

SUSTREE: Utilizing genetic diversity for adapting forests to climate change



Background

- Many forests in Central Europe (CE) are vulnerable to climate change.
- Genetic variation within tree species can be utilised to select adapted planting materials suitable for future conditions.
- SUSTREE aims to develop tools for practitioners and spread awareness on the transnational issues of climate change and adaptation.

SUSTREE Documentary Movie

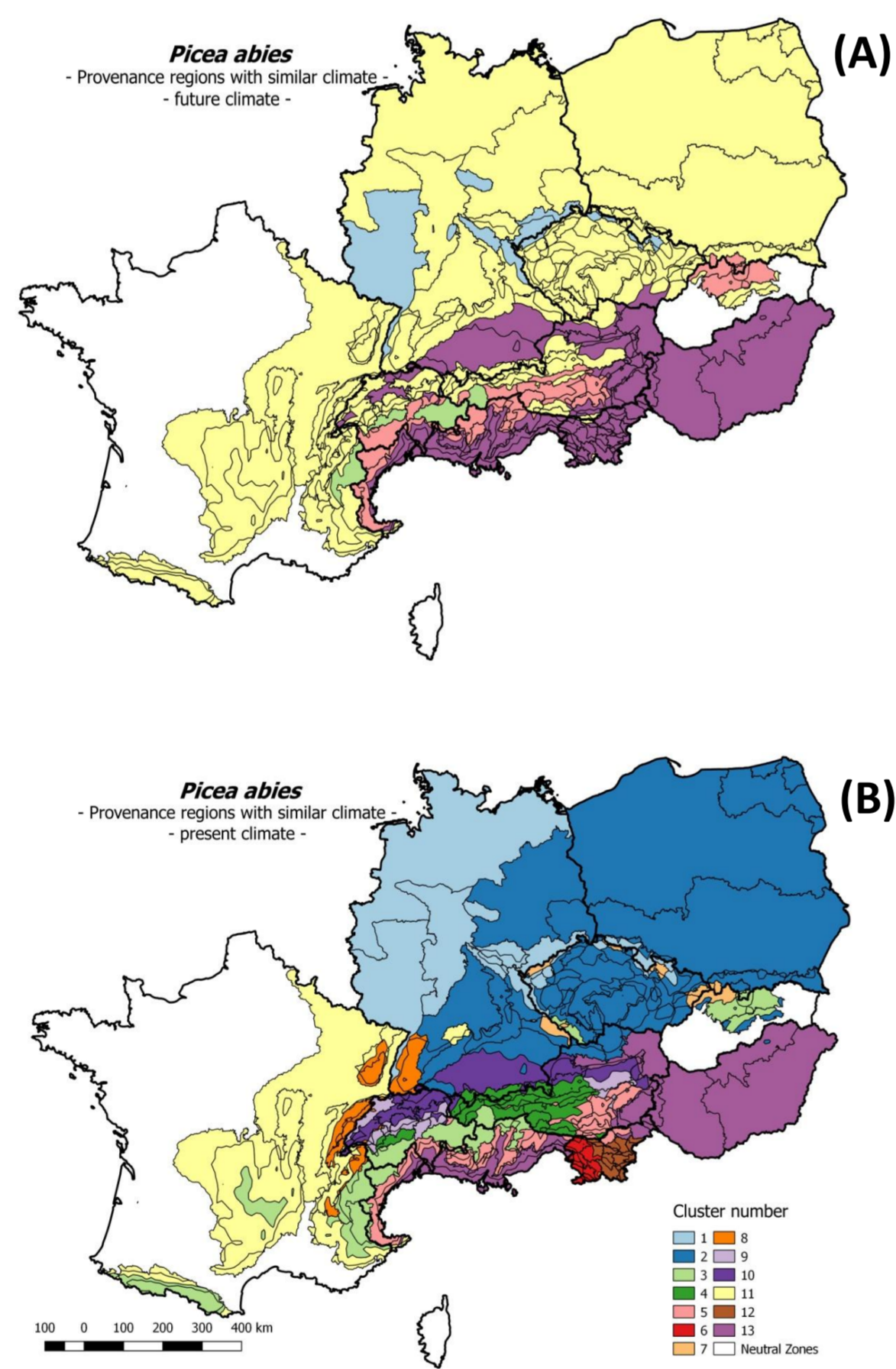


The trailer of Documentary can be found in the following link
<https://youtu.be/8kE4hpBkNts>

Policy Relevance

Forest seeds and seedling are legally regulated within the Council Directive 1999/105/EC. It provides the basis for all national regulations in which, among others, national Regions of Provenance are defined.

