CONSUS

Connecting for Sustainable Sourcing

A tool for agricultural planning

syngenta foundation for sustainable agriculture

Zürcher Hochschule für Angewandte Wissenschaften

zh aw Life Sciences und Facility Management

IUNR Institut für Umwelt und Natürliche Ressourcen

«Situation 1»

Identification of potential production locations for desired crops

Where can I plant my crop?

Taking into account

- Biophysical and socio-economic factors
- Crop Requirements

- Feasibility assessment
- How can I improve the current situation?
- Where are the limitations?

Considering increasing environmental challenges

- Where are alternative regions to grow the desired crop?

CONSUS can be applied to a variety of crops, contexts and scales

«Situation 2»

Suitability Analysis for crops in specific locations

- **Which crop is most ideal for my field?**
- **When is it best to plant?**

Taking into account

- Biophysical and socio-economic factors
- Crop Requirements

Considering increasing environmental challenges

- Crop diversification
- What are alternative crops?

- **Agro-ecological matching of production zones**

CONSUS can be applied to a variety of crops, contexts and scales

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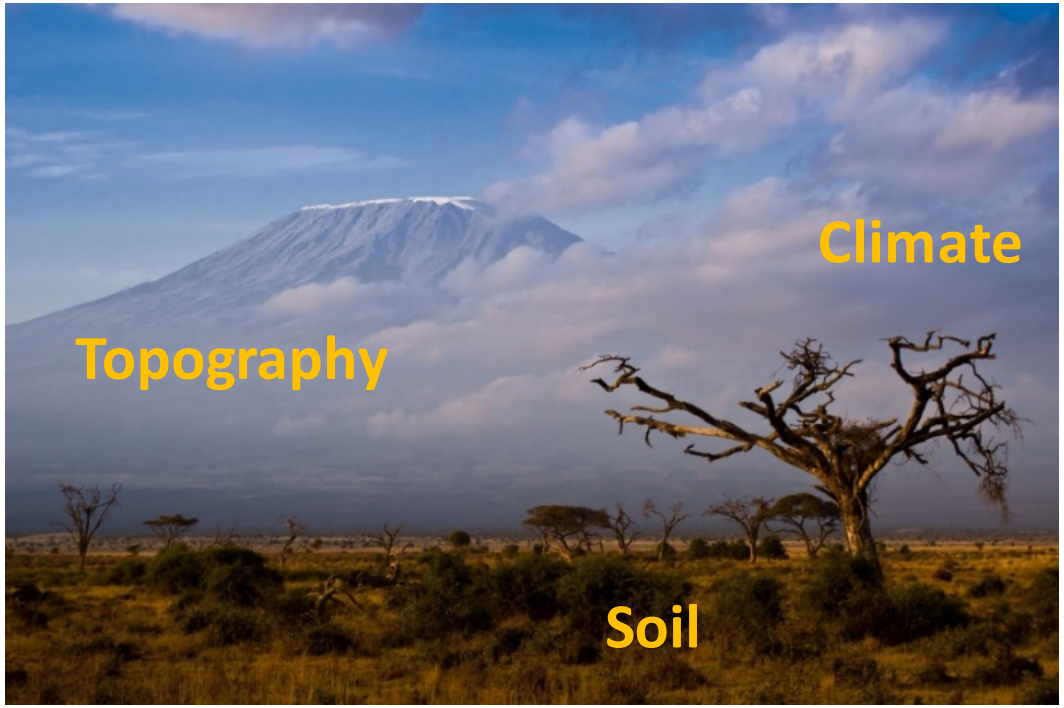
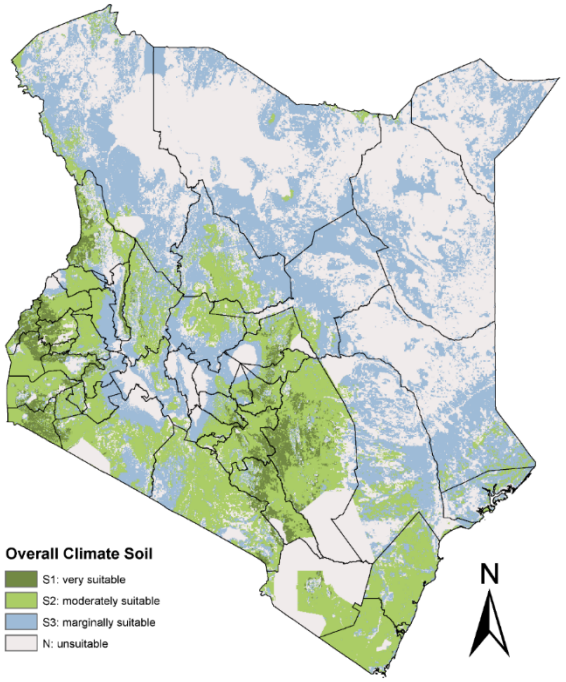
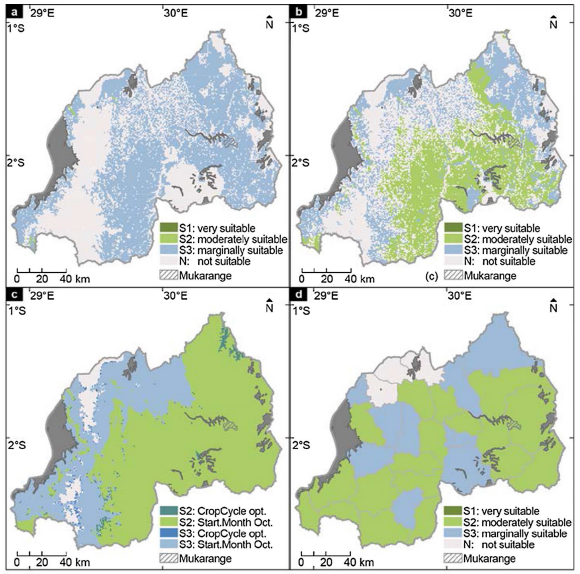
Output

