Increasing the Resilience of the Forest Ecosystems

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Workshop on Implementation of
Nature-based Solutions to tackle climate change

Marseille (France)
22-24 January 2019

Introduction

- **Issue of Climate change**: Vulnerability of forest ecosystems and ecosystem services

1. Shifts in the range of species to higher altitudes or to northern latitudes (depending on the geographical position),
2. Increases in the bark beetle, wood boring insect epidemics, fire frequency and extend,
3. Decreases in the growth rate of tree species and biomass accumulation,
4. Death of trees due to water stres.

- **Type of ecosystem**: Forest Ecosystems

- **Type of NbS**: Ecosystem based management

- **Project leader and partners**: Nature Conservation Centre, General Directorate of Forestry, UNDP

- **Calendar**: Research: 2008-2010
  Implementation: 2019 onwards

- **Funding:** UNDP, Government, and Internal funding

Introduction

Increasing the resilience of the Forest ecosystems in the Seyhan Basin

1. Forests in Turkey: Governed and managed by the state;

2. Project site: Seyhan Basin (20,450 km²), typical Mediterranean forest ecosystem;

3. Forestry: One of the main economic activities in the region; generating income also for the local people;

Introduction

Increasing the resilience of the Forest ecosystems in the Seyhan Basin

4. Developing predictions for the changes and vulnerabilities in the forest ecosystems due to climate change:

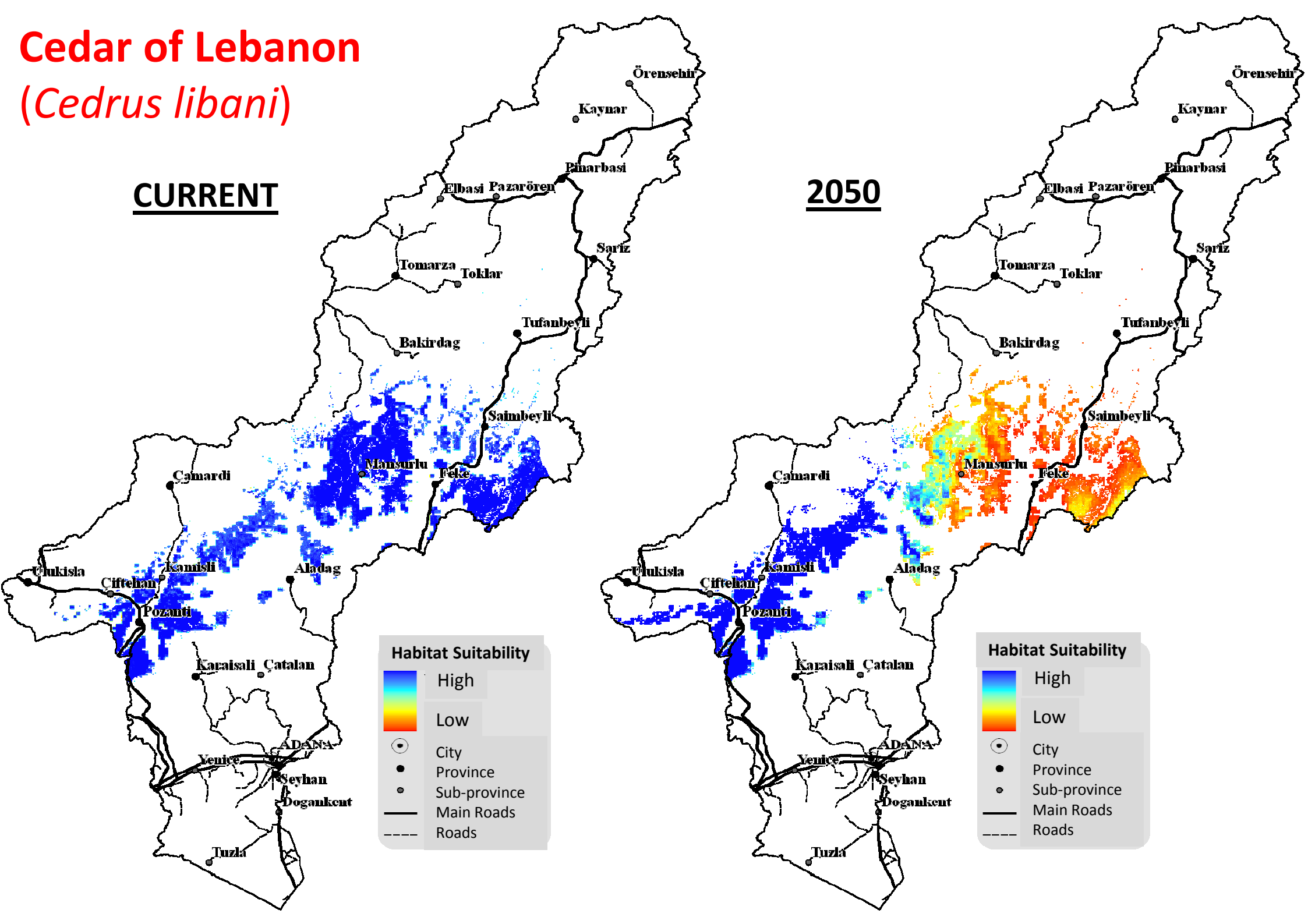
- Modeling the potential distribution of the major forest types
- Modeling the change in the future distribution of the major forest types
- Identification of the vulnerable sites;

