

# Land Assessment, Acquisition and SRC Management

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## About the project

Dendromass4Europe (D4EU; 2017 – 2022) aims at establishing sustainable, Short Rotation Coppice (SRC)-based, regional cropping systems for woody biomass (dendromass) production on marginal agricultural land. The dendromass produced in SRC (lignous biomass, bark and wood) is supplied to dedicated bio-based value chains that create additional income and job opportunities in rural areas. The supply chains will be tailored for optimum efficiency of supply logistics and for reducing CO<sub>2</sub> emissions. Innovative bio-based materials will help to replace fossil-based materials.



Fig.1: Plantation in Horne Obdokovce in the middle of the first growing season



Fig.2: Plantation after mechanical weed control - inrow area undisturbed



Fig.3: Vigorous resprouting after harvesting

## Introduction

Agreements with land owners and land users form the backbone of Dendromass4Europe and create the legal and conceptual basis for the practical SRC operations. The establishment and operation of dendromass plantations with poplars on agricultural land which is currently not in use, underutilized, marginal or located in rural disadvantaged areas is the precondition for later processing of the SRC dendromass into new bio-based materials.

Our task was to develop a land assessment and acquisition process that can lead to the successful establishment of new SRC in Slovakia (see fig.1) with a positive or neutral net environmental impact (see fig.2).

This process had to be especially attuned to long-term cooperation with land owners and farmers, since the SRC concept, with its three to four rotation periods (through resprouting after harvest, see fig.3), specifies the use of agricultural land for up to 20 years.

## Materials and Methods

For the successful establishment of SRC the following working protocol had been established:

- analysis of the legal requirements for SRC establishment in the Slovak Republic,
- stakeholder consultation and acquiring owners consent to enable growing SRC on their land,
- site conditions and soil parameter assessment - must be favorable to sustain rentable SRC yield results,
- assessment of the environmental impact of establishment (for specific criteria see fig.4).

Key tool for the resource and cost efficient SRC operation is a data platform that summarizes all relevant data for each field. Included are for example field size, cooperation partner and land owner as well as the date of agricultural activities such as soil preparation, planting, weed control and pruning, estimated standing stock, timing of harvest and the corresponding rotation length.

## Results

Within D4EU project, 11,312.00 ha were surveyed and evaluated, from which 2,715 ha, or correspondingly 24 %, were deemed as recommended for planting (see fig.5). Altogether 1,294 ha of net planted SRC have been established under D4EU. Here, an agreement with farmers and land owners could be reached and the plantation fulfilled all necessary requirements. Three agreement types (cooperation, lease, land purchase) were developed. Cooperation agreements with local farmers represent 66 % of the total planted area (see fig.6). Plantation management protocols ensure the prompt reaction to external factors (e.g. game damage, weed pressure, extreme weather events).

