



norden

Nordic Forest Research  
Co-operation Committee (SNS)

Send the report to SNS-secretary Katrine Hahn Kristensen ([hahn@life.ku.dk](mailto:hahn@life.ku.dk))

## FINAL REPORT for CAR

Please notice that the size of text sections in the form can be adjusted if needed.  
The length of the final report should not exceed 3 pages. **Supplementary information can be attached**

1. CAR title	GENECAR (Centre for Advanced Research in Forest Genetics and Tree Breeding)
2. CAR coordinator (name, address, telephone, e-mail)	Tor Myking Norwegian Forest and Landscape Institute Fanaflaten 4 5244 Fana Norway Telephone: +47 55 11 62 29 Email: <a href="mailto:tor.myking@skogoglandskap.no">tor.myking@skogoglandskap.no</a>
3. Duration	2005-2010 Initially, the period was 2005-2009, but it was extended one year.
4. Cost	SNS-funding:                      Other funding:  NOK 2 588 205
5. The purpose of the CAR / main problems / hypotheses addressed	The overall purpose of GENECAR was to join forces in genetic research and tree breeding at the Nordic level. The specific objectives were to promote and coordinate collaboration among Nordic forest geneticists and tree breeders, make Nordic forest genetic research and tree breeding more cost efficient, be of technical and scientific excellence, develop and conduct advanced forest genetic research projects, be a competitive research network in Europe, and disseminate research results to different end users and stakeholders in the Nordic countries.
6. Brief description of the network and research plan and of possible larger deviations from the plan	GENECAR was chaired by a coordinating core group with one representative from each member country. The backbone of GENECAR was four thematic projects, for which the individual countries had specific responsibility - 1) The genetics of climatic adaptation of boreal forest trees (Norway), 2) Successful breeding of boreal forest trees (Sweden), 3) Gene research and biotechnology (Finland), and 4) Conservation genetics of Nordic tree and woody plants (Denmark). The basic idea was to highlight the prioritised areas in workshops and conferences organised by GENECAR, and to connect these activities to research projects in the individual Nordic countries. The Nordic network was expanded and maintained by a mailing list including names of about 90 researchers, predominantly in the Nordic countries, but also elsewhere in Europe and USA/Canada.

7. Results (max 2 pages)

**Results according to aims:**

**Promote and coordinate collaboration among Nordic forest geneticists and tree breeders:**

Conferences have been organised on genetic research and tree breeding (Umeå 2007, Ekebo 2009), on conservation of scattered trees and shrubs (Sorø 2008), and on vegetative propagation of conifers (Punkaharju 2008). Several distinguished researchers were invited as keynote speakers, and the arrangements succeeded to highlight these important issues, disseminate state-of-the-art knowledge and generate research ideas. These conferences have been the most important platform to initiate collaboration at the Nordic level.

GENECAR and PATHCAR organised a joint workshop in 2008 to identify joint research areas. In particular, the ash dieback and the Dutch elm disease were discussed. A joint Nordic project *Fraxinus* die-back was developed and supported by SNS. Also, as a direct spin-off from this work, a COST action was developed and approved co-ordinated from Sweden. Several projects based on national funding have benefited from the Nordic cooperation. GENECAR core members were also involved in TREEBREDEX, which ensured collaboration between the Nordic and European breeding initiatives.

**Make Nordic forest genetic research and tree breeding more cost efficient:**

Avoidance of duplicate work is essential for cost efficiency. A GENECAR survey made by the core group in 2008 showed that the amount of overlap between Nordic research groups in tree breeding/ genetics was limited.

There were plans for 2009 to look at the possibilities for joint breeding of Norway spruce in Finland, Sweden and Norway. In 2010 a NMR pilot project was granted for this purpose (Tore Skrøppa, NordGen and Norwegian Forest and Landscape Institute, project leader), and in 2011 a Norwegian research group got a project (Research Council grant) with partners from Skogforsk, Sweden (and UBC, Canada) on balancing genetic gain and genetic diversity in Norway spruce breeding. In relation to *Fraxinus*, exchange of healthy clones will also be discussed. Thus, ideas on collaboration conceived by GENECAR have been influential also after GENECAR terminated. Efficiency has also increased as a consequence of mutual training (e.g. lab techniques).

**Be of technical and scientific excellence:**

The best way to promote technical and scientific excellence is to jointly develop competitive research proposals, distribute research according to competence, and kindly share techniques and skills cross borders. GENECAR has greatly facilitated these activities.

**Develop and conduct advanced forest genetic research projects:**

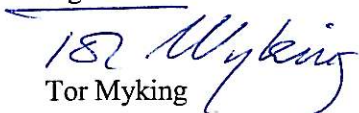
A significant part of the GENECAR fund has been allocated to short scientific missions for Nordic researchers to stimulate research and scientific contact. Grants have also been given to prepare applications.

**Be a competitive research network in Europe:**

GENECAR has been important for development of proposals for the ERA-Network (Woven) and EC (NOVELTREE), that were both supported.

**Disseminate research results to different end users and stakeholders in the Nordic countries:**

The target groups for conferences, workshops and meetings organised and/or financed by GENECAR have been primarily researchers, secondly stakeholders (forest associations, breeding organisations). Similarly, the GENECAR webpage has been predominantly intended for the scientific community. However, it is beyond any doubt that progress in tree breeding communicated

	during meetings has reached end uses, although we can admit that this connection could have been stronger.
8. What advantages have been gained by the Nordic collaboration	Better overview of research directions and competences, improved collaboration, development of joint research proposals, and cost efficient Nordic research on tree breeding and genetics.
9. Publications and other communication activities (International scientific peer reviewed journals, other scientific publications, short communications, web etc.)	<p>Web-pages (<a href="http://www.nordicgenecar.org/">http://www.nordicgenecar.org/</a>) were launched and used for disseminating information on the aims and activities of GENE CAR.</p> <p>Similarly, abstracts and reports from the conferences and meetings organised or supported by GENE CAR (e.g. Söro, Punkaharju, Umeå, Helsinki, Örenäs e.g. <a href="http://www.nordicgenecar.org/documents/DocumentationGENECAR-meeting2009Orenasslott.pdf">http://www.nordicgenecar.org/documents/DocumentationGENECAR-meeting2009Orenasslott.pdf</a>) were also published on the GENE CAR web site. A policy brief for GENE CAR was also prepared for the SNS web page.</p> <p>Communication was also maintained by our mailing list (see above), e.g. for announcing our arrangements.</p> <p>Numerous scientific papers have been published based on projects initiated by, or otherwise supported by GENE CAR (e.g. travel grants).</p>
10. CAR summary (about 1/3 page) for possible use in the News & Views section of Scandinavian Journal of Forest Research	The overall purpose of GENE CAR was to form a joint platform for genetic research and tree breeding at the Nordic level, briefly by promoting research collaboration, developing research networks and effectively disseminate research results to end users and stakeholders in the Nordic countries. Despite a slow start, the workshops/conferences of GENE CAR greatly contributed to exchange of scientific information, which in turn generated several Nordic proposals and projects, also at the European level. Many researchers have taken the advantage of research grants for short scientific missions and for development of proposals, and GENE CAR has also co-financed meetings and actively collaborated with TREEBREED EX, the European counterpart in tree breeding. All in all, GENE CAR has been an important mechanism for improving research in tree breeding and genetics at the Nordic level, but more resources should have been invested in communicating the results to end users.
11. Date and signature	<p>Date: 09.02.2012</p> <p>Signature of CAR coordinator:    Tor Myking</p>