

# 2022 Vision and 2019 Strategy



Monday February 25, 2019

A Global Interface

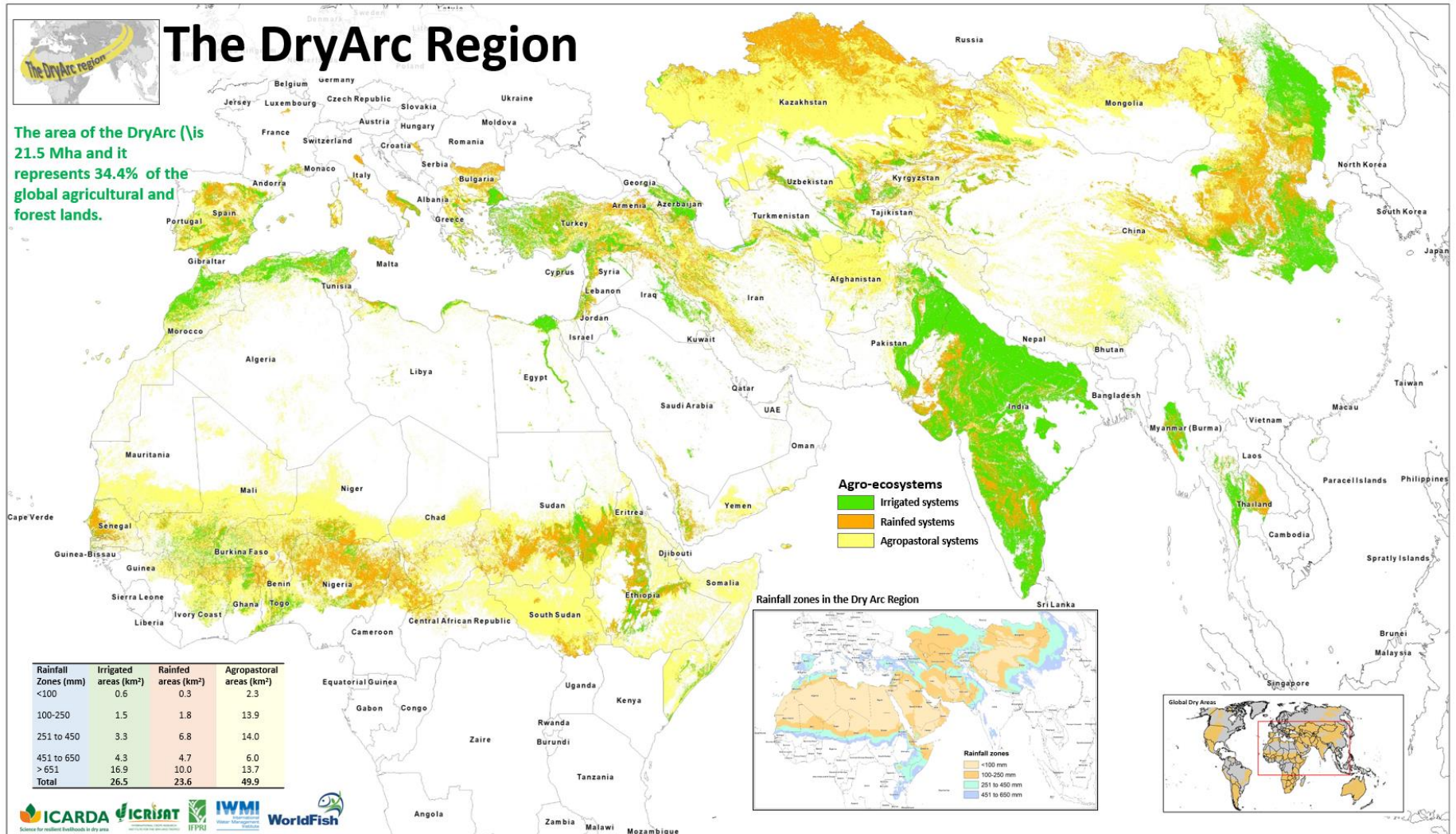
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# DryArc Region

## The DryArc Region

The area of the DryArc (is 21.5 Mha and it represents 34.4% of the global agricultural and forest lands.

