Lösningar för snabbare utveckling av skogsbilvägar

“Solutions for faster development of forest roads”

Dina Kuttah/VTI

INFRA SWEDEN 2030

Med stöd från
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Energimyndigheten
FORMAS
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Project partners, cost and start and end dates

Start date 31 May 2021

End date 31 May 2024

Total cost of the project (SEK): 4 605 000

Funding from Infra-Sweden (SEK): 2 300 000

Co-funding(SEK): 2 305 000

Organization	Name	Role of organization/company	Expertise and contribution to the project	Gender equality
VTI	Dina Kuttah	Project coordinator	Senior researcher/ Project manager	Women 50%
	Håkan Arvidsson		Road material laboratory manager/research engineer	Men 50%
Skogforsk	Mikael Bergqvist	Project partner	Researcher	Men ≈ 33%
	Malin Juter		Communicator /Works with guidance and instructions	Women ≈ 66%
	Victoria Forsmark		Researcher / helps with field work	
Trafikverket, Enskilda vägar	Emil Svedin	Demand owner /Reference group/ financier and project partner	Investigator privet roads	Men 100%
Holmen Skog AB	Nils Anders Olsson	Demand owner from industry/ financier and project partner	Road manager	Men 50%
	Caroline Hjorth		Logistics	Women 50%
Kopparfors skogar AB	Anders Norlin	Demand owner from industry/ financier and project partner	Work manager	Men 50%
	Jeanette Sandgren		District manager	Women 50%
SCA Skog AB	Tomas Johansson	Demand owner from industry/ co-financier and project partner	Business developer roads and production	Men 100%
Stora EnsoSkog AB	Mikael Hindrikes	Demand owner from industry/ financier and project partner	Strategic road manager	Men ≈ 66%
	Staffan Ludewig		Road expert	
	Evelina Hultgren		Road manager (for the region where the test road will be built)	Women ≈ 33%
Sveaskog AB	Torsten Wiborgh	Demand owner from industry/ financier and project partner	Construction / Road expert	Men 50%
	Linda Svedberg		Road manager	Women 50%
Riksförbundet Enskilda Vägar	Bengt Johansson	Demand owner /Reference group/ financier and project partner	Road engineer	Men 50%
	Anki Segerljung		Advisor	Women 50%
Södra Skogsägarna Ekonomiska förening	Joel Persson	Demand owner /Reference group/ financier and project partner	Transport developer and manager/ Operations expert	Men 50%
	Anna Wallner		Project Manager Development of ground technology	Women 50%
Skogsstyrelsen	Stefan Gunnarsson	Demand owner /Reference group/ financier and project partner	Road Specialist	Men 50%
	Ewy Nymark		water specialist/ Environmental resource	Women 50%

Challenges and suggested actions

- The forest roads in Sweden are suffering from frequent rain and freeze-thaw problems, insufficient drainage, high gross weight of trucks and even more frequent use due to an increasing demand on forest products.
- The problem is that the Swedish forest roads are still built with low bearing capacity requirement based on old design guidelines. Therefore, many of these roads, even the new ones, can neither withstand the heavy gross weight of trucks, the climate challenges nor such an increase in the annual average daily traffic.
- Under Corona pandemic, forest products continue to support the society by delivering essential items like, hygiene and sanitary products, biomass, in addition to many other wood products. This put further demands on transportation of these products through forest roads which already suffering from bad conditions and limited accessibilities.

The purpose of the project

The project aims to develop the forest roads in Sweden to promote fluent transport of forest raw materials even during critical climate conditions and under high gross weight of trucks.

Photo, Aron Davidsson

The project’s three most important expected benefits

- Increasing the bearing capacity of forest roads (via new technologies for stabilization, drainage and material selection) and using new practical equipment when assessing the condition of new and existing forest roads, especially during freeze-thaw periods.
- The social benefit of developing the Swedish forest roads can be quantified through increased accessibility and reduced operating costs by constructing more durable roads adapted to new traffic and climate challenges.
- If more forest roads will be developed to withstand the heavy gross weight of trucks (i.e. 64 and 74 tones), this will reduce carbon dioxide emissions as a lower number of trucks will be required to transport the same volume of forest products and herby reduce the climate impact of transport infrastructure.