Output: Suitability Map of analysed location – relating to the respective crop





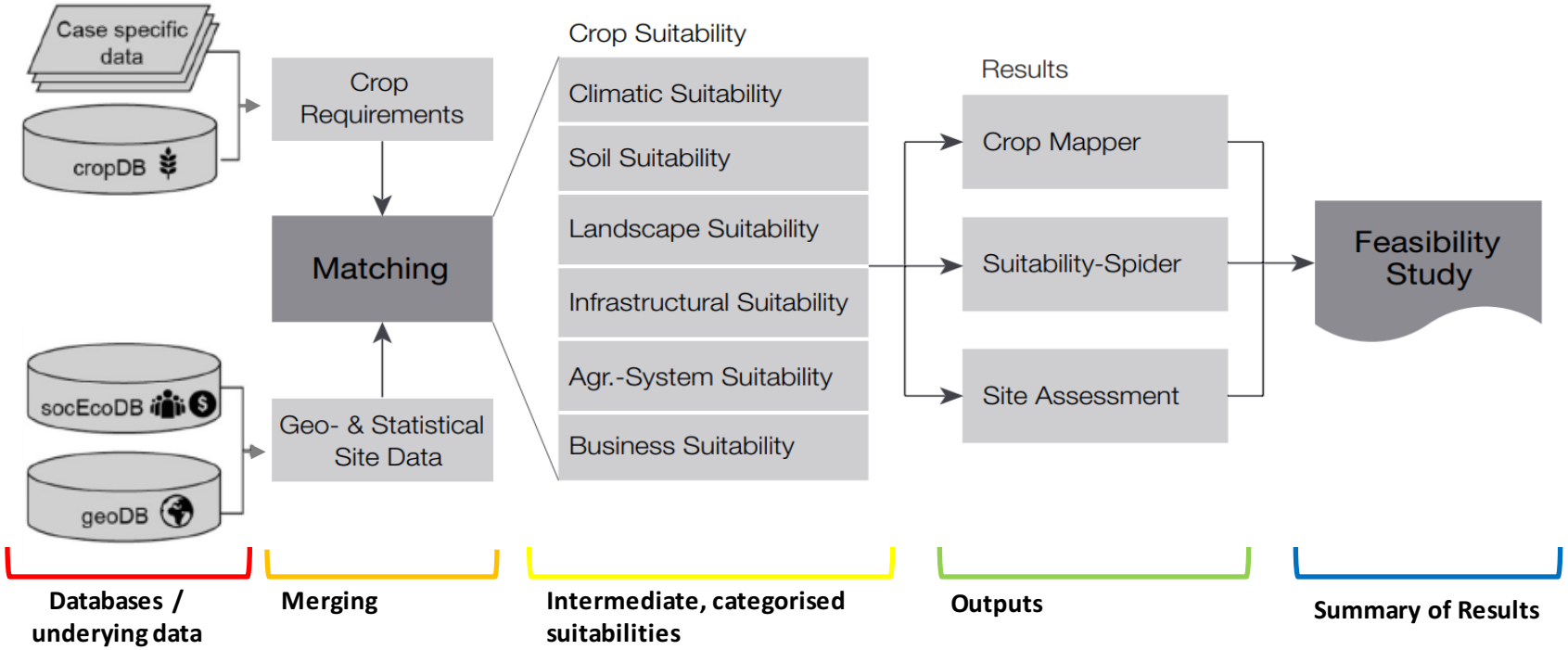


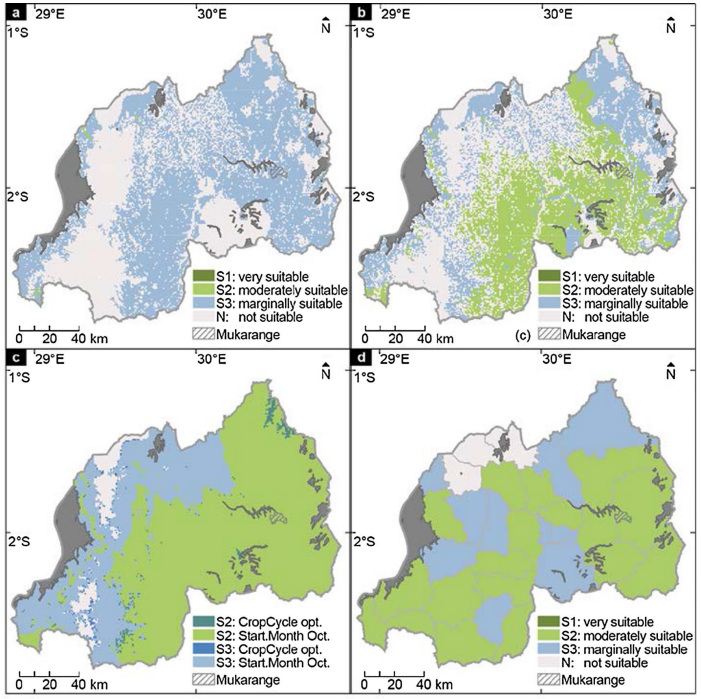
Additional features:

- Climate Scenarios
- Crop Cycler

How can we use (publicly available) data to improve production systems?