The policy brief contains for example, maps of climatic similarity among present Regions of Provenance for Norway spruce (*Picea abies*) for present climate, (A) and the expected shift and expansion of south-western (B) and pannonic climate regimes until the end of the century.



SUSTREE Project

SUSTREE: "Conservation and sustainable utilization of forest tree diversity in climate change"

SUSTREE is a transnational project promoting climate change adaptation and genetic diversity of forest ecosystems in Central Europe. Funded by Interreg, SUSTREE comprises of eight partner institutions from six countries (Austria, Germany, Czech Republic, Hungary, Poland, Slovakia) of Central Europe sharing their expertise, to enable management of the forest genetic resources.

Within this cooperation project:

- We develop transnational delineation models or decision support tools for forest seed transfer and genetic conservation based on species distribution models and available intra-specific climate-response function.
- These models are being connected to national registers of forest reproductive materials in order to support nursery and forest managers for selecting the appropriate seed and planting material for future forest regeneration.
- Pilot applications in state forest enterprises will document the usability of the introduced tools for forest and natural resource managers as well as for policymakers and public bodies responsible for restoration and forest reforestation schemes.

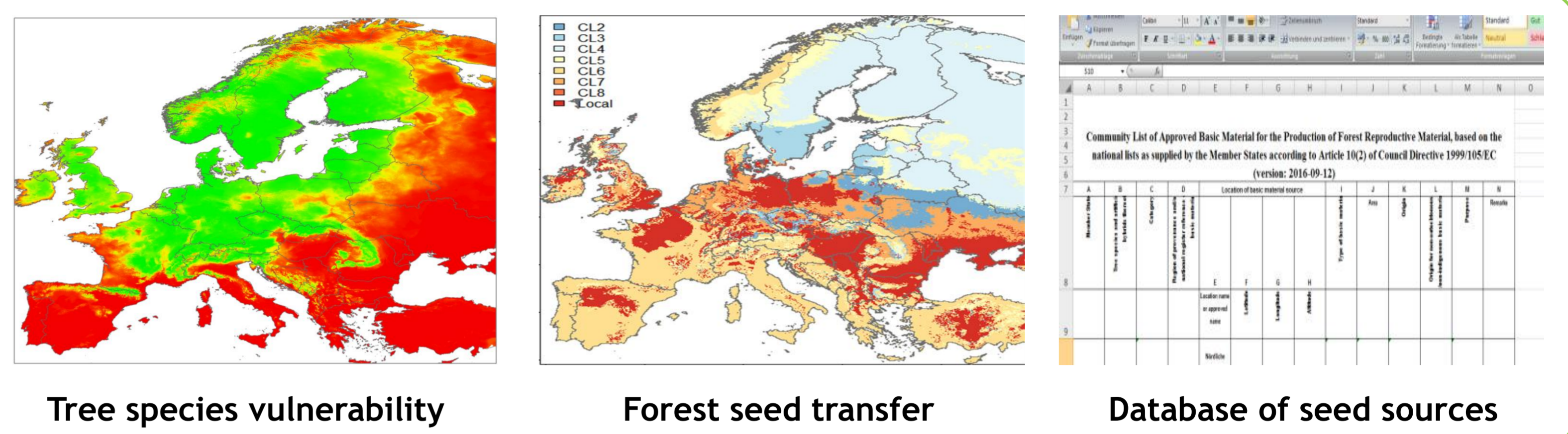
SUSTREE Policy Brief
 Conservation and sustainable utilization of forest tree diversity in climate change

KEY MESSAGES

1. Forest trees exhibit limited natural adaptation to the climate or their habitat, hampering optimal growth and survival under future environmental conditions.
2. Climate change disrupts the link between climate and local adaptations, thereby challenging the "local is best" paradigm.
3. Regions of Provenance, defined within European and national legislations, differ among countries and do not reflect climate conditions nor support adaptive management in climate change.
4. Legislations governing forestation and seed transfer should be based on range-wide local adaptation of trees to assist management of genetic resources under climate change.

SUSTREE Policy Brief

Decision Support Tools



Smartphone App SusSelect

- Map the vulnerability of tree species under current climate**
- ...under future climate**
- Compare tree species vulnerability**
- Find the best planting material**

SusSelect mapping application of the SUSTREE Interreg displays the current and future vulnerability of 7 European tree species, and suggests locations for seedling selection

Beta Version available on Google Play store, Android-4 version



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