How and when the project will be implemented - time and activity plan

Arbetspaket (AP) nr 1	Research compilation
Start- och slutdatum	May 2021 - May 2022
Ansvarig projektpart	VTI
Övriga projektparter	All
Beskrivning av innehåll	To identify and compile research on innovative forest road design, its tools, stabilization, drainage, materials, standards, nationally and municipally. Adaptations of forest roads to heavy rain and heavy vehicles, especially the new solutions from the USA, Canada, and Australia are determined to be of interest. Issues will include all the functions of the forest roads such as traffic volume, design, accessibility, drainage, forest roads maintenance will be delt with in this work package.
Metod för berörda parters samverkan	VTI will be responsible for identifying and recommending solutions dealing with available standards, materials, stabilization methods, drainage control alternatives. This will be done through discussion with all the forestry representatives in the project.
Leverans	May 2022

Arbetspaket (AP) nr 2	Analysis and selection of best practice, innovations and technologies
Start- och slutdatum	June 2022 - June 2023
Ansvarig projektpart	VTI
Övriga projektparter	All
Beskrivning av innehåll	To have good stable forest roads in Sweden, different solutions need to be tested for the influence of traffic and climate factors to optimize the societal benefits.
Metod för berörda parters samverkan	Intensive investigations at VTI laboratories will be carried out for a variety of modern technologies, to be selected from AP1, that will be tested for their effectiveness to increase the bearing capacity of local materials usually used in constructing the Swedish forest roads. This will be done through discussion with all the forestry representatives in the project.
Leverans	June 2023

How and when the project will be implemented - time and activity plan

Arbetspaket (AP) nr 3	Construction and testing of large-scale pilot roads
Start- och slutdatum	June 2023 - November 2023
Ansvarig projektpart	Skogforsk
Övriga projektparter	All
Beskrivning av innehåll	Selected methods and materials in AP1 and AP2 will be adopted in real scale by constructing pilot forest roads using the chosen new technologies.
Metod för berörda parters samverkan	The five pilot forest roads will be constructed in five chosen forests owned by each forest road construction partner. VTI will carry out field investigation on each constructed road directly after construction. Road construction, including machines and materials, cost for construction, planning and labor waiting time during the in-situ road assessment by VTI will be funded by the construction companies themselves. Skogforsk will coordinate between the construction companies and the in-situ road tests to be carried out by VTI.
Leverans	November 2023

Arbetspaket (AP) nr 4	Economical and practical use assessment of the tested solutions
Start- och slutdatum	September 2023 - March 2024
Ansvarig projektpart	Skogforsk
Övriga projektparter	All
Beskrivning av innehåll	Economical evaluation of the various measures / products, feedbacks about the applicability of the results for forestry industry.
Metod för berörda parters samverkan	Skogforsk will carry out the main part of this work package. This will be done through discussion with all the forestry representatives in the project and VTI.
Leverans	March 2024

How and when the project will be implemented - time and activity plan

Arbetspaket (AP) nr 5	Following up and validation of the pilot roads after construction
Start- och slutdatum	September 2023-March 2024
Ansvarig projektpart	VTI
Övriga projektparter	All
Beskrivning av innehåll	This work package includes the following up and validation of the five constructed pilot roads (constructed within the activity of AP 3) after few months of opening the roads to traffic.
Metod för berörda parters samverkan	VTI has a wide variety of equipment that can be used in following up and validating the performance of the constructed forest roads after opening them to traffic. The measurements aim to determine the condition of the road surface such as the structural condition of the road in terms of stability and durability.
Leverans	March 2024

Arbetspaket (AP) nr 6	Documentation and results dissemination
Start- och slutdatum	January 2023-May 2024
Ansvarig projektpart	VTI
Övriga projektparter	All
Beskrivning av innehåll	Documentation and publishing of the results.
Metod för berörda parters samverkan	The results of the work packages 1 to 5 will be published officially as reports or as articles in international journals. Furthermore, a final workshop will be held between the partners, stakeholders and interested partner to discuss the outcomes of the project the future implementation of the selected technologies in larger scale by the forest roads construction companies.
Leverans	May 2024

Questions to the participants

- How many participants from the forest industries/ sector are with us today?
- Many drivers encounter problems when they leave a paved surface for a gravel one. Have you faced such a problem during driving on gravel roads?
- Your expectations of the project and existing challenges in your opinion.
- What thoughts and ideas do you get when you listen? Are there any lessons from your projects that we can benefit from in ours?