Annual report for SNS Centre of Advanced Research (CAR)

Submit the annual report to sns@slu.se by 24:00 CET, 1st of March at the latest. The report should not exceed 2000 words (including words in the template).

Please adjust the box size according to the length of your answer.

1. Project title: HealGenCAR
2. Reporting year: 2018

3. Project coordinator: Tuija Aronen
   Email: tuija.aronen@luke.fi
   Address: Natural Resources Institute Finland
            Finlandiantie 18, FI-58450 Punkaharju, Finland

Activities during the reporting year:

4. Project status
   a) Does the project develop according to the plans?
   b) Describe the activities during the reporting year.

a) HealGenCAR has developed in 2018 mainly according to the realization plan. The only exception was that the workshop on "OPCR and barcode assays" planned to be organized in Norway had to be cancelled due to lack of personnel resources at NIBIO to realize this event. The financing reserved for this workshop was transferred to support 2019 activities

b) In 2018, the second HealGenCAR conference "Clonal forestry and breeding for resistance to pests and pathogens" was held at Höör, Sweden, 12.-14. June, and based on the outcomes of the conference we wrote our second policy brief. Conference participants included not only researchers, but also representatives of forest industries and national authorities, as well as PhD students. The core group had three meetings, and allocated resources to applied activities that will take place in 2019. The HealGenCAR web-pages were updated. Scientific research on the field of HealGenCAR was active and produced many publications in 2018.

5. List the published outputs during the reporting year (peer-reviewed articles, other publications):

Selected peer-reviewed articles on HealGenCAR field:


Ahtikoski, Anssi; Haapanen, Matti; Hynynen, Jari; Karhu, Jouni; Kärkkäinen, Katri. 2018. Genetically improved reforestation stock provides simultaneous benefits for growers and a sawmill, a case study in Finland. Scandinavian Journal of Forest Research:


Early selection for resistance to Heterobasidion parviporum in Norway spruce is not likely to adversely affect growth and wood quality traits in late-age performance. European Journal of Forest Research 137: 517-525


Hytönen, Jyrki; Beuker, Egbert; Viherä-Aarnio, Anneli. 2018. Clonal variation in basic density, moisture content and heating value of wood, bark and branches in hybrid aspen. Silva Fennica 52 2: 15.


Kimberley, T Davis; Callaway, Ragan M.; Fajardo, Alex; Pauchard, Anibal; Nuñez, Martin A.; Brooker, Rob W.; Maxwell, Bruce D.; Dimarco, Romina D.; Peltzer, Duane A.; Mason, Bill; Ruotsalainen, Seppo; McIntosh, Anne C. S.; Pakeman, Robin J.; Smith, Alyssa Laney; Gundale, Michael J. 2018. Severity of impacts of an introduced species corresponds with regional eco-evolutionary experience. Ecography 42: 11.


Levkoev, Eino; Mehtätalo, Lauri; Luostarinen, Katri; Pullkinen, Pertti; Zhigunov, Anatoly; Peltola, Heli. 2018. Development of height growth and frost hardiness for one-year-old Norway spruce seedlings in greenhouse conditions in response to elevated temperature and atmospheric CO2 concentration. Silva Fennica 52 3: 15 p..

Marčiulyniene, D Davydenco, K Stenlid, J Shabunin D Cleary M. 2018. Fraxinus excelsior seed is not a probable introduction pathway for Hymenoscyphus fraxineus. Forest Pathology 10.1111/efp.12392

Mukrimin, Mukrimin; Kovalchuk, Andriy; Neves, Leandro Gomide; Jaber, Emad H. A.; Haapanen, Matti; Kirst, Matias; Asiegbu, Fred. 2018. Genome-Wide Exon-Capture Approach Identifies Genetic Variants of Norway Spruce Genes Associated With Susceptibility to Heterobasidion parviporum Infection. Frontiers in Plant Science:


Tikkinen, Mikko; Varis, Salla; Peltola, Heli; Aronen, Tuija. 2018. Improved germination conditions for Norway spruce somatic cotyledonary embryos increased survival and height growth of emblings. Trees: 1-16.


6. List other practical outputs during the reporting year (websites, policy recommendations, conferences, scientific meetings, large-scale project applications, research training etc.)

- Policy brief “How can we prepare Nordic forests for the future?” was prepared in 2018, and published 15.1.2019
- HealGenCAR web-pages were updated
- Outputs of the research work supported by HealGenCAR on ash dieback and emerald ash borer was presented at October 1-4, 2018 at the OECD, PREPSYS conference by H-P Rav.
- Financing for Tandem ForestValues SOMAGENO project (collaboration between Luke, Finland and SLU, Sweden, 2019-20) obtained from KSLA, Sweden; application greatly benefited connections made and strengthened via HealGenCAR. Further more, international collaboration on vegetative propagation of conifers via somatic embryogenesis was also extended on European level, with both Luke and SLU research groups being involved in ERA-NET Forest Value project MULTIFOREVER (coord. by FCBA, France, 2019-2021) that also obtained financing.