5. Increasing the capacity of the General Directorate of Forestry (GDF):

- Developing management recommendations for the forest management and silvicultural plans
- Awareness raising activities among local people & GDF.

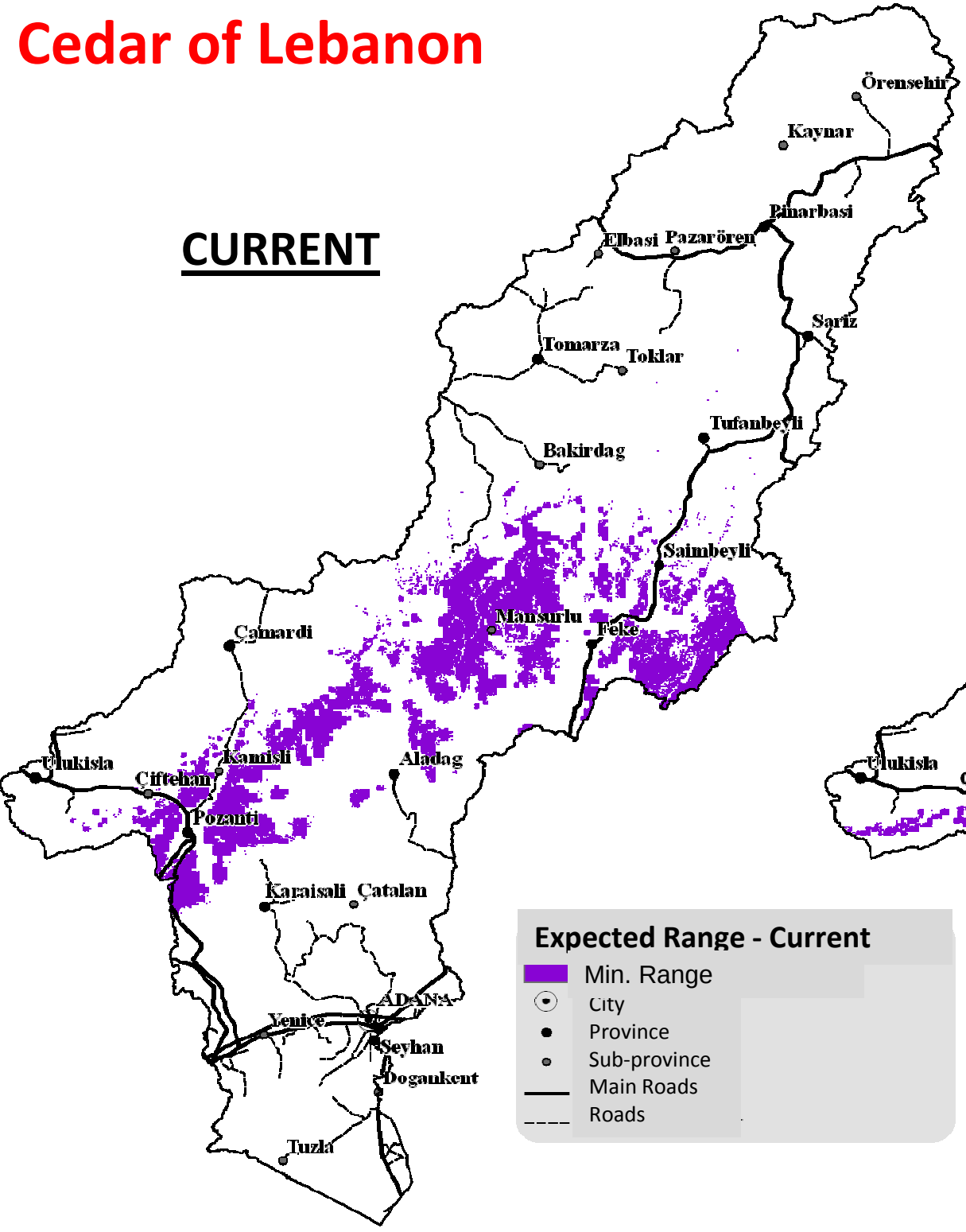
Cedar of Lebanon

(*Cedrus libani*)