Underlying Model

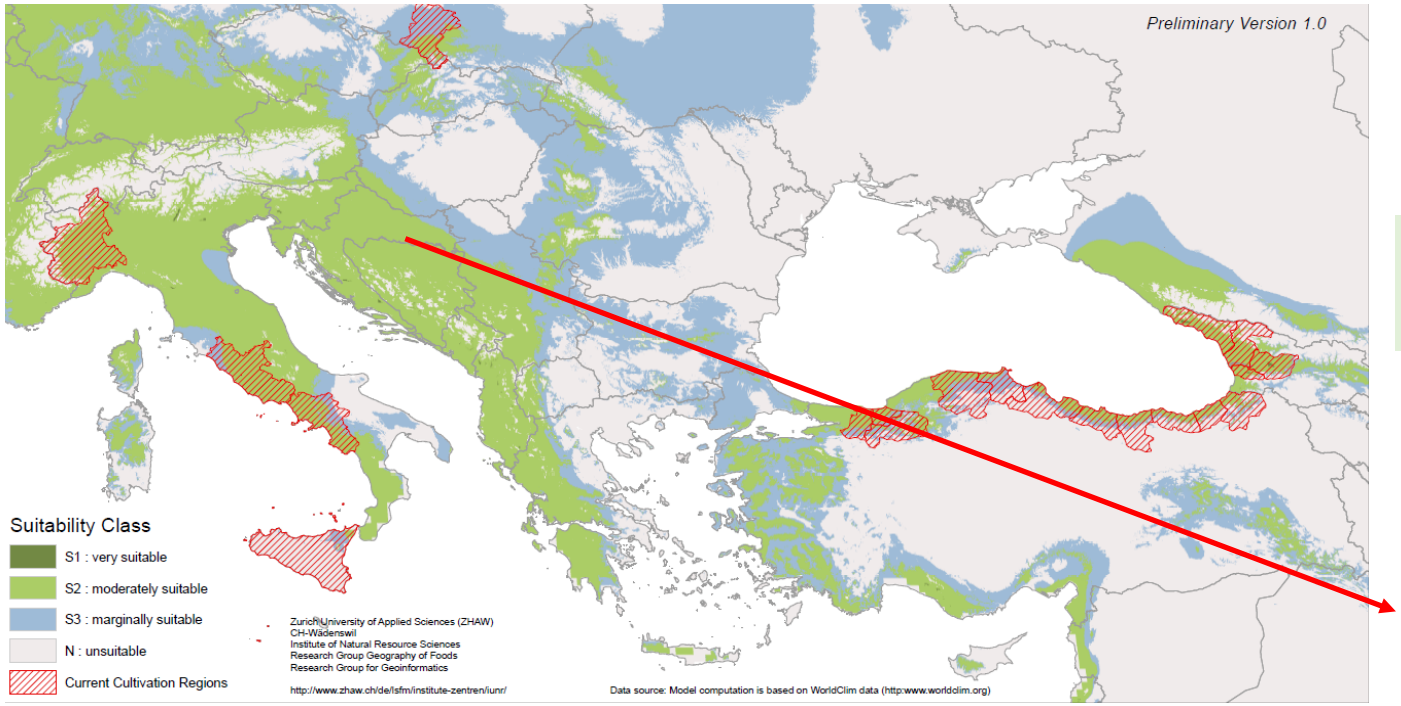


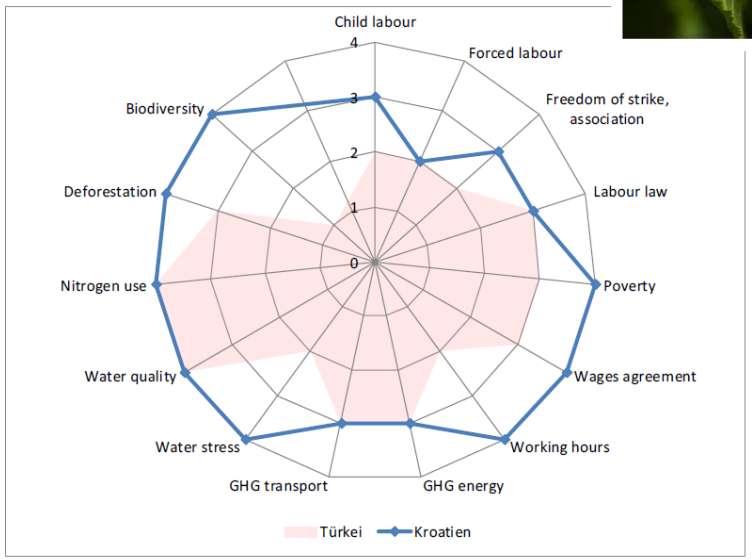


Example - Hazelnuts Europe

Main hazelnut production area (worldwide): **Turkey**

- Aiming for diversification of production sites
- Increase stability of hazelnut supply

