

# SIMANF{}R

## Introduction

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- Forest modelling
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- Study cases

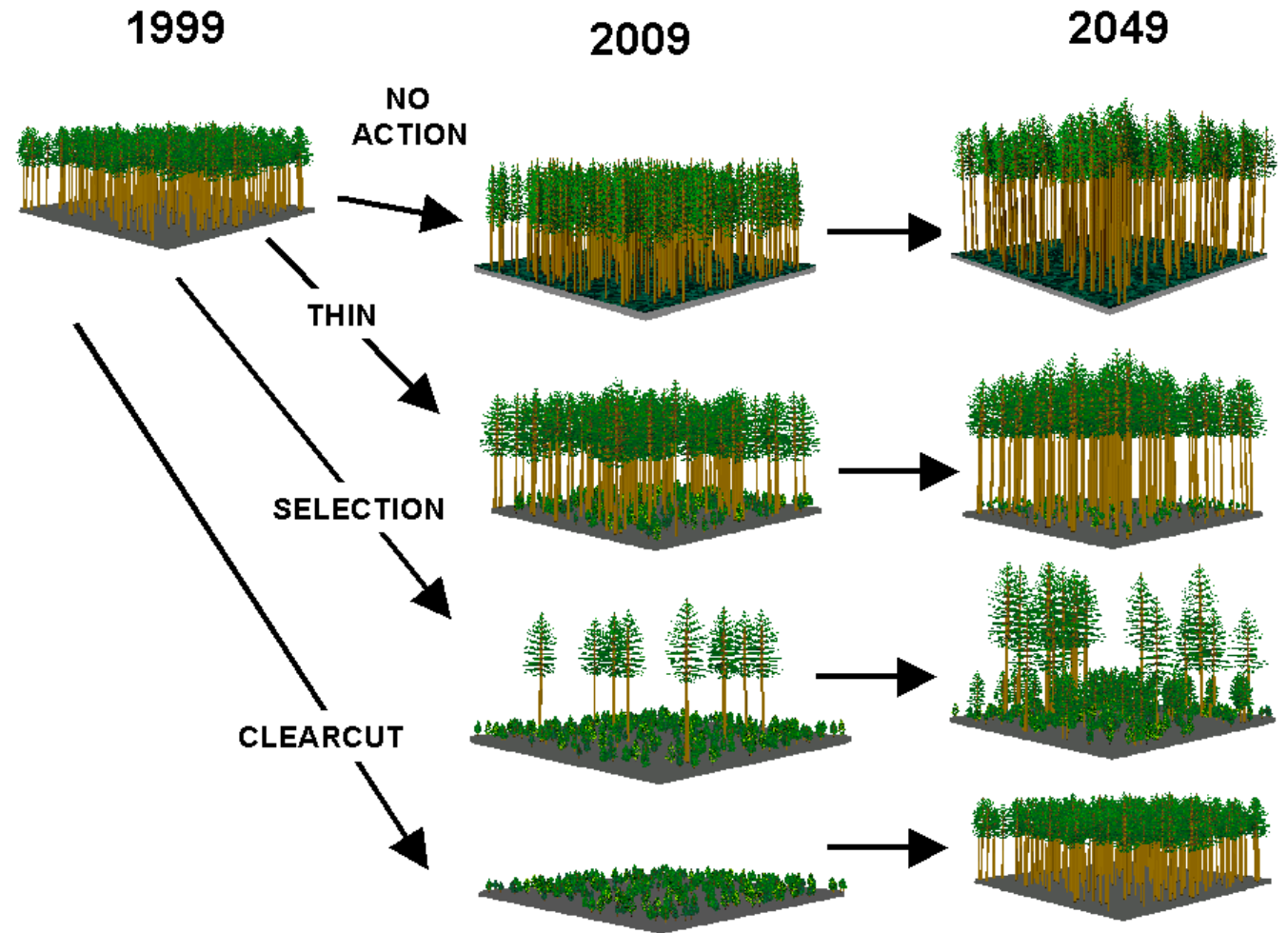


# Forest modelling



To define a forest model we can use resources like [“Glosario Técnico Forestal de la SECF”](#), where a **model** is defined as “An abstract representation of objects and situations from the real world, having the purpose to characterize a phenomenon or simulate processes and predict their results, i.e., quantitative models that use mathematical equations.”