Cedar of Lebanon

CURRENT



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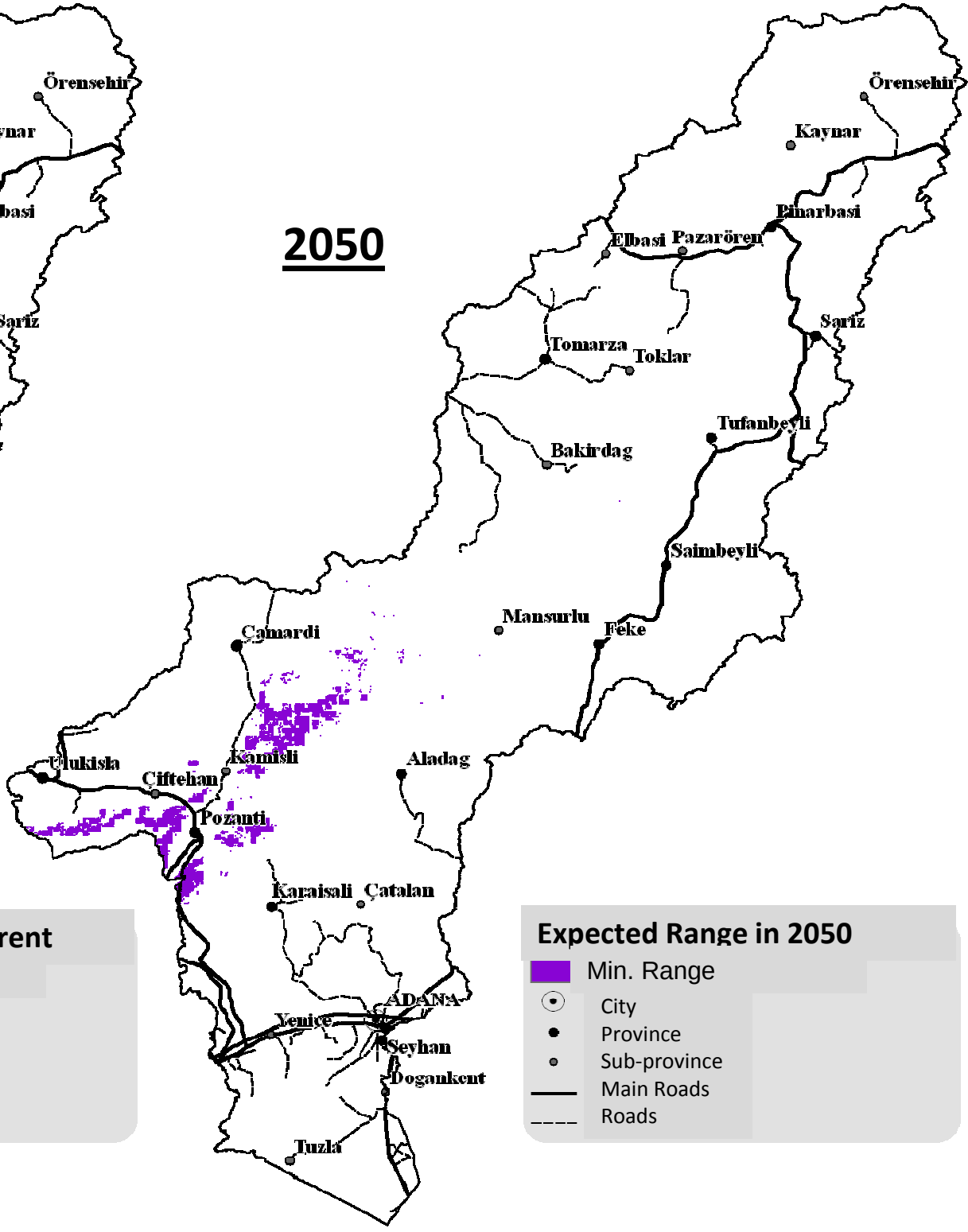
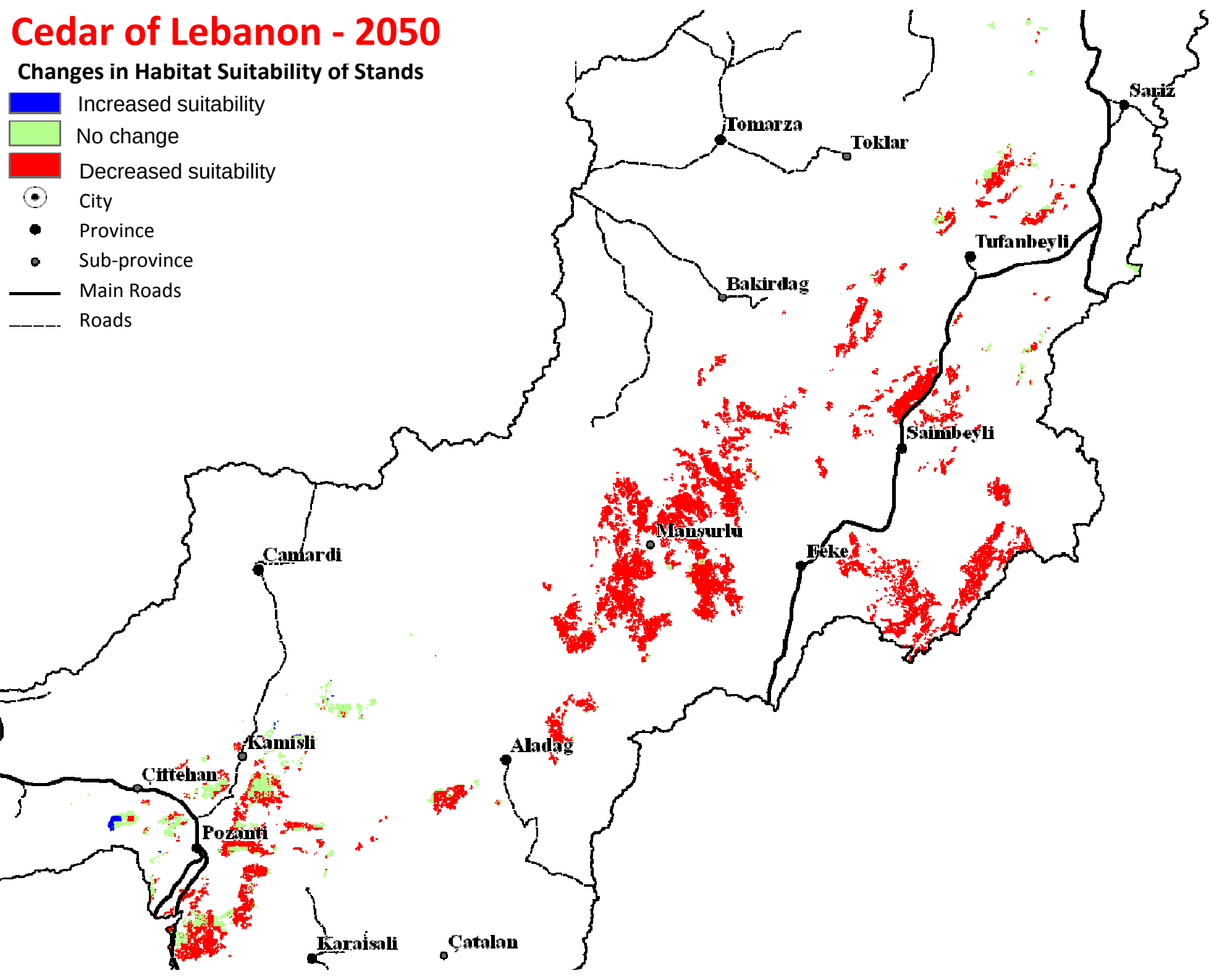


