council led by Association of World Reindeer Herders (WRH) in cooperation with Norway. The workshop was held as a contribution to the project start-up of the AC project EALLIN. This workshop was also a preliminary startup session to the *HSH Albert II UArctic EALÁT Student Programme*. It was held in relation to the *Arctic Frontiers Conference*.

Working session with report for UNPFII, 26 – 27 January 2012, Tromsø

The report *Indigenous Reindeer Husbandry; The Impacts of land use change and climate change in Indigenous reindeer herder's livelihoods and land management, and culturally adjusted criteria for indigenous land uses* was submitted by Anna Naykanchina for the 11th Session of the Permanent Forum for Indigenous Issues, New York, 7-18 May, 2012. The report is developed in cooperation with Association of World Reindeer Herders, UArctic EALÁT Institute, International Centre for Reindeer Husbandry and GRID-Arendal.

Training of Future Arctic Leaders:Arctic Lavvu Dialogue with HSH Prince Albert II of Monaco, WITBC 2012 19 – 30 March 2012, Guovdageaidnu/Kautokeino

UArctic EALÁT Institute was arranging the introduction course for the program Training of Future Arctic Leaders. This project is engaging reindeer herding youth where important topics are discussed. Courses, seminars, events and other activities were arranged during 20. – 30. 3, 2012 in Kautokeino as:

- Seminar: “Reindeer Husbandry and Mineral Mining – Will Sami Reindeer Husbandry Survive the Future Mining programs?”, 21.3.2012
- Official launch of SDWG EALLIN in the Kautokeino Snow Cinema, In Guovdageaidnu/Kautokeino Norway, 26th of March 2012
 - In the presence of HSH Prince Albert II of Monaco
 - Included video speech by SAO Chair Mr Gustaf Lind
- UArctic EALÁT Institute Training Program: Training of Future Arctic Leaders – 1st Program 19-30th of March 2012
 - Participants: Indigenous reindeer herding youth from Russia (18), Norway (5), Sweden (5), Finland (2) and Mongolia (2), totally 32 youth participants
 - Contributions from a long list of institutional and organizational partners, including Saami Council, indigenous NGOs, the Sámi Parliaments of Norway, Sweden and Finland, different universities in Norway, Russia and Sweden, industrial developers in Norway, and more
- Arctic Lavvu Dialogue between participating reindeer herding youth and HSH Prince Albert II of Monaco – Youth presenting and discussing challenges and opportunities experienced in their own home societies with HSH Prince Albert II, as part of their training.

- Participating and contributing to the 3rd World Indigenous Television Broadcasting Conference, fully including and involving the EALLIN youth together with a group of indigenous journalists from the Russian northern regions, as part of their training.

Video to press conference

<http://www.nrk.no/witbc2012/1.8046994>

Pictures

<http://www.nrk.no/witbc2012/1.8049401>

Newspapers

<http://www.nordlys.no/nyheter/article5986303.ece>

<http://www.reindeerblog.org/2012/03/26/prince-albert-meets-reindeer-herders-in-kautokeino-norway/>

<http://www.aftenposten.no/nyheter/iriks/Fulltreffer-for-fyrsteparet-6793440.html>

Participants of program - Training of Future Arctic Leaders in Guovdageaidnu/ Kautokeino:

1. *Olga Egorova (Lovozero, Russia)*
2. *Andrey Sakmarkin (Lovozero, Russia)*
3. *Fedor Fefelov (Lovozero, Russia)*
4. *Mikhail Trifonov (Lovozero, Russia)*
5. *Maksim Vasilyev (Lovozero, Russia)*
6. *Anna Degteva (Karelia & St. Petersburg, Russia)*
7. *Anton Latyshev (NAO, Russia)*
8. *Vladimir Vylka (NAO, Russia)*
9. *Eduard Lapsuy (YNAO, Russia)*
10. *Aleksander Okotetto (YNAO, Russia)*
11. *Marianna Kornilova (Yakutia, Russia)*
12. *Svetlana Avelova (Yakutia, Russia)*
13. *Khristofor Nikolaev (Yakutia, Russia)*
14. *Tatiana Fedorova (Yakutia, Russia)*
15. *Aleksander Grigorev (Yakutia, Russia)*
16. *Ivan Tuprin (Yakutia, Russia)*
17. *Ekaterina Savvinova (Yakutia, Russia)*
18. *Ella-Li Spik (Sweden)*
19. *Anne Nutti (Sweden)*
20. *Marja Utsi (Sweden)*
21. *Kristoffer Thomasson (Sweden)*
22. *Helena Omma (Sweden)*
23. *Tuomas Aslak Juuso (Finland)*
24. *Inga Maret Gaup-Juuso (Finland)*
25. *Nils Ante Gaup (Norway)*
26. *Annele Gaup (Norway)*
27. *Ellen J. Bals (Norway)*
28. *Joret Aslat Niillas Bals (Norway)*

