Attachment 1

Evaluation of NOLTFOX (a Nordic database for long-term experiments)

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SNS:s request

In May 2003 an external evaluation team got the request from SNS (SamNordisk skogsforskning) to make an external evaluation of NOLTFOX (**NO**rdic Database for **L**ong-**T**erm **FO**rest e**X**periments). The evaluation team has consisted of: Professor Kåre Hobbelstad, NIJOS, Norway (chairman), professor Leena Finér, University of Joensuu, Finland and professor Göran Örlander, Växjö University, Sweden.

The evaluation group was asked by SNS to address the following issues:

- Has NOLTFOX promoted financial support of high quality field experiments in the Nordic countries – or has it a potential for that?
- Has it increased the awareness of existing research, experiments and facilities?
- Will it increase the common understanding of the need for integrated studies and avoidance of duplication of activities, both within and between countries?
- Will it increase the evaluation and publication from old experiments across national as well as disciplinary borders for better resource utilisation?
- Vision for NOLTFOX and recommendations for the further development of NOLTFOX covering the period 2004-2006.

Meetings and material

Göran Örlander attended a meeting with the Nordic coordination group of NOLTFOX in Skagen, Denmark in 28-29 May 2003, where the project was presented. The evaluation group had a meeting in Ås, Norway 1- 2 September 2003.

The following written material was provided from the Nordic coordination group:

- NOLTFOX, Nordic database for long-term forest experiments, SNS-M2000-10, Final report June 2001.
- Report of NOLTFOX phase II, October 2002, SNS-project M2000-10.

- Minutes of the NOLTFOX meeting in Denmark.
- Brochure "Nordic database for long-term experiments"

- Web-site http:\noltfox.metla.fi

- Summaries of the presentations at Skagen:
  - Background
  - Noltfox today
  - Updating and organization of data
  - Advertising activity
  - Technical description and usage statistics
  - Interest for NOLTFOX from scientists and others
  - Suggestion for future development.

Background

The background of the project is given in reports to SNS and we refer to these reports for a more detailed description.

In June 1999 the board of SNS asked the main organizations dealing with long-term forest experiments in the Nordic countries to participate in a work with the main objectives to:

- Examine the possibilities of establishing a comprehensive, uniform and easily accessible documentation of existing forest field experiments in the Nordic countries.

- Examine how national databases can communicate with one another, including technical measures required.

- Describe how a mutual classification of the experiments, with keywords, can be achieved.

A Nordic coordinating group was formed which at present has the following members:
Gudmundur Halldorsson, Iceland Forest Research, Iceland
Henrik von Hofsten, SkogForsk, Sweden
Kristian Karlsson, Metla, Finland
Petter Nilsen, Skogforsk, Norway (project co-ordinator)
Jukka Pöntinen, Metla, Finland (database and website responsible)
Jens Peter Skovsgaard, FSL, Denmark
Fredrika von Sydow, SLU, Sweden

In short the work has resulted in a Web-based database with more than 10.000 long-term experiments. The Web-site is managed by Metla, Finland, and can be found at the website: http:\\noltfox.metla.fi.

General comments of NOLTFOX

In the following some general comments about NOLTFOX is given by the evaluation team. They are grouped in positive comments and notes:

Positive comments

- NOLTFOX is well organized and has a good structure. It is easy to use and has an appealing design. It is a unique database covering all Nordic countries. The synchronous presentation of maps and lists is a nice way to present the experiments.

- The work by the coordination group seems to have been done in an enthusiastic way. This has certainly improved the awareness of long-term experiments in the Nordic countries.

- The data structure (description of experiments, location and contact information) is clear and logical.

- The group has consulted forest scientists to make a user-friendly structure for the description of the experiments.

- Updating and organization of data is flexible and it is easy for all participants to produce their own data that is included in NOLTFOX.

- The participating organizations have actively taken part in the development of the system, and thereby they have supported NOLTFOX. Even though the economical input of the participants is not accounted for, it is probably considerable amounts.

- Harmonisation of data between the countries and organizations has been a problem, but the work with NOLTFOX has improved this substantially.

- The advertising of NOLTFOX has been made in a satisfactory way. This includes production of brochures, e-mail advertising, presentation at conferences, etc.

- It is possible to get usage statistics of the database.

Notes

- There seem to be a lack of "users perspective" in the project. Who is using the system? Did they find what they expected? In which way did they use the information they got?