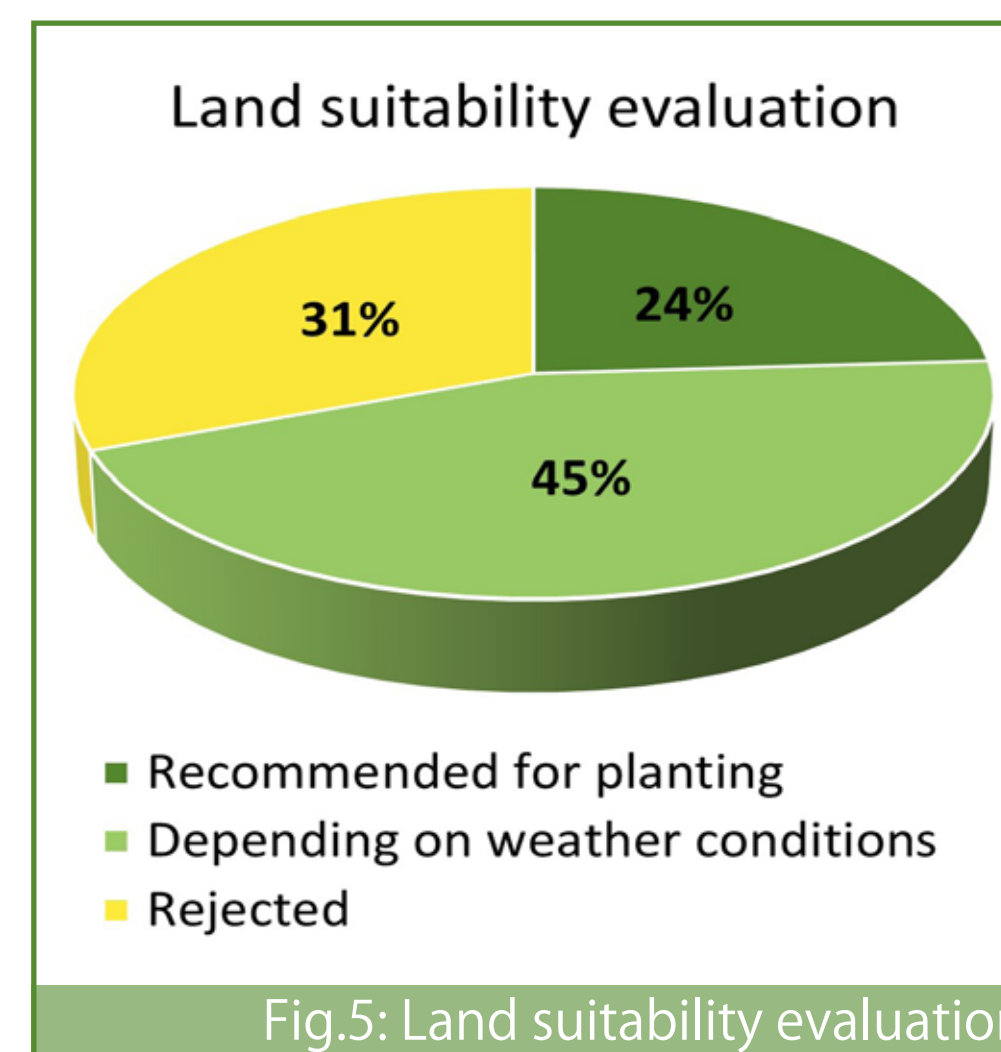


Fig.5: Land suitability evaluation

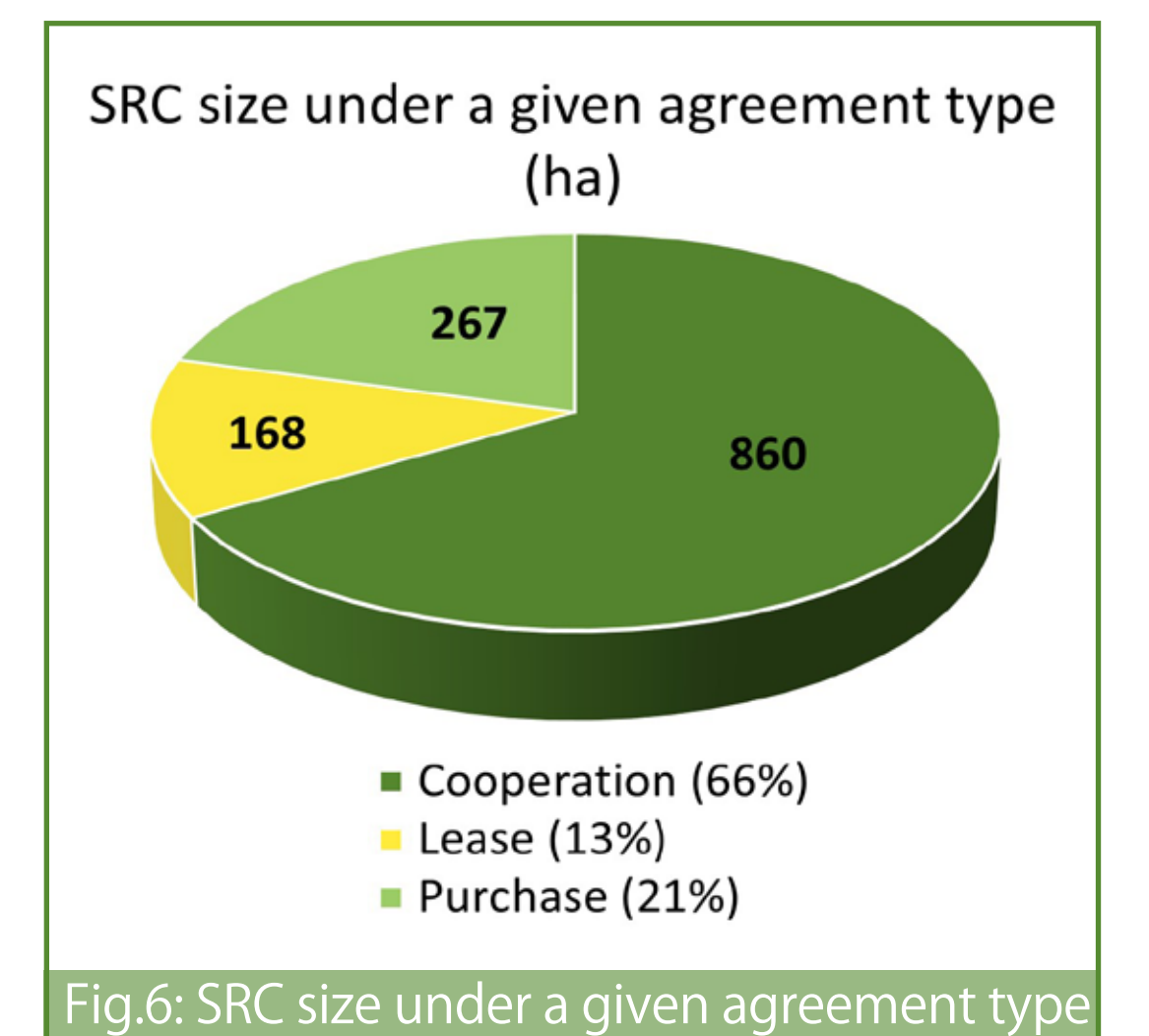


Fig.6: SRC size under a given agreement type

## Conclusions

Considering the main limitations, namely the highly scattered land ownership structure and the unfavorable changes in environmental legislation connected with the negative perception of non-native poplars by the environmental institutions in Slovakia, an impressive amount of SRC has been established under D4EU. The continuous monitoring, data collection and well-established management practices (see fig.7) ensure that the currently established SRC provides the necessary biomass for the successful development of NBBMs and their market replication.