From that explanation, we can deduce that **forest modelling** is the **abstract representation** of a forest stand that let us know its evolution under different scenarios.





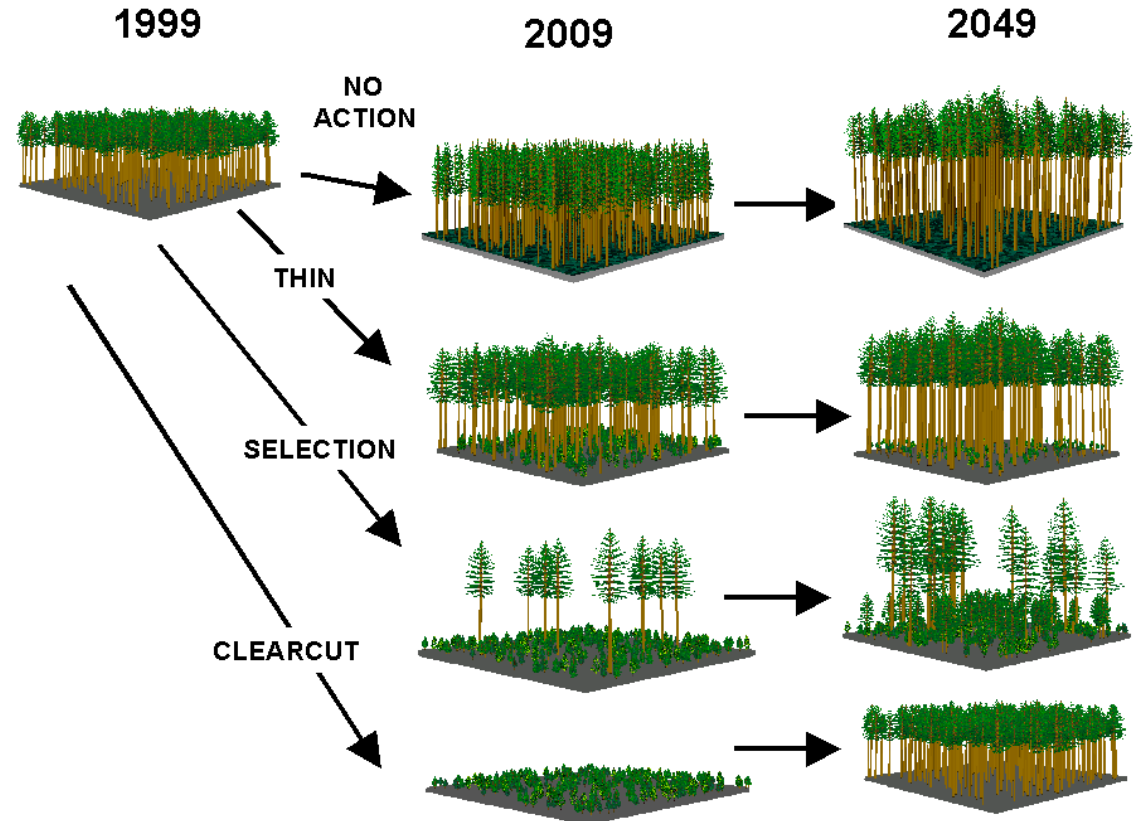
*What is SIMANFOR?*



**SIMANFOR** is a tool that allows the simulation of forest management alternatives.

Remembering the idea of forest modelling and model, the main strength of **SIMANFOR** is to provide their users with a tool that allows predicting the effect of a certain silvicultural over a forest stand, hiding the calculation part (previously programmed) and providing useful information to the taking decisión process.