29. Berit Marie Lise Eira (Norway)
30. Dalaijargal Gombo (Tsaganuur, Mongolia)
31. Solongo Tsvegmid (Tsaganuur, Mongolia)

**United Nations Permanent Forum of Indigenous Issues,
7 – 18 May 2012, New York**

The report *Indigenous Reindeer Husbandry; The Impacts of land use change and climate change in Indigenous reindeer herder's livelihoods and land management, and culturally adjusted criteria for indigenous land uses* was submitted by Anna Naykanchina for the 11th Session of the Permanent Forum for Indigenous Issues, New York, 7-18 May, 2012. The report is developed in cooperation with Association of World Reindeer Herders, UArctic EALÁT Institute, International Centre for Reindeer Husbandry and GRID-Arendal.

**“Global Change in the Arctic and Co-production of Knowledge”
27 – 29 September 2012, Paris.** UArctic EALÁT Institute was represented by Svein D. Mathiesen, Mikhail Pogodaev, Anna Degteva and Rávdná B. M Eira at the international workshop organised by UNESCO and Museum National D'Histoire Naturelle.

The visit of the President of Mongolia 7 – 8 October 2012, Oslo

A seminar was arranged on the occasion of the Mongolian Presidential visit to Norway October 8, 2012 where Sámi reindeer herders from Norway and Sweden and Dukha reindeer herders from Mongolia met to discuss common challenges, opportunities and prospects for future cooperation. The seminar “*Future Cooperation between Reindeer Herding in Mongolia and Norway*” was opened by The Norwegian Minister of Reform, Government Administration and Church Affairs, Mrs. Rigmor Aasrud. The [Nomadic Herders' Initiative](#) is working to reduce land degradation, conserve biodiversity and sustain the livelihoods of reindeer herders in the fragile taiga regions of Mongolia and Russia. This is a new UNEP/Global Environment Facility project that is also endorsed by the Arctic Council where among others the UArctic EALÁT Institute is a project partner.

Arctic Resilience Report workshop 2 9 – 31 October 2012, Guovdageaidnu/Kautokeino in cooperation with Stockholm Resilience Centre.

The Arctic Resilience Report is an Arctic Council project that analyses the resilience of linked human and environmental systems in the Arctic. It aims to:

- Identify the potential for shocks and large shifts in ecosystems services that affect human wellbeing in the Arctic.
- Analyse how different drivers of change interact in ways that affect the ability of ecosystems and human populations to withstand shocks.
- Evaluate strategies for adaptation and transformation in the face of rapid change.

The purpose of the two-day program in Guovdageaidnu/ Kautokeino was to move the Arctic Resilience Report forward by engaging with a broader group of experts than those directly involved in preparing assessment documents, provide an opportunity for in-depth discussion about the meeting of traditional/local and scientific knowledge in the context of resilience, apply the resilience assessment methodology in context of a pilot case study: reindeer herding and help ensure that the Arctic Resilience Report is grounded in northern realities. The workshop included some presentations of insights so far in the ARR process but also key note presentations, speed talks and ample opportunities for discussions and dialogue, as well as

hand-on- experience of a resilience assessment process. The workshop participants were also visiting the Triumf-family's siida in Biedjovággi area where a new mining project is planned.

NOMADIC HERDERS Day's in St. Petersburg, Russia UArctic EALÁT Institute, International Centre for Reindeer Husbandry and Association of World Reindeer Herders 25 November – 2 December 2012

Nomadic Herders workshop 25 - 27 November 2012 was dedicated to 380th anniversary of Yakutia's integration in the Russian state.

International Conference “Arctic Zone of the Russian Federation: North-Eastern Vector of Development”, 28 November 2012

For two days, 28th and 29th of November, during the conference, which was held at the headquarter of the Russian Geographical Society, there were discussed questions of effective economic development in the Arctic in terms of industrial development. The Conference was opened by vice-president of the Saha Republic (Yakutia) **Dmitry Glushko**. Greeting were given by the secretary general of the Association of World Reindeer Herders **Johan Mathis Turi**, president of the Association of Indigenous Peoples of the North, Siberia and the Far East of Russia **Sergey Kharyuichi**, vice-president of the Russian Geographical Society **Kirill Chistyakov**, representatives of legislative and executive branch of the government. Chair of the Arctic Council **Gustav Lind** had a video-greetings for the participants. Rector of the North-Eastern federal University Yevgeniya Mikhailova, and professor of the UArctic EALAT Institute Svein Mathiesen gave a lecture.

“Civilization of Reindeer and Future of the Arctic: Nomadic Herders and Industrial Development of Natural Resources”, 29 November 2012 International Science Conference at St. Petersburg State University: “Nomadic Herders and Industrial Development of the Arctic.” Arranged by St. Petersburg State University, ICR and UArctic EALÁT Institute at ICR.