Cedar of Lebanon - 2050



Implementation Challenges and Key Issues

A. Working with the implementing institutions

B. Modeling for developing management recommendations

C. Vulnerability analysis

D. Developing implementable management recommendations

Recommendations

A. Working with the implementing institutions

1. It is critical to including the implementing institution from the beginning of the process,
2. The final deliverables should be in a format compatible with the implementing institutions system, and that they should fulfill their needs,
3. Modeling studies should need not be objective, but they should be utilized as a

Recommendations

B. Modeling for developing management recommendations

1. The biological elements to be modeled should be chosen carefully,
2. Modeling species under strong anthropogenic impact scenarios does not yield very accurate results,
3. Prefer to use the conservative climate scenarios as their outcomes better overlap with field observations,
4. When the outcomes of the modeling contradict with existing observations and implementations in the field, model should be re-evaluated.

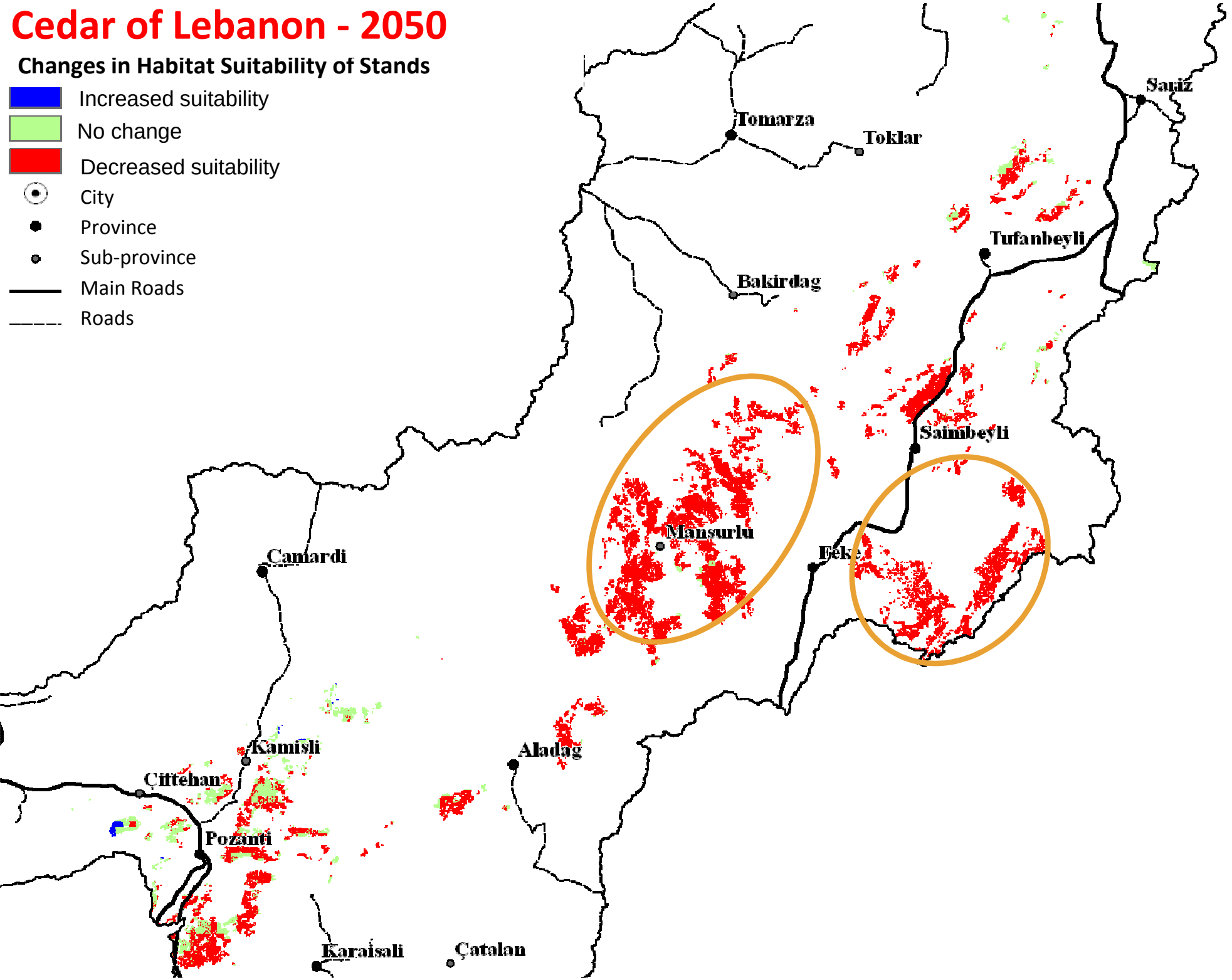
Recommendations

C. Vulnerability analysis