## SIMANFOR





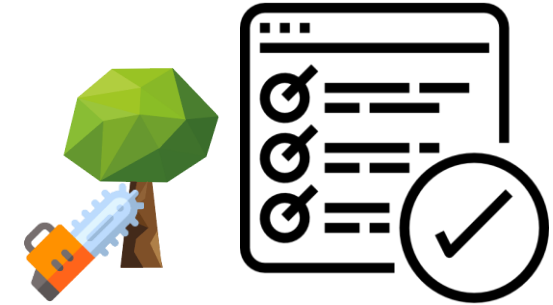
# What is SIMANFOR?

SIMANFOR has the structure shown in the image, where:

- The **inventories** are the data given to the simulator by the user
- The **scenarios** are the list of processes we want to simulate, including projections (growth) and harvests (silvicultural activities).
- The **models** are part of the simulator and they are already programmed by the support team of SIMANFOR
- The **results** given by SIMANFOR are files that include information regarding the evolution of each plot under a given silvicultural scenario



**INVENTORY**



**SCENARIO**

# SIMANFOR



**RESULTS**

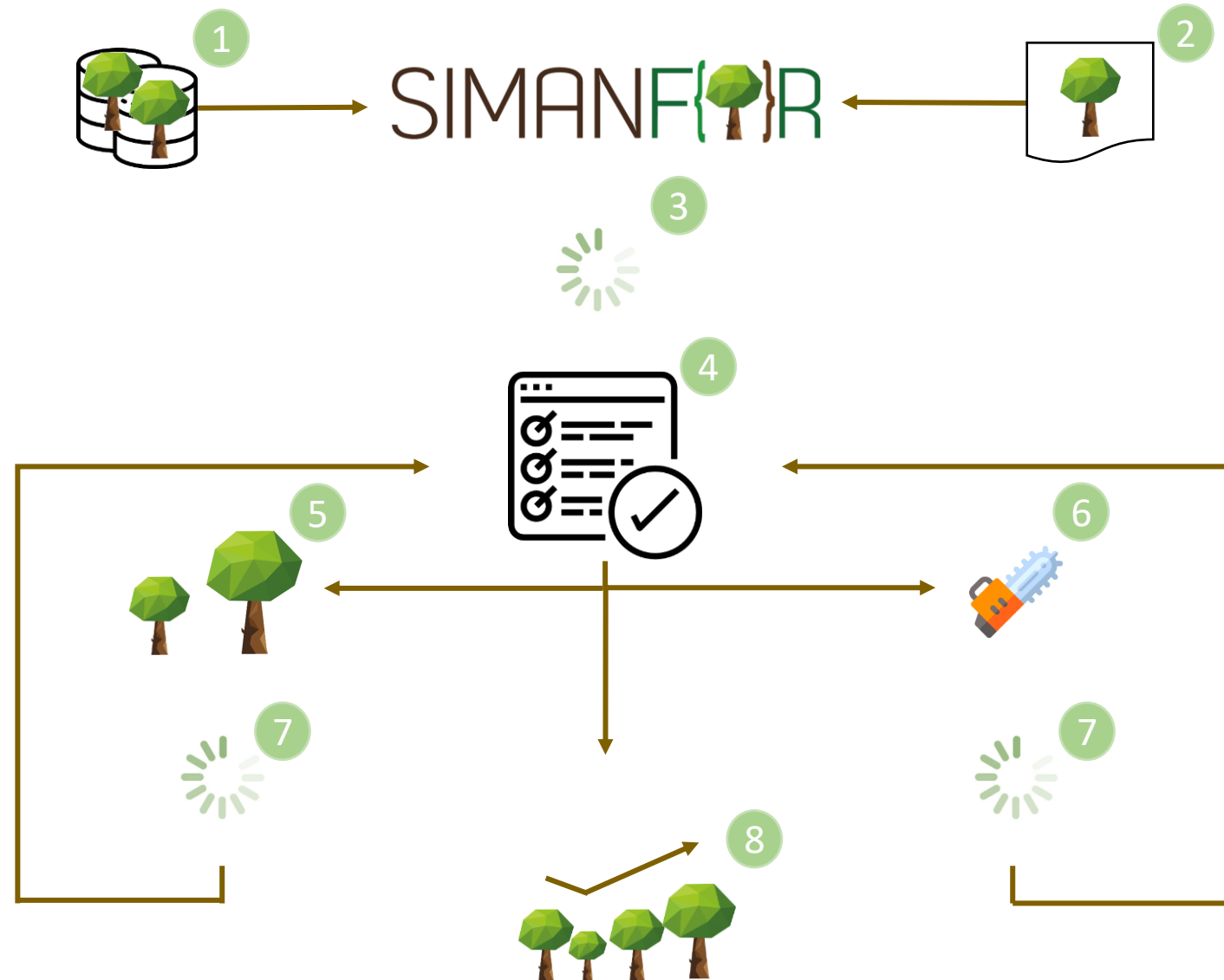




How SIMANFOR works?



# How SIMANFOR works?

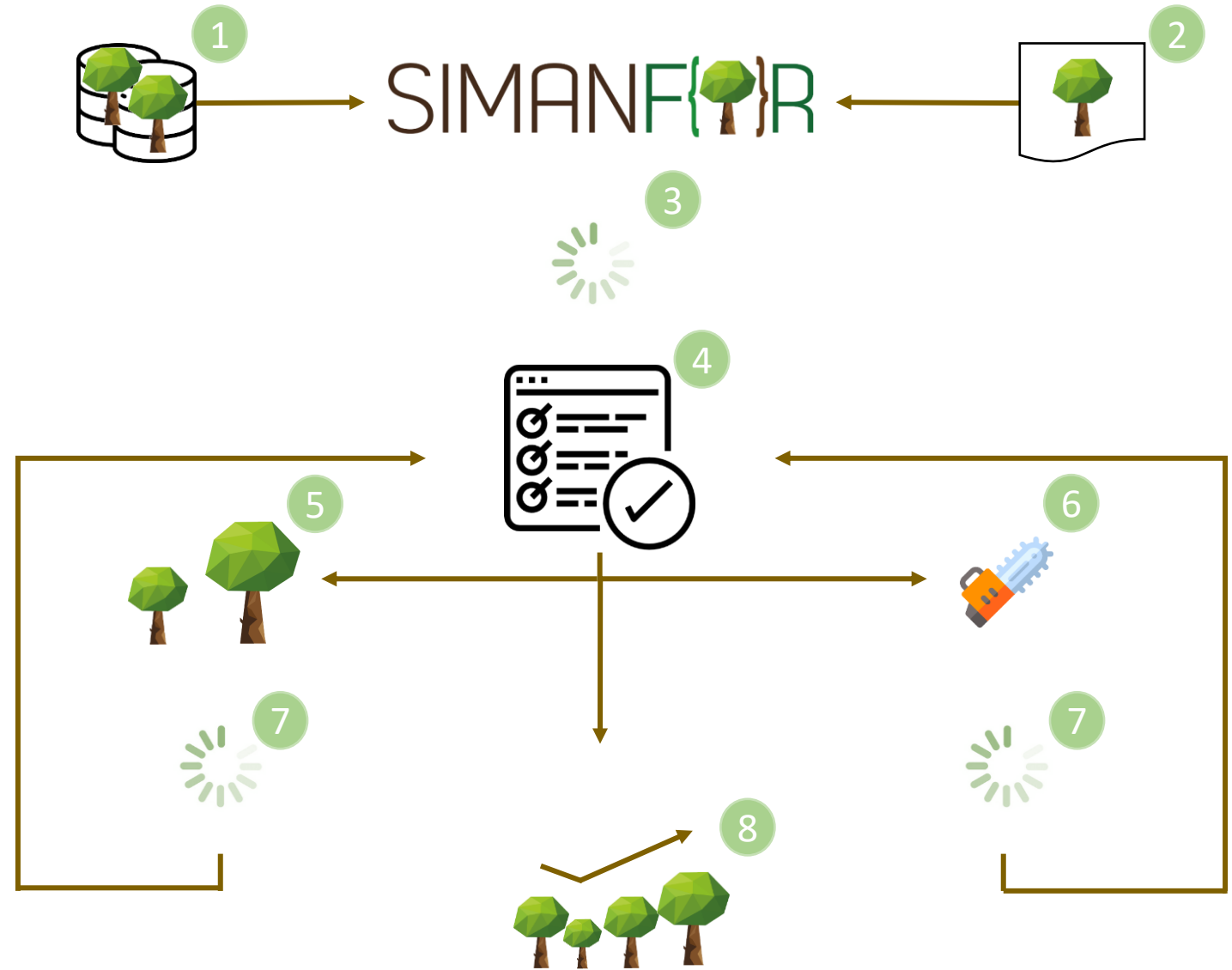




# How SIMANFOR works?

When we run a simulation, the **SIMANFOR internal workflow** is the one shown in the image:

- 1 The user provides an **inventory** with its data.
- 2 The user chooses a **forest model** to run their simulations.
- 3 The information is loaded on **SIMANFOR** and an **initializing** process starts, needed to input the missing variables of the initial inventory provided by the user.





# How SIMANFOR works?

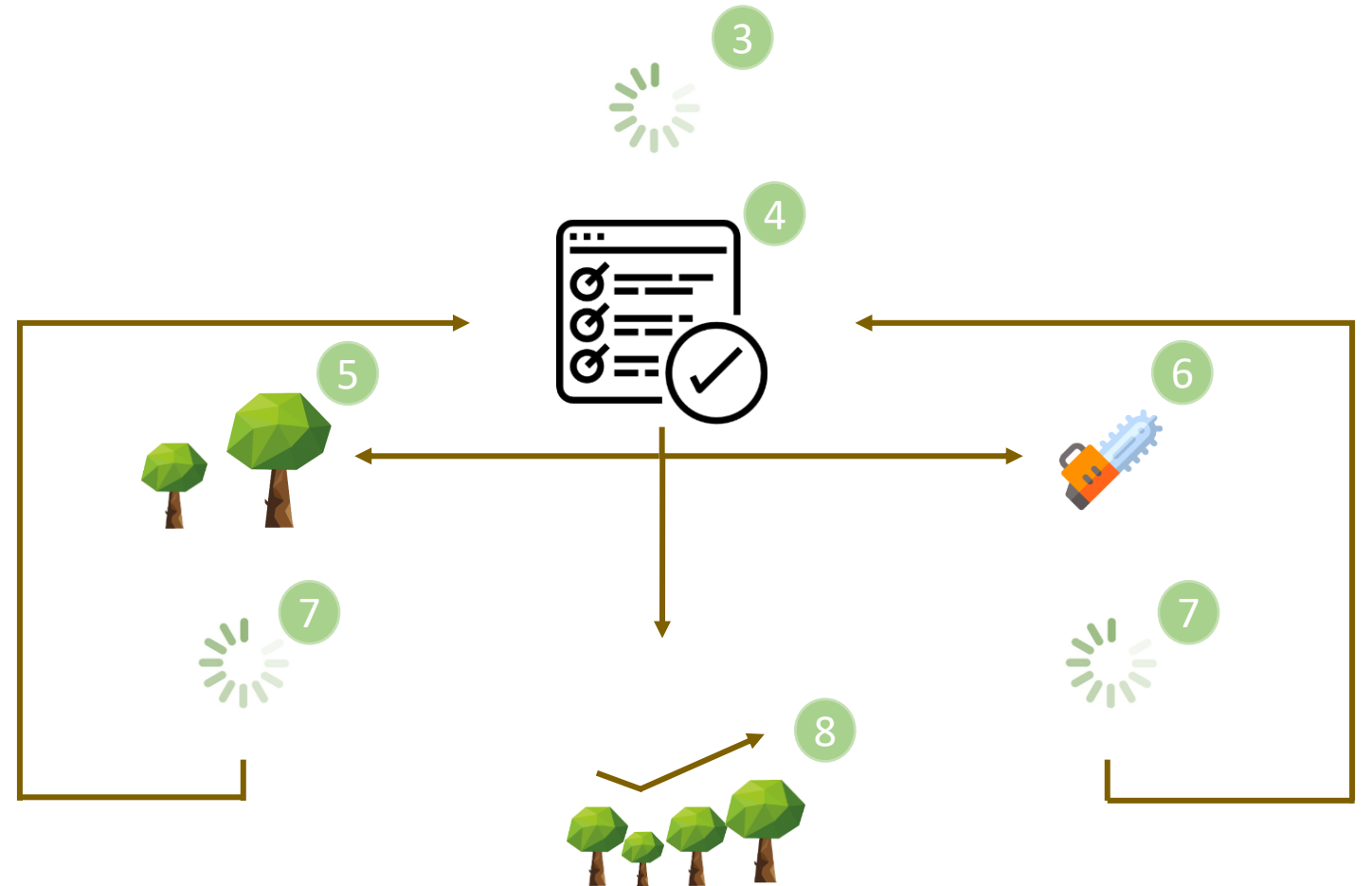


4 Having the inventory completed with more variables, SIMANFOR starts to read the **silvicultural