”Training of Future Arctic Indigenous Leaders” by the UArctic EALÁT Institute at the International Centre for Reindeer Husbandry, 30 November 2012. Through the Arctic Council SDWG EALLIN project 2012-2014 young reindeer herders have shared knowledge and lessons learned across Scandinavia and the Eurasian landmass. During 12 community-based workshops challenges have been revealed and the following key factors and recommendations to the SDWG has been made, in a quest to ensure the future viability of a sustainable reindeer husbandry: education: need of schools, courses SEK/TEK, traditional knowledge, new technology and communication: networking, internet, Encroachments, Economic: Increased living conditions, salary, support, private herding, health , family life important and engaging young people An SDWG EALLIN workshop and training seminar at Herzen University, co-hosted by Herzen University, Institute of Indigenous Peoples, Association of World Reindeer Herders, ICR and UArctic EALÁT Institute at ICR. Involving 40 young reindeer herding students from Yamalo-Nenets AO, Sakha Republic and several other reindeer regions of the Russian Federation, in addition to a smaller group of reindeer herding youth from Norway and Sweden.

Contributions from a wide list of institutional and organizational partners, including Herzen University in St. Petersburg, Institute of Indigenous Peoples, St.Petersburg State University,

Russian Science Academy, the Russian Polar Academy in SPb, Russian Geographical Society, Sáminuorra, various indigenous NGOs, the Republic of Sakha (Yakutia), the Chambers of Commerce in St.Petersburg and Sakha, GRID-Arendal, UNEP and more. On November 30 at the Institute of Indigenous Peoples of the North of the Herten University wrapped up the EALLIN workshop with the main theme “The training of the future Arctic leaders”. Students at the Institute of Indigenous Peoples of the North include eveni, evenki, yakut, dolgan, koryak and other indigenous peoples of the north. At this institute students get an opportunity to learn the language, culture and history of the people they belong to. Participants of the workshop get acquainted with the educational process of the Institute, visited national specialized classes, museum and the library of the Institute. The workshop was attended by the director of the Institute of Indigenous Peoples of the North Lyudmila Gashilova, the author of many books on Evenki language Nadezhda Bulatova and other scientists and experts. Presentations were given by Mikhail Pogodaev, Anders Oscar, Svein Mathiesen, Anatoly Lebedev, Kristoffer Thomasson and others. For participants of the workshop was presented the movie about Chukchi reindeer herders on Chukchi language.

Participation in Training of Future Arctic Leaders, St Petersburg 26-30th of November 2012:

1. *Anna Degteva (Karelia & St. Petersburg, Russia)*
2. *Marianna Kornilova (Aldansky district, Yakutia, Russia)*
3. *Svetlana Avelova (Aldansky district, Yakutia, Russia)*
4. *Aleksander Grigorev (Neryungrinsky district, Yakutia, Russia)*
5. *Ivan Tuprin (Anabarsky district, Yakutia, Russia)*
6. *Kristoffer Thomasson (Sweden)*
7. *Ol Johan Gaup (Norway)*
8. *Ravdna BM Eira (Norway)*
9. *Helena Omma (Sweden)*
10. *Kurilova Anna (Oleneksky district, Yakutia, Russia)*
11. *Malikova Aksinia (Nizhne-Kolymsky district, Yakutia, Russia)*
12. *Ottoro Daria (Nizhne-Kolymsky, Yakutia, Russia)*
13. *Alekseev Leonid (Oleneksky district, Yakutia, Russia)*
14. *Laptander Olga (Yamalsky district, Yamal, Russia)*
15. *Egorova Dayaana (Oleneksky district, Yakutia, Russia)*
16. *Ozelova Zoya (Shuryshkarsky district, Yamal, Russia)*
17. *Serotetto Nechei (Yamalsky district, Yamal, Russia)*
18. *Tibichi Lidiya (Yamalsky district, Yamal, Russia)*
19. *Yar Venera (Shuryshkarsky district, Yamal, Russia)*
20. *Salinder Aleksey (Yamalsky district, Yamal, Russia)*
21. *Salinder Kseniia (Yamalsky district, Yamal, Russia)*
22. *Nyach Maksim (Tazovsky district, Yamal, Russia)*
23. *Pyak Yuri (Purovsky district, Yamal, Russia)*
24. *Okotetto Nadezda (Yamalsky district, Yamal, Russia)*
25. *Syazi Tatiana (Shuryshkarsky district, Yamal, Russia)*
26. *Yaptik Ekaterina (Yamalsky district, Yamal, Russia)*