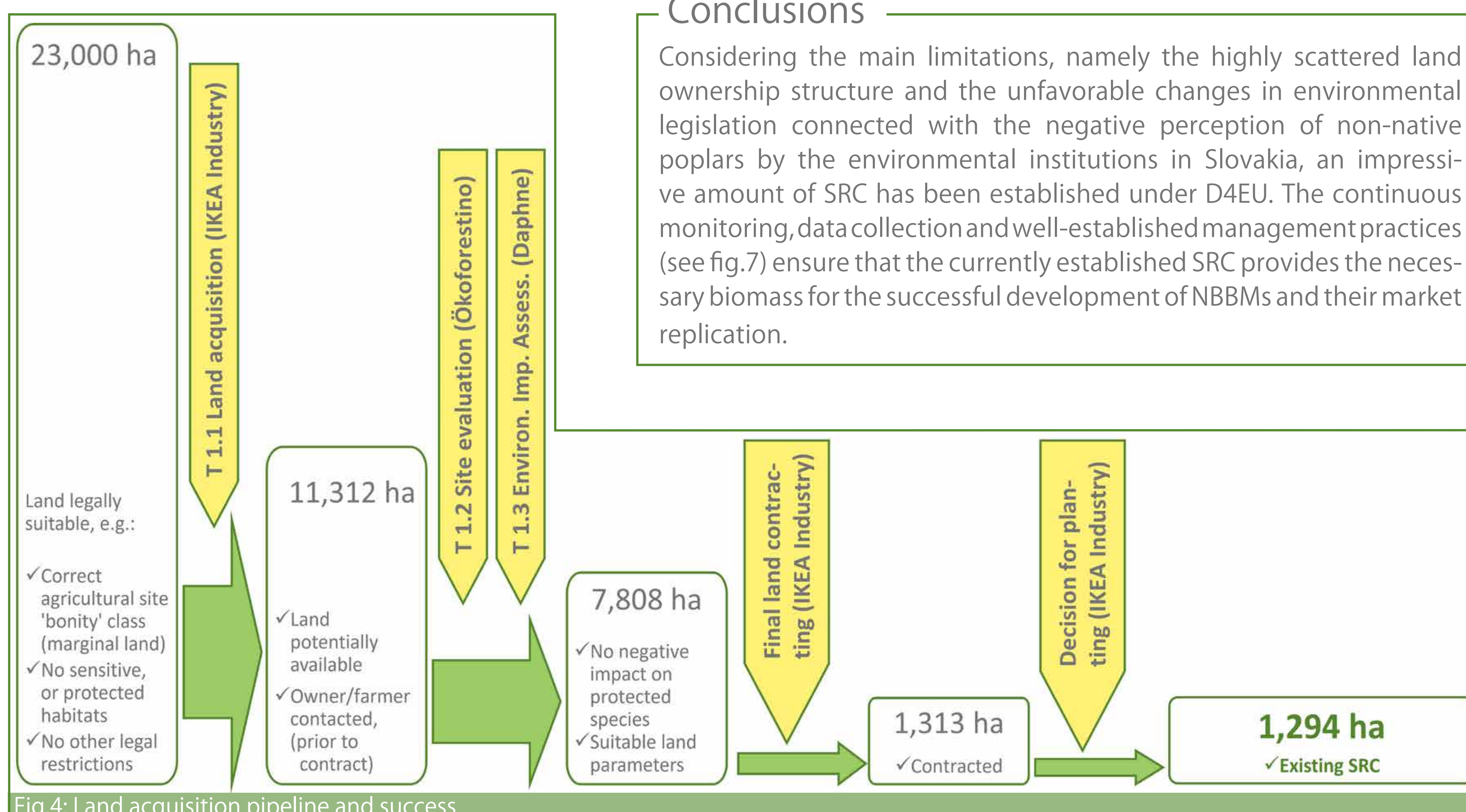


Fig.4: Land acquisition pipeline and success

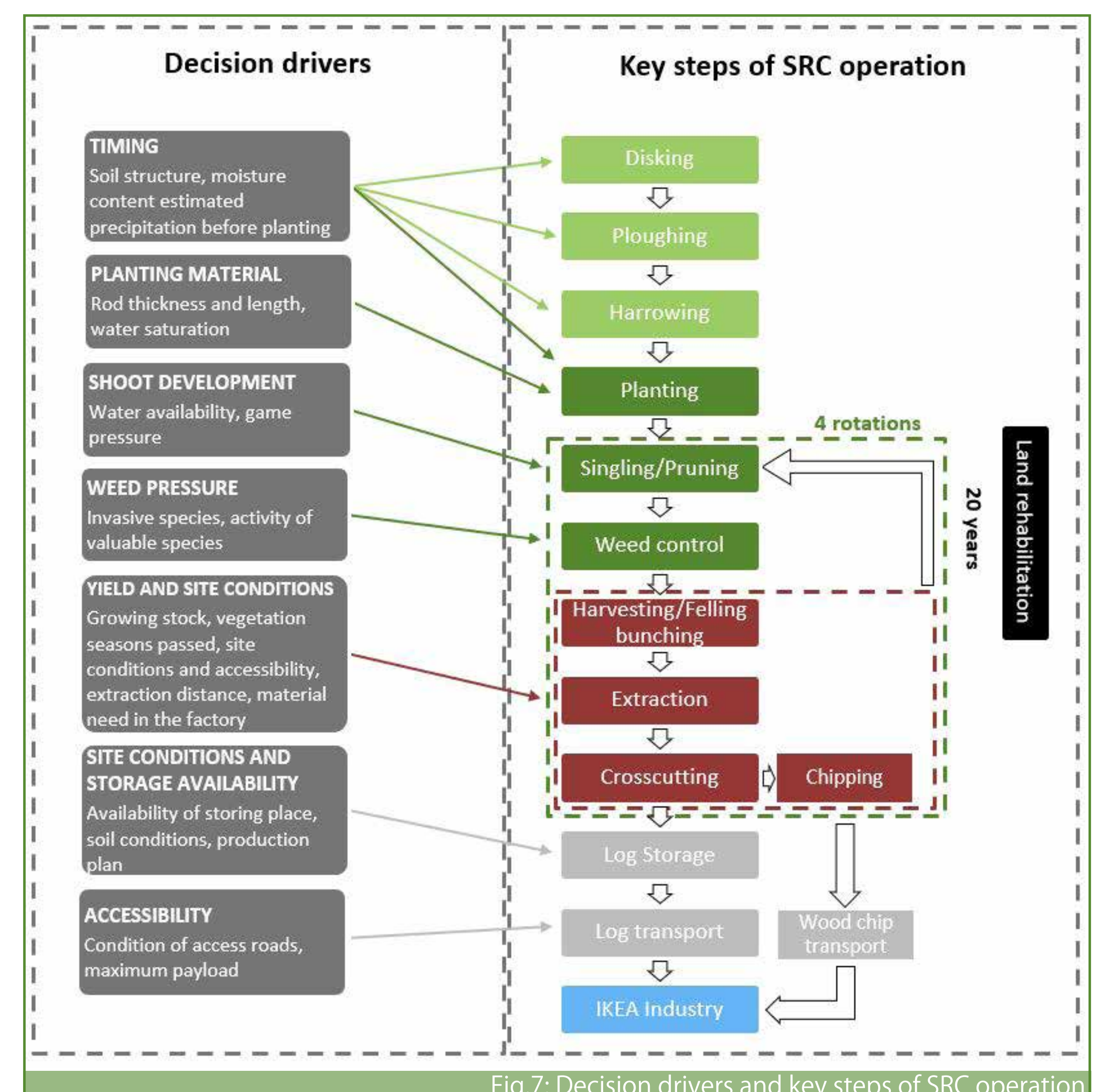


Fig.7: Decision drivers and key steps of SRC operation

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