scenario** provided by the user. On that point, the processes to apply can be:

5 **Projections**, applying mortality, growth and ingrowth submodels on our data.

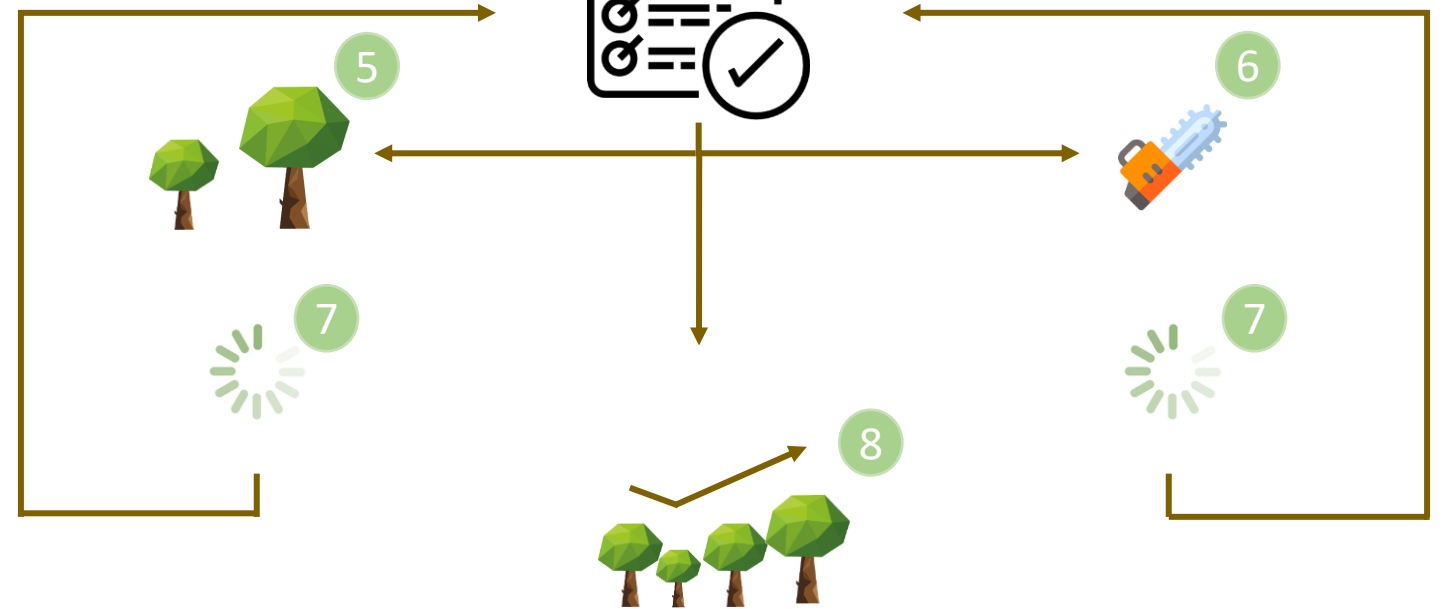
6 **Harvests**, where part of the trees are extracted following a certain type, criteria and intensity set by the user.

7 After each process, the simulator **recalculates** the variables of each tree and stand., recording the information of the new situation.