- The information that a user gets from an experiment is probably in most cases not sufficient. If you are not familiar with the experiment, it is hard to find out from the classification and keywords what the experiment really is about. This could be improved by adding more information, e.g. by linking published material from the experiment to the database. Another way would be to add a summary to each experiment, but this might be an unrealistic large job.

- You need to be familiar with the whole structure of the database to find the contact information. We believe that most users that have found interesting experiments would end up by having problems to find the contact information.

- Many users are looking for experiments in their neighbourhood. This is rather complicated in the present system. It would be easier if it was possible to search directly on the map and there would be a link between the map and the description.

- It is unclear what is meant with the term "long-term" in the database, and also with the term "experiments". This makes the extent of the database somewhat unclear for the user. Old growth and yield plots are included in the database even if they do not include different treatments or replications. On the other hand modern "monitoring" plots are not. If it is a long-term experiment or not seem to vary between the countries, and varies from >5 or >10 years duration.

- Classifications of priorities are different between the participants, or they are lacking. The database would be improved if this could be harmonised.

- Data is lacking in many descriptions of experiments. Moreover, it is unclear how missing data is presented ("0", "-", " ").

Has NOLTFOX promoted financial support of high quality field experiments in the Nordic countries – or has it potential for that?

The evaluation team has so far no information of any financial effect of the database. The reason for this is that the database is quite new, and the evaluation team does not know any established practice for how to use it in application for funding. Some additional improvements that is stated elsewhere, might also make it easier to get the wanted information from the database. The evaluation team has also the feeling that even so the database has been advertised considerably, it is important to further advertise the database.

We are, however, highly convinced that the database has a great potential to promote financial support of high quality experiments in Nordic countries because it will stimulate cooperation between countries and organizations. This will lead to:

- New possibilities for funding.

- Better experiments through more relevant problem formulations and better experimental designs.

Has it increased the awareness of existing research, experiments and facilities?

Statistics over visitors on the NOLTFOX website show that the average visitor stays longer than on ordinary sites, and 78 visits were attached more than 15 minutes from January to April 2003. This indicates that the visitors are serious visitors, and that the database has a potential for being actively used. The database contributes to better information of existing experiments not only to research scientists, but will also be an important source of knowledge for students and others interested in forests. This will increase the awareness for existing research, experiments and facilities by:

- Better knowledge of existing experiments
- Stimulate to contacts between research scientists and between scientists and others interested in forest.

Will it increase the common understanding of the need for integrated studies and avoidance for duplication of activities, both within and between countries?

Even so, in our opinion, there are good contacts between researchers in the Nordic countries, the interest will mainly be on ongoing projects. The database will, however, also give information on historical experiments. This will increase the common understanding for integrated studies because it will:

- Stimulate contacts directed to selected problem areas.
- Lead to awareness of earlier experiments within the field.
- Avoid duplication of earlier experiments.
- Increase use of earlier experiments in evaluation of new results.

Will it increase the evaluation and publication from old experiments across national as well as disciplinary borders for better resource utilization?

For reasons mentioned earlier the evaluation team is convinced that the database will increase the evaluation and publication from old experiments. We however stress that there is room for improvements that we will mentioned under future developments. Here we will point out:

- Earlier publications should be linked to the experiments.
- Accessibility to data should be announced in the database.
- Contact addresses should be linked to the database (contact person, telephone number, e-mail)

Vision for NOLTFOX and recommendations for the further development of NOLTFOX covering the period 2004-2006

The evaluation team has a common understanding that in the future NOLTFOX can be a high quality tool:

- For increasing awareness of existing research, experiments and facilities in the Nordic boreal forests.
- It can reduce the use of resources by concentrating the activities on high quality field experiments.
- It can stimulate Nordic cooperation as well as cooperation between the different organizations within countries.
- It promotes effective use of existing experimental data.

The evaluation team has the following recommendations for the further development of NOLTFOX.

Contents of NOLTFOX

- It would help the users if the term experiment is defined in the database. The inclusion of the monitoring experiments would be an advantage for the users of the database.
- The usage of the database and the contacts between scientist and users would improve by adding a link from each experiment to easily accessible literature, which is published. No limits should be put on the age of the referred literature.
- The data collected from the experimental sites is poorly accessible. That could improve if there was an option to link the experimental data into the database. That would make it possible for organizations to link original data to the database if they have resources to do that.
- For the actual use of the experiments the user needs to get more information about the experiment that is and can be included in the database. The users of the database would find that easier if there was a link to the contact person of the organization from each experiment page.
- Users might need to find experiments from certain area. That would be easier if there is a link from the map to the experiment page i.e. by clicking a point on the map the experiment page would open.
- A free search option would open new possibilities to use the database.