**Economic report**

7. Received grant from SNS for the reporting year (SEK):

450 000,00

**8. Transfer of SNS funds to project partners**

<table>
<thead>
<tr>
<th>Country</th>
<th>Partner organization</th>
<th>Sum (SEK)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denmark</td>
<td>University of Copenhagen</td>
<td>31 680,00</td>
</tr>
<tr>
<td>Finland</td>
<td>Luke</td>
<td>179 769,00</td>
</tr>
<tr>
<td>Sweden</td>
<td>Skogforsk</td>
<td>103 952,64</td>
</tr>
<tr>
<td>Sweden</td>
<td>SLU</td>
<td>24 055,68</td>
</tr>
<tr>
<td>Norway</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iceland</td>
<td>Skogreakt</td>
<td>2 840,64</td>
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<td>---------</td>
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<td>---------</td>
</tr>
<tr>
<td>Other (specify) countries</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total SUM</td>
<td></td>
<td>342 297,96</td>
</tr>
</tbody>
</table>

9. Costs

<table>
<thead>
<tr>
<th></th>
<th>SNS funding</th>
<th>External funds*</th>
<th>Total*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Travel and hotel</td>
<td>43 813,86</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meeting costs</td>
<td>154 714,67</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consumables</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salary</td>
<td>131 494,18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communication</td>
<td>10 560,00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other costs (national coordination costs)</td>
<td>21 120,00</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total SUM (SEK)</strong></td>
<td><strong>361 702,71</strong></td>
<td><strong>131 541 000</strong></td>
<td><strong>131 902 700</strong></td>
</tr>
</tbody>
</table>

* If possible, provide details otherwise summarize the total sum for external funds and total.

Optional: Comments to the economic overview:

Exchange rate used 1 EUR = 10,56 SEK. This is the exchange rate for the received grant.

External funds are partly estimated, since data was available only for Sweden and Finland. For the same reason, details could not be provided.

In addition to the payments to the partners (point 8) payments of travel expenses were made to one invited keynote speaker of the Höör conference (Irene Barnes, South Africa, 11 602,68 SEK) and to three participating students: Jing Xu 4 581,67 SEK, Rajiv Chaudhary 2 125,09 SEK and Hernan Davio Capador-Barreto 1 095,49 SEK.

From the grant received from SNS, around 88 000 SEK was saved, mainly due to cancelled workshop in Norway and some bills that were not received by the end of the year 2018. This sum, as well as savings from the previous year, will be used for HealGenCAR activities in 2019-20.
I hereby declare that the above statements are true to the best of my knowledge

Main applicant's signature, place and date

[Signature]
Tuija Aroinen
Natural Resources Institute Finland
(Institution)
26.2.2019
(Day / Month / Year)

Signature of the head of the main applicant's research institution

[Signature]
Leena Paavilainen, Vice President
(Printed name, function)
Natural Resources Institute Finland
(Institution)
26.2.2019
(Day / Month / Year)

Second applicant's signature, place and date

[Signature]
(Institution)
(Day / Month / Year)

Third applicant's signature, place and date

[Signature]
(Institution)
(Day / Month / Year)
I hereby declare that the above statements are true to the best of my knowledge

Main applicant's signature, place and date

................................................................. Natural Resources Institute Finland (Institution) ................................................................. (Day / Month / Year)

Tuija Aronen

Signature of the head of the main applicant's research institution

................................................................. Natural Resources Institute Finland (Institution) ................................................................. (Day / Month / Year)

(Signature)

Leena Paavilainen, Head of Unit "Production Systems" (Printed name, function)

Second applicant's signature, place and date

(Signature)  

Tommie Persson  Shagfordsh  26/02/2019  

(institution)  

(Date / Month / Year)

Third applicant's signature, place and date

................................................................. (Signature) ................................................................. (Institution) ................................................................. (Day / Month / Year)
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---------------------------------------------------------- Natural Resources Institute Finland (Institution)  (Day / Month / Year)
Tuija Aronen

Signature of the head of the main applicant's research institution

---------------------------------------------------------- Natural Resources Institute Finland (Institution)  (Day / Month / Year)
(Signature)

Leena Paavalainen, Head of Unit "Production Systems" (Printed name, function)

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..............................................................  Natural Resources Institute Finland
Tulja Aronen  (Institution)  ................................................

(Day / Month / Year)

Signature of the head of the main applicant's research institution

..............................................................  Natural Resources Institute Finland
(Signature)  (Institution)  ................................................

(Day / Month / Year)

Leena Paavilainen, Head of Unit "Production Systems"
(Printed name, function)

Second applicant's signature, place and date

..............................................................  Norwegian Institute of Bioeconomy Research
Igor Yakovlev  (Institution)  ................................................

26.02.2019...  (Day / Month / Year)

Third applicant's signature, place and date

..............................................................  ..............................................................
(Signature)  (Institution)  ................................................

(Day / Month / Year)
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Tulja Aronen                                                           (Institution)                                                          (Day / Month / Year)

Signature of the head of the main applicant’s research institution

..........................................................  Natural Resources Institute Finland ..........................................................
(Signature)                                                           (Institution)                                                          (Day / Month / Year)

Leena Paavilainen, Head of Unit “Production Systems”
(Printed name, function)

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..........................................................  ..........................................................
(Signature)                                                           (Institution)                                                          (Day / Month / Year)

Third applicant’s signature, place and date

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(Signature)                                                           (Institution)                                                          (Day / Month / Year)

Leer R. Nielsen—University of Copenhagen 27/2/2019
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............................................................  Natural Resources Institute Finland
(Tulja Aronen)                                 (Institution)
...........................................................................................................
(Day / Month / Year)

Signature of the head of the main applicant’s research institution

............................................................  Natural Resources Institute Finland
(Signature)                                  (Institution)
...........................................................................................................
(Day / Month / Year)

Leena Paavilainen, Vice President
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Third applicant’s signature, place and date

(Signature)  (Institution)  (Day / Month / Year)