# How SIMANFOR works?



4 At the end of each process, SIMANFOR reads and applies the following step of the **silvicultural scenario**.

8 When all the steps are done, the **results** of each of the processes (projection, harvest) are written in a single file for each plot.



*SIMANFOR website and resources*



SIMANFOR is a free tool available at:

<http://www.simanfor.es/>

Its website has a friendly visual interface for users, but with some limitations to create new models, modify the actual ones or developing massive simulations. For any of these points, we recommend contacting the SIMANFOR **support team** at:

[simanfor.data@forest.uva.es](mailto:simanfor.data@forest.uva.es)

SIMANFOR



➔ Iniciar sesión

? Ayuda

📄 Aviso Legal

Sistema de Apoyo para la Simulación de Alternativas de Manejo Forestal Sostenible

Sobre nosotros

SIMANFOR es una aplicación web que permite simular alternativas de gestión forestal sostenible.

SIMANFOR integra diferentes módulos para manejar inventarios forestales, simular y proyectar diferentes condiciones del rodal (mediante algoritmos y fórmulas de predicción y proyección), sistemas de consultas, salidas de simulaciones y sistema de seguridad.

SIMANFOR es una aplicación multiplataforma e incluye modelos de dinámica forestal multinivel (desde árbol hasta masa forestal)

Haga clic aquí para descargar el formulario de solicitud de cuenta de usuario. Una vez relleno, deberá enviarlo a la siguiente dirección de e-mail: [simanfor.data@forest.uva.es](mailto:simanfor.data@forest.uva.es)