- A special emphasis could be put on the quality, completeness and updating of the data. The responsibility of this is carried by the participating organizations, which need to develop also other systems to be able to improve the information in the database.

- Links to the similar or related websites would be good service for the users.

Participation

- Forest ecosystems in the Baltic countries are in many respects similar to those in other the Nordic countries. Due to the former history the contacts to the Baltic countries have been limited as well as the awareness of their research and experiments. To improve that it is highly recommended that participants from the Baltic countries were invited to join the NOLTFOX co-ordination group.

- There are experiments managed by other organizations (e.g. Universities of Helsinki and Joensuu) than the ones who have put data in the database. It would be useful to invite also them to the development of NOLTFOX.

Usage of NOLTFOX

- So far no users surveys have been carried out, except for looking at the statistics on the visits of the webpages. For the further development and service of the users, it is significant to know who are using the database, what are their needs, how NOLTFOX satisfies them and what recommendations they have for further development. One way to make a user survey would be to establish a link to a user questionnaire from the website.

- The usage of the database can be increased by regular, systematic advertising as could be seen after the advertising campaign carried out by the co-ordination group in 2002. The users of the database have mainly been scientists, but there are also other potential user groups as teachers, practical foresters and administrators. The evaluation team recommends that a long-term advertising plan should be made.

Financing and administration of NOLTFOX

- NOLTFOX has got core funding for its development from SNS and also the participating countries are partially funding the project. The data are owned by the actual organizations providing it. The data inside the database is jointly owned by the participating organizations. The website is created, maintained and owned by METLA. This financial and administrative set-up has worked during the developmental stage of the database. For the future an official agreement on the maintenance administration and financing of NOLTFOX is needed.

- The development of the NOLTFOX could continue on project basis and SNS participation on the funding is recommended.

Månad	Unika besökare	Antal besök	Sidor	Träffar	Byte
Jan 2004	136	206	880	3865	19.91 MB
Feb 2004	164	239	1319	4867	28.79 MB
Mar 2004	149	254	1715	5021	37.50 MB
Apr 2004	142	235	1464	4381	24.96 MB
Maj 2004	114	237	903	2640	30.67 MB
Jun 2004	131	293	1167	2889	52.94 MB
Jul 2004	95	219	718	1559	30.59 MB
Aug 2004	112	274	947	2360	49.40 MB
Sep 2004	140	297	1975	5807	52.80 MB
Okt 2004	171	277	1417	4122	43.11 MB
Nov 2004	205	327	1491	4654	45.19 MB
Dec 2004	183	309	1714	4865	57.10 MB
Totalt	1742	3167	15710	47030	472.95 MB

Månad	Unika besökare	Antal besök	Sidor	Träffar	Byte
Jan 2005	192	306	1668	4121	44.97 MB
Feb 2005	175	281	1614	4618	42.58 MB
Mar 2005	197	290	2575	6931	48.82 MB
Apr 2005	207	323	1481	4084	47.65 MB
Maj 2005	194	366	2197	5741	59.86 MB
Jun 2005	190	347	1984	5347	54.20 MB
Jul 2005	138	218	511	1788	22.62 MB
Aug 2005	156	295	1399	4146	42.28 MB
Sep 2005	204	323	1292	4320	36.23 MB
Okt 2005	236	395	2308	7493	64.98 MB
Nov 2005	242	376	3145	8550	62.14 MB
Dec 2005	157	293	2368	5652	51.19 MB
Totalt	2288	3813	22542	62791	577.53 MB

Månad	Unika besökare	Antal besök	Sidor	Träffar	Byte
Jan 2006	174	360	3014	7316	59.95 MB
Feb 2006	260	487	2445	7997	80.55 MB
Mar 2006	209	431	2213	5670	58.23 MB
Apr 2006	160	311	1176	3378	36.09 MB
Maj 2006	160	350	1877	5756	48.48 MB
Jun 2006	164	289	1078	3492	40.12 MB
Jul 2006	148	322	1270	2941	32.33 MB
Aug 2006	194	382	1616	4102	52.94 MB
Sep 2006	205	364	3415	5991	67.14 MB
Okt 2006	268	461	1841	4821	55.08 MB
Nov 2006	307	514	3103	6801	78.59 MB
Dec 2006	231	410	1495	4672	50.87 MB
Totalt	2480	4681	24543	64937	660.37 MB