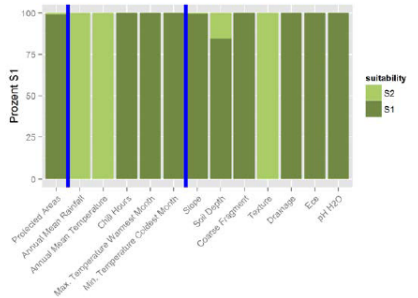


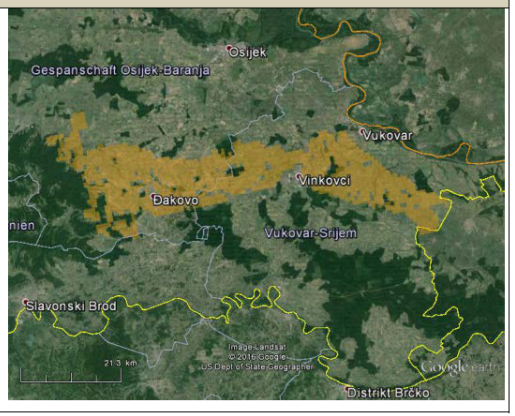


Results: validation of current growing areas
Identification of new area: Croatia

Kroatien

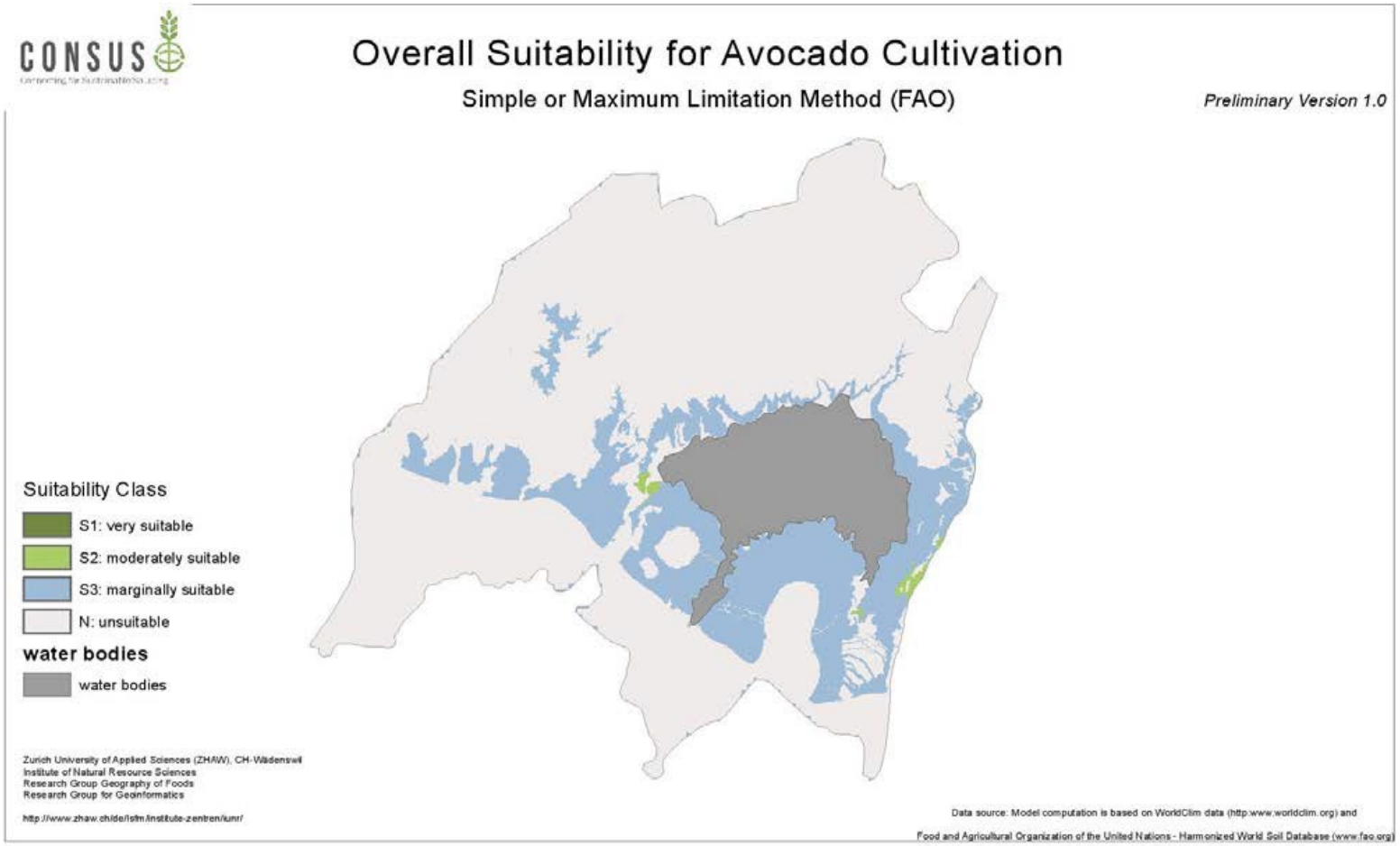
Osijek-Baranja / Vukovar-Srijem (10): 159'815 ha