27. *Yando Svetlana (Tazovsky district, Yamal, Russia)*
28. *Ezangi Angelika (Yamalsky district, Yamal, Russia)*
29. *Khudi Natalia (Yamalsky district, Yamal, Russia)*
30. *Kuibin Roman (Yamalsky district, Yamal, Russia)*
31. *Nanyang Anastasia (Yamalsky district, Yamal, Russia)*
32. *Turesi Tatiana (Chukotka, Russia)*
33. *Asadova Samira (Chukotka, Russia)*
34. *Terletskaya Angelina (Chukotka, Russia)*
35. *Moskvichev Aleksander (Chukotka, Russia)*
36. *Notaurgina Nelya (Chukotka, Russia)*
37. *Cherepkova Olga (Chukotka, Russia)*
38. *Lazukova Anastasia (Kamchatsky krai, Russia)*
39. *Bobrikova Tatiana (Nenets AO, Russia)*
40. *Yangasova Nadezda (Nenets AO, Russia)*
41. *Kanyukova Olga (Nenets AO, Russia)*
42. *Maksarova Zhanna (Yamalsky district, Yamal, Russia)*
43. *Antonov Dmitry (Taimyr-Dolgan-Nenets district, Krasnoyarsky kray, Russia)*
44. *Katygin Vasilii (Taimyr-Dolgan-Nenets district, Krasnoyarsky kray, Russia)*
45. *Kharbonov Pavel (Taimyr-Dolgan-Nenets district, Krasnoyarsky kray, Russia)*
46. *Barandov Leonid (Archangelsk, Russia)*
47. *Alekseeva Maria (Yakutia, Russia)*

Activity in UArctic EALÁT Institute 2013:

GEF UNEP Nomadic Herders Project:

UArctic EALAT Institute at International Centre for Reindeer Husbandry has delivered the *UNEP Nomadic Herders Program* application, ie. through the implementation of the GEF Project Preparation Grant (PPG) pre-project, together with WRH and UNEP/ GRID-Arendal in the period. This work has also been regulated by the PPG collaboration agreement with UNEP/ GRID-Arendal on implementation in 2012-2013. Through this agreement, ICR contracted local project expert teams in Mongolia and Russia, that together with the joint international team completed the PPG phase draft document by April 2013. This document represents a very comprehensive run-through of taiga reindeer herding and biodiversity in the chosen target areas of Mongolia and Southern Sakha Republic (around 400 pages long incl. appendixes), and has been delivered to the environmental ministries of Russia and Mongolia. During the PPG phase, there was also implemented a separate 'sub-project' funded by the Ministry of Environment in Norway, focused on biodiversity in Sakha (Yakutia), which among other things also facilitated creation of a short documentary movie made by reindeer herding youth. During the PPG phase, UEI, WRH, ICR, and the project team was also invited and participated at the World Environmental Day in 2013 hosted by Mongolia. This included a formal meeting with H.E. Mr Tsakhiagiin Elbegdorj President of Mongolia in his offices in Ulan Bator. There was also planned and implemented a joint international conference together with the Mongolian Ministry of Natural Resources and Environment, including local reindeer herders and the protected area management of Northern Mongolia. There was also held seminars with the reindeer herders.

Activity and planned activities in UArctic EALÁT Institute in 2014

The UArctic EALÁT Institute organized a workshop: Global change, indigenous community –based observing systems and co-production of knowledge for the circumpolar north. March 25-27th in Kautokeino, Norway in cooperation with UNESCO and Sami University College with participants from Alaska, Canada, Greenland, France, Norway, Sweden, Russia and Mongolia. Main focus was the role of traditional knowledge in governance of natural resources in the high-north with cases from reindeer husbandry and other indigenous societies. Minister of Regional Development Jan Tore Sanner, Norway opened the workshop

Participants:

1. *Alfthan Björn, GridA, Norway*
2. *Bals Elle, TK-student at SUC, Norway*
3. *Bergstrøm Grethe, Samisk Arkiv Norway*
4. *Blom Anders, Protect Sapmi Sweden*
5. *Carrere Alize, Student, France*
6. *Corell Robert. ICR, USA*
7. *Danielsen Finn, NORDECO, Denmark*
8. *Degteva Anna, ICR, Russia*
9. *dePalaminy Adele, CNRS/MNHN, France*
10. *Egorova Olga, TK-student at SUC, Russia*
11. *Egorova Tatiana, Barsec, Russia*
12. *Eira Ravdna Biret Marja, ICR/SUC, Norway*
13. *Eira John Henrik, SUC, Norway*
14. *Eira Inger Marie Gaup, SUC Norway*
15. *Eira Anders, Protect Sapmi Norway*
16. *Eira Berit Marie, TK-student at SUC Norway*
17. *Eira John Einar jr., TK-student at SUC Norway*
18. *Enghoff Martin, NORDECO, Denmark*
19. *Gaup Nils Peder I., TK-student at SUC, Norway*
20. *Gearheard Shari, NSIDC, USA*
21. *Gerasimova Alona, UEI, Russia*
22. *Granaas Sylvi, SUC, Norway*
23. *Henriksen Ravdna T, TK-student at SUC, Norway*
24. *Holm Lene Kielsen, GCRC, Greenland*
25. *Huntington Henry, USA*
28. *Hætta Anne Karen, SUC, Norway*
29. *Hætta Ellen Marit S, TK-student at SUC, Norway*
30. *Iavtysaya Olga, Head of Obshina "Vy Tu" from NAO, Russia*
31. *Javo Aile, Saami Council, Norway*
32. *Johnson Noor, Brown University, Canada*
33. *Jonsson Erika, Saminuorra, Sweden*
34. *Kalak Line, SUC, Norway*
35. *Krarup Kia Hansen, UEI/ICR, Denmark/Norway*
36. *Kemi Mikkel Anders, ICR, Norway*
38. *Lavrillier Alexandra, CEARC/OVSQ, France*
39. *Lebedev Anatoly, Union of Obshinas "Oron", Sakha rep. Russia*
40. *Länsman Marit Inga, TK-student at SUC, Finland*

