Knowledge transfer and ecosystem services of adaptation strategies

Climate Change Resilience in Viticulture

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KliA-Net* Viticulture at a glance

The aim of the project is to establish local and inter-municipal cooperation by creating a network of winegrowers, winegrowers‘ associations, municipalities, and other interested stakeholders. This will be developed into joint action for adaptation to climate change in viticulture using the case study of the Rheingau (Germany).

Knowledge transfer: within the network, effective, future-oriented action and implementation concepts for climate change adaptation in viticulture are developed for different stakeholders and explained on the basis of ecosystem services.

The resulting impulses lead to measures to reduce climate change-induced damage under the premise of climate protection and the best possible provision of ecosystem services.

* Climate Adaptation Network in Viticulture
**Conceptual Framework**

RESEARCH AND ANALYSIS OF LITERATURE AND PRACTICAL REPORTS
*Climate Adaptation Measures*

IDENTIFICATION AND CHARACTERIZATION OF ENVIRONMENTAL PROBLEMS
*Vineyard Management*

DPSIR Model

Ecosystem Services

IDENTIFICATION AND CHARACTERIZATION OF RELATED ECOSYSTEM SERVICES
*Vine-Agro-Ecosystem*

IDENTIFICATION OF IMPORTANCE AS THE BASIS FOR KNOWLEDGE TRANSFER
*Climate Adaptation Measures*

**Concept of Work Procedure**

Adaptation Measures Catalogue
Conceptual Framework

Climate Change Adaptation

Project KliA-Net Weinbau

Production

Landscape

Vineyard

Winery

Processing Packaging

Product Chain (Food System)

Retailing

Consumer

Ecosystem Services

e.g. Trees, Hedges, Water, Green Patches, Dry Masonry etc.

Landscape Integrating Approach

based on Vinecology (Viers et al. 2013), Multifunctional Vineyard System (Winkler et al. 2017) and Agroecosystem within a Food System (Augstburger et al. 2018)
Climate Adaptation Measures

CLIMATE CHANGE / CLIMATE VARIABILITY

- Plant
  - viticulture
  - phytosanitary
  - cultivating
- Soil
  - Tillage
  - Fertilization
  - Carbon Sink
- Water
  - irrigation
  - soil water
  - nutrients
- Biodiversity
  - species ecosystem
  - genetical
- Landscape
  - land use based
  - esthetical

Use-related, operational
Consulting
By law, instrumentally

Winemakers, Municipalities, Politics etc.
Ecosystem Services

Ecosystem services are the direct and indirect contributions of ecosystems to human well-being.

REISS ET AL. (2020): CLIMATE CHANGE RESILIENCE IN VITICULTURE
Ecosystem Services (ES) of Adaption Measures

We analyzed, identified, translated and documented 44 ES regarding the CICES 5.1 Terminology (s. Tab).

It can be shown that along the value chain in viticulture the ecosystem services to be derived mainly concern the area of local production in the landscape.

Knowledge Transfer: The ES are presented in tabular form to illustrate the adaptation measures.

Within a climate adaptation measure, this will show the impact of climate change, but also the influence of viticultural practices. Thus, disadvantageous services are also identified and described.
Knowledge Transfer

Instruments of Communication

• Project Team Meetings
• Network Meetings & Workshops
• Round Tables within Expert Committees
• Press & Social Media, Homepage
• Conference Contributions

Tools

• Adaptation Measures Catalogue
• Database (References)