Justice in the Water Energy Food Nexus:
an Analysis of the Horticulture sector in Souss Massa, Morocco

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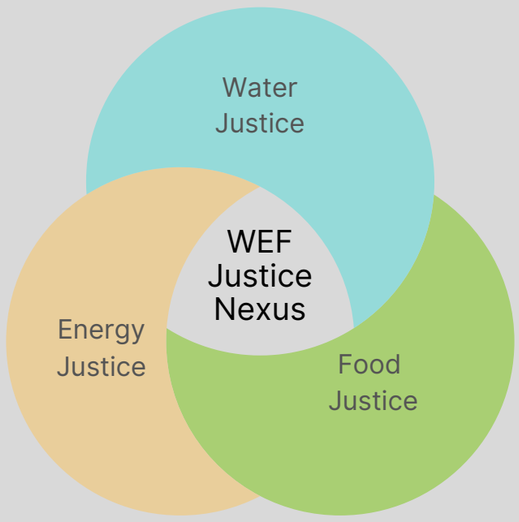
Research questions

How can **principles of water, energy, and food justice be integrated** into the WEF Nexus in the horticulture sector of Souss Massa, Morocco?

What **current and expected concerns of water, energy, and food justice** might arise in the adoption of the WEF Nexus in the horticulture sector of Souss Massa, Morocco?

How can **key stakeholders improve principles of water, energy, and food justice** in the WEF Nexus in the horticulture sector of Souss Massa, Morocco?

Theories



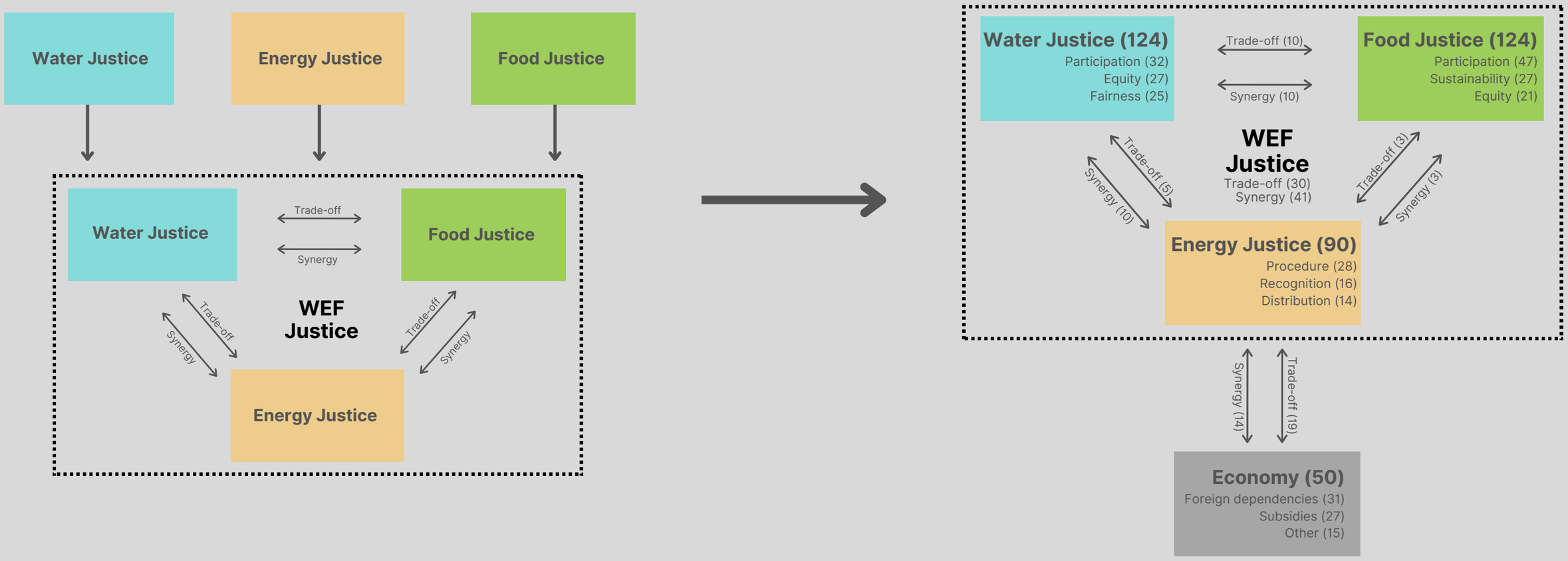
More info?

Methods

Mapping the stakeholders and key experts

Conducting (panel) interviews with stakeholders and experts

Observational research in Souss Massa



Stakeholder	**Recommendations:** Knowledge and Collaboration
Large-scale farmers	• Foster collaboration and knowledge exchange among growers • Engage in training programs and workshops to enhance skills and knowledge
Small-scale farmers	• Participate in farmers' cooperatives to share knowledge and experience • Engage in training programs provided by government agencies or research institutions • Advocate for policies and initiatives that support small-scale growers financially
Local communities	• Foster collaboration among community members, local growers, and government agencies • Engage in dialogues with local authorities advocating sustainable practices in the region • Participate in community platforms to share knowledge and experiences
Government	• Stimulate stakeholder participation beyond governmental departments • Ensure equitable access to water resources, energy services & markets *before* export • Promote water, energy, and food conservation practices (e.g. campaigns) • Promote the use of renewable energy in the agri-sector • Provide training and assistance to farmers on sustainable agricultural practices
Researchers	• Conduct further interdisciplinary research in the WEF nexus • Facilitate technology transfer and knowledge exchange between all stakeholders • Conduct policy analyses of water, energy, and food management in the region • Collaborate with institutions to develop training programs for growers • Ensure dissemination of research findings to raise awareness for the WEF nexus • Conduct participatory research, involving all stakeholders and incorporating local knowledge

Stakeholder	**Recommendations:** Technology
Large-scale farmers	• Implementation of hydroponics, drip irrigation, direct seeding, and agroforestry • Implementation of rational crop fertilisation and rotation • Implementation of renewable energy generation for irrigation, refrigeration, and drying • Improve monitoring and reporting of water and energy use
Small-scale farmers	• Adopt low-cost practices such as drip-irrigation, agroforestry, and crop diversification
Government	• Subsidising technological innovations (in water, energy, and food) in the agricultural sector • Subsidising research in technological innovations in the agricultural sector • Establish monitoring systems for water, energy, and food dynamics • Invest in improved water infrastructure and regulation of groundwater resources
Researchers	• Further research agronomic varieties suitable for Souss Massa, e.g. for high-salinity areas • Further research in precision irrigation and fertiliser systems • Further research in renewable energy solutions suitable for agriculture