42. *Magga Juha, WRH, Finland*
43. *Magga Anne-Maria, Suoma Sámi Nuorat, Finland*
44. *Marfusalov Dmitry, Mayor of Khatystyr, Sakha rep, Russia*
45. *Mathiesen Svein D., UEI/ICR, Norway*
46. *Maynard Nancy, ICR, USA*
47. *Nakashima Douglas, UNESCO, France*
49. *Omma Helena, ICR, Sweden*
50. *Oskal Anders, ICR, Norway*
51. *Partapuoli Per Jonas, Saminuorra, Sweden*
52. *Pogodaev Alexander, Sakha rep. Russia*
53. *Pogodaev Mikhail, WRH, Russia.*
54. *Rubis Jennifer, UNESCO, France*
55. *Ruoé Marie, CNRS/MNHN France*
56. *Salo Anja, BarSec Norway*
57. *Sara Nils Henrik, NRL Norway*
58. *Sara Elna, ICR Norway*
59. *Sara Inga MA Utsi, TK-student at SUC Norway*
60. *Sara Karen Utsi, TK-student at SUC Norway*
61. *Sidorov Dzulustan, Reindeer obshina "Gonam", Sakha rep. Russia*
62. *Smuk Inger Anita, WRH, Norway*
63. *Somby Berit Anne, TK-student at SUC Norway*
64. *Triumpf Ellen Cecilie, TK-student at SUC, Norway*
65. *Turi Johan Mathis, WRH, Norway*
66. *Turi Ole-Anders, UEI Norway*
67. *Utsi Berit Kristine, TK-student at SUC, norway*
68. *Serotetto Nechey, Student from Yamal at Herzen University, russia*
70. *Tibitchi Ksenia, Student from Yamal at Herzen University, russia*
71. *Taleev Nikolay, NAO, Russia*
72. *Gaup Daniel J., SUC, Norway*
73. *Triumpf Inger Anne S., SUC, Norway*
74. *Kalvemo Astrid, Norway*
75. *Utsi Marit Meløy, Samedigginorway*

The Seminar: The Laponia management - a solution for reindeer herders in Russia and Mongolia was hold in Jiellevárre, Sweden March 28 - 30th for reindeer herders from Mongolia, Russia, Norway and Sweden. In cooperation with *Laponiatjuottjudus*, the Laponia world heritage management and Nils-Anders Pittsa siida, Unna tjerusj. The seminar also included coooperation with Váhtjera Sámi skuvla, Gávpi Gällivare. Gudrun Kuhmunen: chair of the Laponiatjuottjudus board, Helena Omma, Bernt Wennström: board members Laponiatjuottjudus. Åsa Blind, Váhtjera Sámi Skuvla, Nils-Erik Poidnakk, Gellivare Ren/ Gávpi Gällivare

Participants:

1. *Alfthan Björn, GridA, Norway*
2. *Degteva Anna, ICR, Russia*
3. *Gerasimova Alona, UEI, Russia*
4. *Iavtysaya Olga, Head of Obshina "Vy Tu" from NAO, Russia*
5. *Krarup Kia Hansen, UEI/ICR*
6. *Lebedev Anatoly, Sakha rep. Russia*

7. *Marfuslov Dmitry Sakha rep, Russia*
8. *Mathiesen Svein D., UEI/ICR*
9. *Omma Helena, ICR, Sweden*
10. *Pogodaev Alexander, Sakha rep. Russia*
11. *Pogodaev Mikhail, WRH*
12. *Sidorov Dzulustan Sakha rep, Russia*
13. *Turi Johan Mathis, WRH*
14. *Serotetto Nechey, Student from Yamal at Herzen University, Russia*
15. *Tibitchi Ksenia, Student from Yamal at Herzen University, Russia*

International Launch event for IPCC AR5 IPCC 5th Assessment, Working Group II, Polar Regions Chapter with the seminar: Arctic Indigenous Peoples and Climate Change: Real Impacts, Managing Change Guovdageaidnu/ Kautokeino, Norway - March 31st, 2014
 UEI have participated with director Anders Oskal and Dr Nancy G Maynard NASA and Miami University USA as authors of this report more than 70 participated in the event.