Example - Avocado Guatemala

Feasibility and location analysis

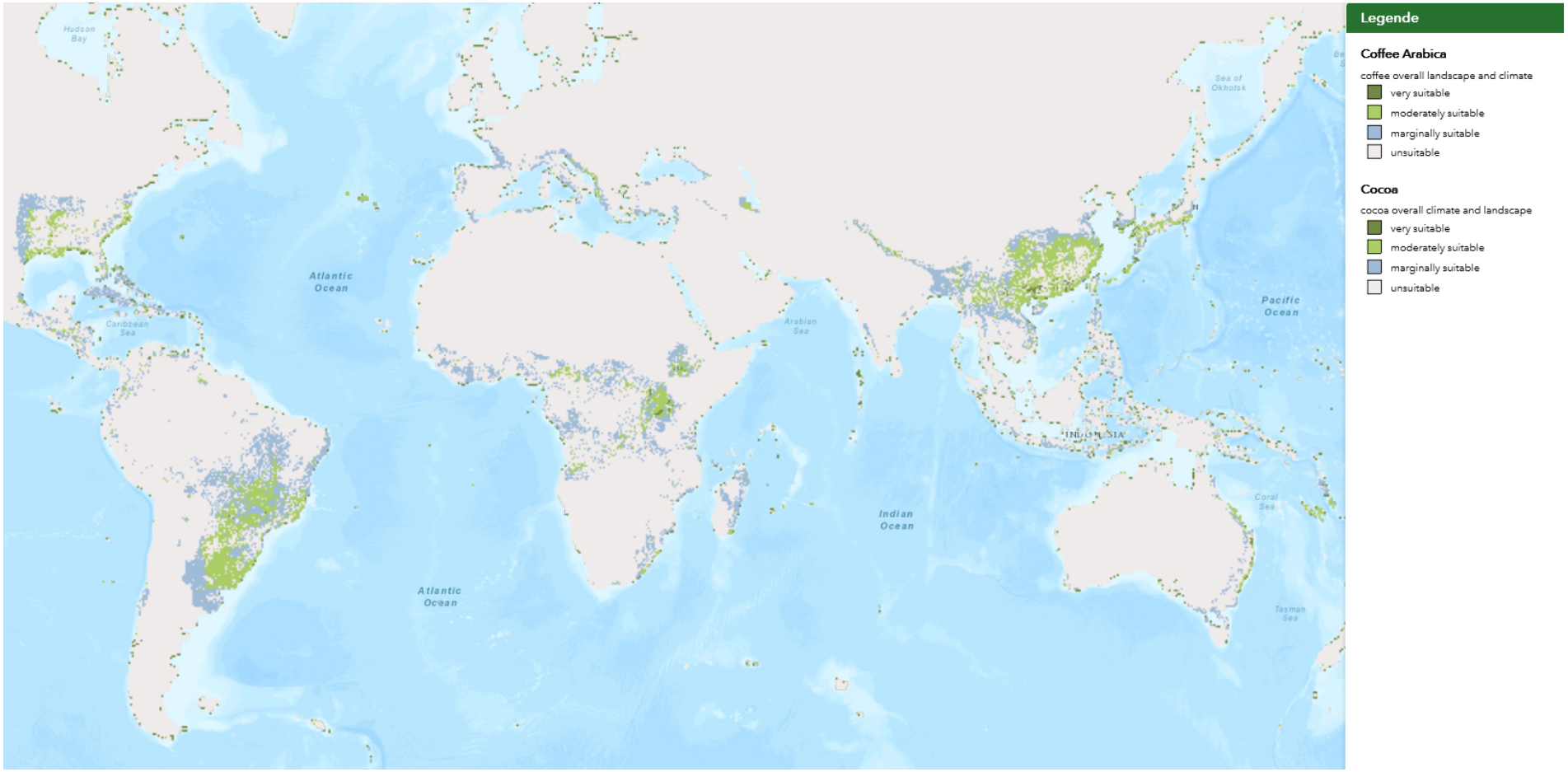


- Evaluation of potential to introduce the «Hass» avocado to the Sololá region
- Basic biophysical requirements
- Considering the socio-economic criteria of local farmers
- Key criteria: **land ownership**, **irrigation opportunities** and **motivation**

Outlook - Webtool

- Currently in Beta-Version
- «Teaser» to get farmers, processors and other stakeholders interested
- First simple database with few crops:

- Cocoa
- Coffee
- Mango
- Avocado
- Cashew
- Persimone
- Papaya
- Grapes
- Vanilla
- Goji-Berry
- Almonds
- Quinoa
- Amaranth
- Cassava
- Sweet Potato



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Next Steps

- Identification of additional data sources
- Validation of current results with on-ground activities
- Identification of future collaborations

Thank you for your attention!

Any Questions?

https://www.syngentafoundation.org

https://www.zhaw.ch/en/lsfm/institutes-centres/iunr/nachhaltigkeits-transformation/geography-of-food/consus/

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Conclusions

- Functions as a decision-support system for rural development and agribusinesses
- Flexible tool for any desired crop
- Scale can be local, regional or global
- Analysis of overall potential considering improvement measures (e.g. by fertiliser application)
- Identification of new production sites
- Identification of suitable crops on a given location
- Modelling climatic scenarios in addition
- Assessing overall feasibility and added value of agricultural plans