Investigación

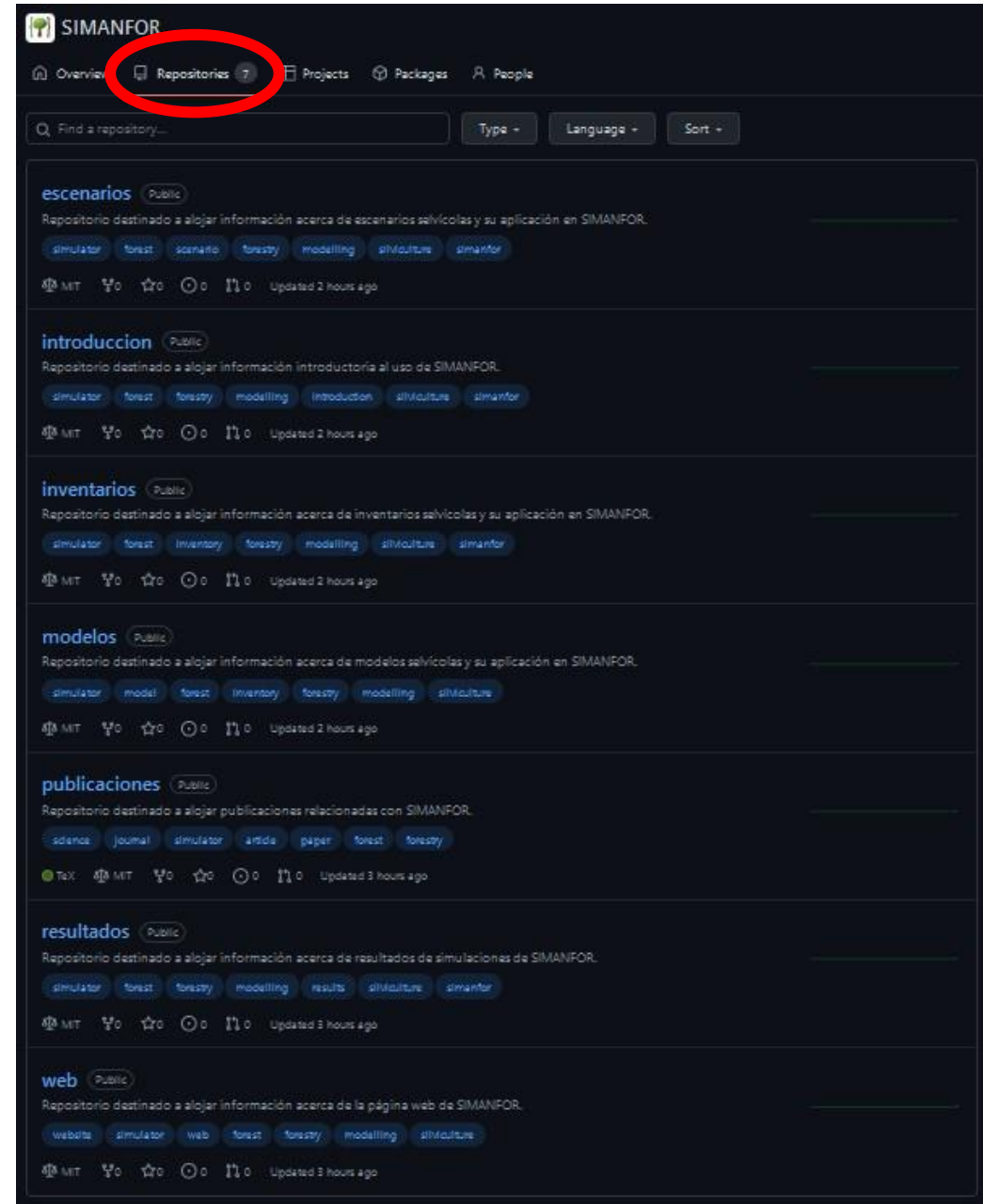


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In addition to its website, different **training contents** were developed about SIMANFOR, such as the guide manual you are reading, a [guide to using the webpage](#), and explanations about inventories, scenarios, models... and other contents related to the simulator, available at:

<https://github.com/simanfor>





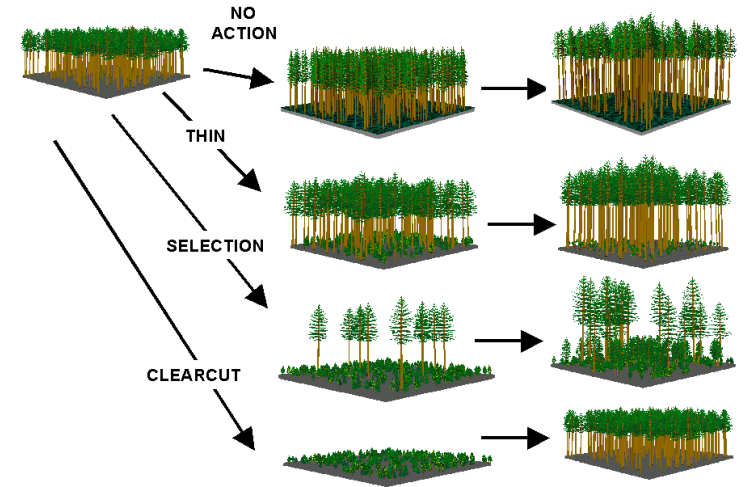
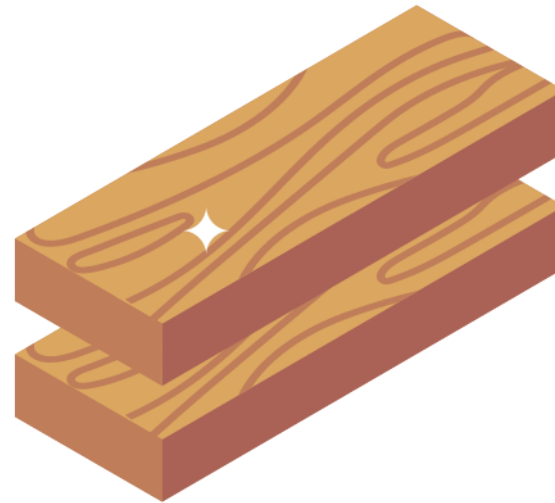


# *Study cases*



In this [repository](#), you will find information about different **research studies** that have been developed by using SIMANFOR. However, SIMANFOR applications for non-research fields are diverse, like:

- Study **silvicultural alternatives** for a specific stand
- Development of **silvicultural guides**
- **Forest management plans**
- Studies about the **economic profitability** of wood, non-wood resources and ecosystem services provided by forests
- Wood products **quantification and classification**
- Studies about **carbon stock and storage**





Do you want more?

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