Future development of the project Arctic Indigenous Peoples' Culinary Institute Guovdageaidnu/ Kautokeino:

UArctic EALAT Institute will in future focus on the knowledge of the culinary culture of the indigenous peoples which is rich, diverse and very important to the indigenous societies in the circumpolar north, but is at the same time not well documented and not extensively put to use in local innovation and value creation. Historically, reindeer husbandry represents a model for sustainable use of the High North, based on knowledge accumulated through generations, conserved, developed and adapted to the climatic, political and economic systems that distinguish the region. From 1990 we have been developing a unique network of industry and knowledge in the circumpolar north. We want to develop an **“Arctic indigenous peoples' culinary institute”** as one project in *UArctic EALAT Institute*, with documentation, research, courses and higher education (Bachelor, Master and PhD), with the participation of indigenous young people in Russia and Norway, along with collaborating partners. ***The institute is going to be the best culinary institute in the fields of food, health, knowledge and value creation in the High North.***

Why the project is important: The indigenous communities in Norway, Sweden, Finland, Russia, China, Mongolia and North America are presently facing new major challenges and threats against a sustainable development. Future global socio-economic changes, combined with climate changes and industrial development, will continue to challenge the adaptability of the reindeer husbandry and the elasticity or resilience of the communities. If these changes are not addressed, they will impact land degradation, lead to loss of biological diversity and threatened species, as well as to socio-economic changes and will consequently threaten the economic and cultural well-being of reindeer husbandry professionals. With reindeer herding we mean economic foundation for reindeer herders societies. Increased knowledge about the food culture of the reindeer husbandry peoples in the High North is therefore a key issue as regards adapting to these changes and maintaining the communities. Documentation and research can - and must - be used to increase local value creation.

Vision – Focus on reindeer meat: The most important objective is increased value creation locally, based on the production of raw materials from the reindeer husbandry in the circumpolar north, based on the reindeer keepers' own traditional knowledge as well as on

contemporary research on nutrition, health and value creation. We want to develop methods and skills to improve the economy and at the same time maintain the resilience and sustainability in the reindeer husbandry's human couples ecosystems. We acknowledge that the traditional knowledge among the reindeer husbandry professionals is the foundation for a sustainable management of nature and we should ensure the reindeer keepers' access to and ownership of the most profitable parts of the value chain.

1. Becoming the best authority on knowledge tied to indigenous culinary cultures and value creation in the Arctic, which will turn Guovdageaidnu/Kautokeino into the hub of culinary culture in the High North.

2. To be a centre of knowledge and culinary experience aiming to become a draw for people who are interested in indigenous culinary culture and climate adaptation in the High North. The institute's documentation and research program will focus on the reindeer meat's unique nutrition content of proteins, fat, vitamins and antioxidants, how these are found in the raw materials, are preserved during conservation and are part of everyday cooking and how these impact culinary culture and health. A unique feature of this project is the combination of ICR's scientific network and partnership with top national and international universities, new methodologies for documentation, integration and application of traditional knowledge, and a livelihood-oriented grounding on the part of the reindeer husbandry communities, reindeer husbandry professionals and indigenous youth all over the Arctic. This gives a good foundation for innovation, in the intersection between academia and business, between science and traditional knowledge on food and culinary culture, between "modernity" and traditions. The institute is going to be linked to the on-going UNEP/GEF/Arctic Council project *Nomadic Herders*, chaired by ICR, as well as the Arctic Council project *EALLIN: Reindeer Herding Youth*, chaired by WRH and supported by the Foundation of Prince Albert II of Monaco.

Future Arctic Leaders: "Training Indigenous Leaders for New Arctic Challenges" UEI is currently making a report on how to develop a Bachelor program for reindeer herders youth which will fit the challenges future of managing their local communities with students from Russia and Norway.

Phd and master of science students educated as part of UArctic EALÁT Institute:

2014.

Phd students educated as part of UArctic EALÁT Institute and planned to defend their thesis in 2014. Ellen Inga Turi, "*Traditional knowledge, state and market steering in governance of reindeer pastoralism, cases from Western Finnmark Norway and Yamal Penninsula, Russia.*" Department of Geography and Economic History, Umeå University. Sweden.