1. To present a reasonable number of treatment sites, instead of presenting the whole region as vulnerable,

2. To identify the most vulnerable sites so as to concentrate the limited efforts and resources,

Cedar of Lebanon - 2050



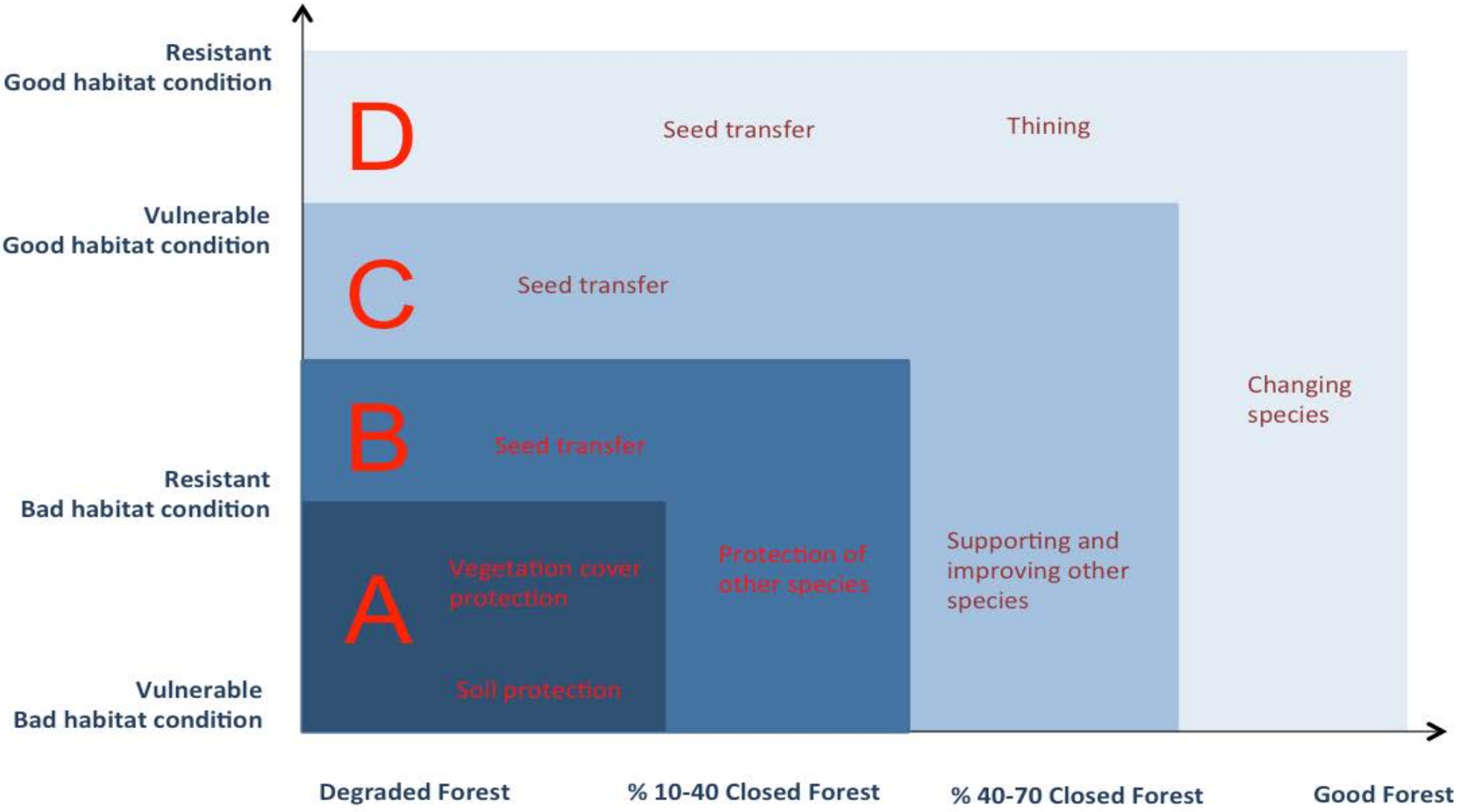
Recommendations

D. Developing implementable management recommendations:

1. It is important to make modest decisions whenever possible!

2. Prior to drastic decisions (e.g. changing structure and composition of the forests), model outcomes should be verified with on the ground observations.

3. Trying not to contradict with the existing management regimes!



Zone A: Conditions and the state of the forest is very bad, at least protect the soil and existinf vegetation cover. Improve it if possible
Zone B: Conditions and the state of the forest is not realy good, but we can try to protect the forest cover and support other species for the worst case scenarios.
Zone C: Conditions and the state of the forest is good enough to take some actions to protect the existing forest cover but still if conditions likely to get better for other species consider this option too
Zone D: Conditions are very good we can protect the species and if it is necesary take some agressive actions. However, if conditions are getting much better for other species you can even consider to change the species and take preperatory actions in that manner

Conclusions

1. Many of the existing adaptation studies concentrate on ecological forecasting. However, most of these studies are not followed by practical guidance on what to do on the ground to support ecosystem adaptation,

2. Any study to develop implementation recommendations should involve the institutions responsible for the implementation of these recommendations from the beginning. This is critical for developing implementable recommendations and to put the outcomes into practice.

3. The project is the first of its kind in Turkey, where research outcomes were successfully translated to management propositions and different scales. It also is the first study where the impacts of climate change were assessed towards developing adaptation measures on forest ecosystems

What is next?

Working with the General Directorate of Forestry, towards the integration of the recommendations into the management plans!

Disseminating this approach to other regions of Turkey!

Thank you

For more information :

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