2013

Tracie Curry Master of Science: “*Herding on thin Ice*”. Landscape Architecture, Harvard University, Boston, USA,

Alena Gerasimova Master of Science: “*Industrial Development and Impacts on Reindeer Husbandry: The case study in Russia (Iengra, Southern Yakutia) and Norway (Kautokeino, Finnmark County)*”. University of Versailles Saint-Quentin- en-Yvelines, Paris, France,

Marte Nilsen Master of Science: “*Ny kunnskap om metan utslipp fra rein og økt kompetanse lokalt i nordområdene*” (“*New knowledge on methane release from reindeer and increased local competence in the high-north*”). BFE, AAB, University of Tromsø, Norway.

2012

Inger Marie Gaup Eira, phd “*The Silent Language of Snow. Sámi traditional knowledge of snow in times of climate Change*”, “*Muohttaga jávohis giella. Sámi árbevirolaš máhttu muohttaga birra dálkkádatrievdanáiggis - Guovdageaidnu/Kautokeino* Phd thesis University of Tromsø.

Kirsti E Præsteng , phd *Genetic identification and ruminal dosing of cellulolytic bacteria to reindeer in search of a future probiotic*, ISBN 978-82-8266-040-2. PhD thesis University of Tromsø

Kia Krarup Hansen Master of Science *Methane emissions from reindeer. Do reindeer fed lichens emit less methane than reindeer on a pelleted feed diet?* UiT The Arctic University of Norway. Master thesis in Biology, University of Tromsø.

Rávdná Biret Márjá Eira. Master of Science “*Using Traditional Knowledge in Unpredictable Critical Events in Reindeer Husbandry, the Case of Sami reindeer husbandry in Western Finnmark, Norway and Nenets reindeer husbandry on Yamal Peninsula, Yamal-Nenets AO, Russia.*” August 2012 Master of Philosophy in Indigenous Studies, University of Tromsø.

Thibault Boucher Master of Science “*Changements globaux et Sâmes éleveurs de rennes, Kautokeino (Norvège) - Etude de cas de la Fiettar siida*” Paris Présenté MUSEUM NATIONAL D’HISTOIRE NATURELLE, Master Evolution, Patrimoine Naturel et Sociétés, Master 2 Spécialité, Environnement, Développement, Territoires et Sociétés 2011 – 2012.

UArctic EALÁT Institute Publications:

2014:

Nyman-Larsen, Joan, O. Anisimov, A. Constable, A. Hollowed, N. Maynard, P. Prestrud, T. Prowse, J. Stone, T. Callaghan, M. Carey, P. Convey, A. Derocher, P.T Fretwell, B.C Forbes, S. Glomsrød, D. Hodgson, E. Hofmann, G.K Hovelsrud, G.L Ljubicic, H. Loeng, E. Murphy, S. Nicol, A. Oskal, J.D Reist, P Trathan, B. Weinecke, F. Wrona, M. Ananicheva, F.S Chapin III, V. Kokorev (forthcoming 2014): “*Polar Chapter*”. In Chris Fields et. al: *Climate Change*

2014: *Impacts, Adaptation, and Vulnerability*. Intergovernmental Panel on Climate Change (IPCC) WGII AR5, 2014.

Glad T, Barboza P, Mackie RI, Wright A-D G, Brusetti L, Mathiesen SD, Sundset MA (2014) Dietary supplementation of usnic acid, an antimicrobial compound in lichens, does not affect rumen bacterial diversity or density in reindeer. *Current Microbiology* 68:724-728.

Burgess, P. *The reindeer is coming*: On March 31st, 2014, the International Centre for Reindeer Husbandry in collaboration with the Intergovernmental Panel on Climate Change (IPCC) held an outreach event to commemorate the release of the 5th Assessment of the IPCC. The meeting was opened with a new video by ICR that introduces some of the changes that herders are seeing in their pastures.

2013:

Mathiesen, S.D., B. Alftan, R.W. Corell, R.B.M. Eira, I.M.G. Eira, A. Degteva, K.I. Johnsen, A. Oskal, M. Roue, M.N.A. Sara, E.R.N. Skum, E.I. Turi and J.M. Turi (2013): "*Strategies to Enhance the Resilience of Sámi Reindeer Husbandry to Rapid Changes in the Arctic*". In *Arctic Council Arctic Resilience Report (ARR), Interim report to the Arctic Council Ministerial Meeting in Kiruna, 2013*. Stockholm Resilience Centre and Stockholm Environmental Institute, Sweden, 2013.

Oskal, A., M. Pogodaev, S.D. Mathiesen, J.M. Turi (2013): "*Traditional Knowledge-based Adaptation Strategies to Climate Change and Land Use Change in Circumpolar Reindeer Husbandry*". Poster presentation at Arctic Science Summit Week (ASSW) 2013. International Arctic Science Committee (IASC), Krakow, Poland, 2013.

Turi, E.I. (2013): "*Diversifying hegemonic social science: Traditional knowledge and indigenous epistemologies in social research on Sámi reindeer herding*". In *Social Science in Context: Historical, Sociological and Global Perspectives*, by R. Danell, A. Larsson and P. Wisselgren (Eds.) Nordic Academic Press, 2013.

Burgess, P. et al (2013): "*Keepers of the land*". Arctic Council Documentary Movie Deliverable, from the Arctic Council SDWG EALLIN Reindeer Herding Youth project. International Centre for Reindeer Husbandry and Association of World Reindeer Herders, 2013.

Degteva, A and Nellemann, C (2013): "*Nenets migration in the landscape: impacts of industrial development in Yamal peninsula, Russia*". *Pastoralism: Research, Policy and Practice* 2013, 3:15 <http://www.pastoralismjournal.com/content/3/1/15> p 1-21.

Vikhamar – Schuler, D. Hanssen-Bauer, Schuler, T., Mathiesen and Lehning M. (2013): "*Use of a multilayer snow model to assess grazing conditions for reindeer*". *Annals of Glaciology* 54(62) 2013, p. 212- 226.

Præsteng KE, Pope PB, Cann IKO, Mackie RI, Mathiesen SD, Folkow LP, Eijsink VGH, Sundset MA (2013) Probiotic dosing of *Ruminococcus flavefaciens* affects rumen

microbiome structure and function in reindeer. *Microbial Ecology* 66:840-849.

Corell, Robert W. (2013). Chair/ Lead Author: *Arctic Section of the 2013 UNEP Year Book*. United Nations Environmental Program (UNEP), Nairobi, Kenya, 2013.

Burgess, P. *Keepers of the Land – A new short Film ‘Keepers of the Land – Reindeer Herding, Biodiversity and Knowledge in the Arctic’*.

2012:

Naikanchina, A. et. al (2012): “*Study on loss of grazing land in circumpolar reindeer husbandry*”. UNPFII Special Report submitted by Special Rapporteur Anna Naikanchina. United Nations Permanent Forum on Indigenous Issues (UNPFII), Tenth Session, New York, 2012.

Johnsen K.I, B. Alfthan, P. Tsogtsaikan and S.D. Mathiesen, Eds. (2012): “*Changing Taiga: Challenges for Mongolia’s Reindeer Herders*”. Portraits of Transition No. 1. United Nations Environmental Programme (UNEP), GRID-Arendal, Norway, 2012. (Also a version in Mongolian language.)

Oskal A. and M. Pogodaev (2012): “*The Voice of Reindeer Herders into Action: Traditional Knowledge, Adaptation to Climate Change and Land Use Change in Circumpolar Reindeer Husbandry*”. Poster for the International Polar Year (IPY Conference, Montreal, Canada.

2011:

Hovelsrud G, I. Krupnik, J. White, W. Dallmann, S. Gearheard, V. Gofman, G. Kofinas, Y. Konstantinov, S.D. Mathiesen and A. Oskal (2011): “Human Based Observing Systems”, Ch. 3.10, IPY Observing Systems, Their Legacy and Data Management. (Contributing Author.) In *Krupnik, I., et al. (2011): Understanding Earth’s Polar Challenges: International Polar Year 2007–2008*. University of the Arctic/ CCI Press, Edmonton, Alberta, Canada and ICSU/WMO Joint Committee for International Polar Year 2007–2008.

Magga O.H, S.D. Mathiesen, R.W. Corell and A.Oskal (2011): “EALÁT – Reindeer Herding, Traditional Knowledge and Adaptation to Climate Change and Loss of Grazing Land”. Arctic Council SDWG EALÁT-Information Ministerial Report 2011, International Centre for Reindeer Husbandry and Association of World Reindeer Herders. International Centre for Reindeer Husbandry Report 1:2011 (*Editor.*)

Burgess P, S.D. Mathiesen, and A.Oskal (2011): “EALÁT – People and Reindeer in a Changing Climate”. Arctic Council SDWG EALÁT-Information Documentary Movie/ Ministerial Report 2011, International Centre for Reindeer Husbandry and Association of World Reindeer Herders. International Centre for Reindeer Husbandry, 2011 (*Editor.*)

Præsteng KE, Mackie RI, Cann IKO, Mathiesen SD, Sundset MA (2011) Variation in the 16S-23S rRNA gene internal transcribed spacer of fibrolytic *Butyrivibrio* isolates from the reindeer rumen. *Canadian Journal of Microbiology* 57:617-621.

Præsteng KE, Mackie RI, Cann IKO, Mathiesen SD, Sundset MA (2011) Development of 16S-23S rRNA internal transcribed spacer signature probes targeting a Ruminococcus flavefaciens from the reindeer rumen. Beneficial Microbes 2: 47-55.



International Centre for Reindeer Husbandry
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Riikkaidgaskasaš Boazodoalloguovddáš