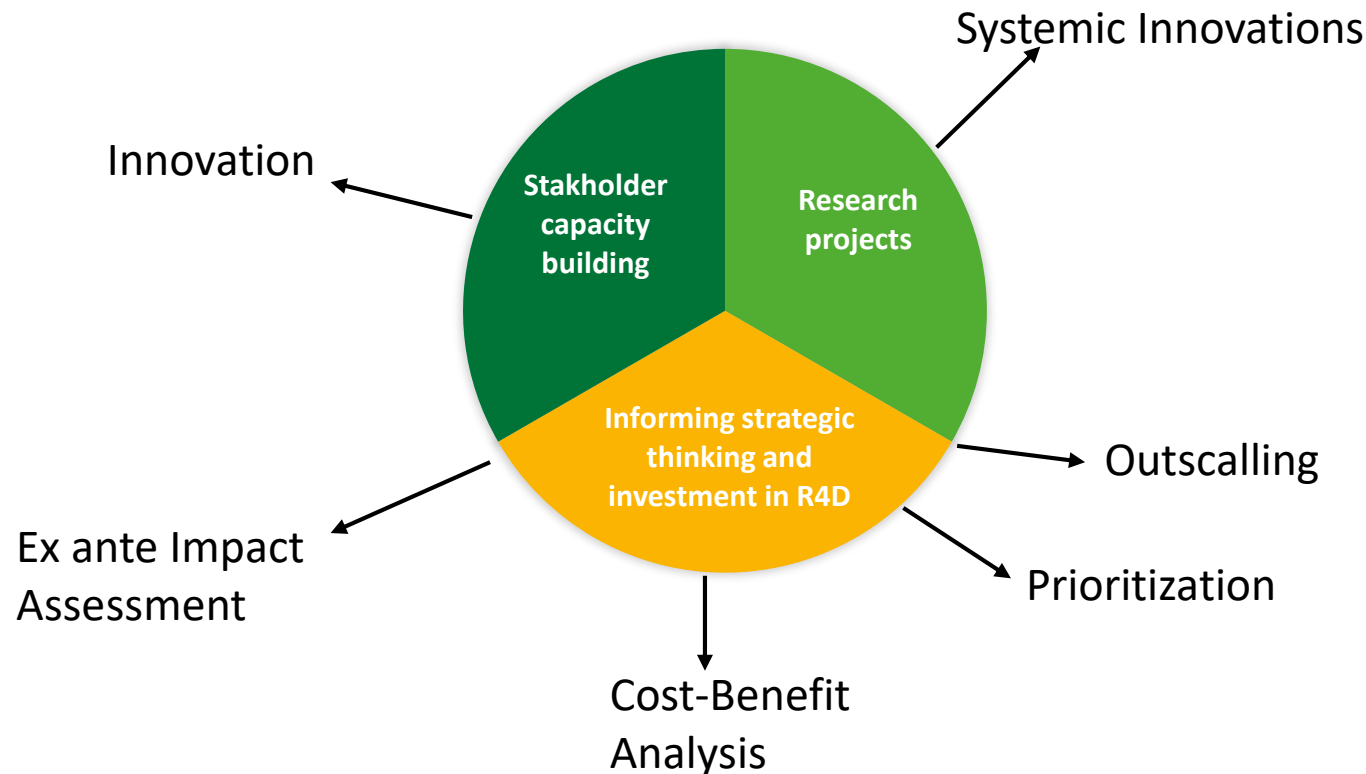




# A daunting Combination of Challenges

- Insufficient rainfall, land degradation, desertification, recurring droughts, temperature extremes,
- High population growth, widespread poverty, malnutrition and unemployment.
- Worst affected by climate change, having to cope with even drier conditions and higher temperatures coupled with an increased frequency of extreme weather events such as flooding.
- Political instability, displacement and environmental sustainability.
- With climate change and increasing migration flows, the challenges of the DryArc region are also expanding geographically, and reaching into new areas of the world.

# Informing research and development investments for sustainable and resilient agri-food systems in the dry areas





# Typical examples of questions to be addressed

1. **Can intensification of rainfed cereal-based agri-food systems in North Africa and the Sahel also increase employment?**

*Intensification technologies often reduce on-farm labor requirements but may retain talented youth to farm and increase off-farm employment.*

2. **Can irrigated crop production in Central Asia be intensified without increased exposure to income-shocks?**

*The intensification of these irrigated crop production systems depends on the quality of arable land and the availability of scarce water resources. IT-informed decisions and technologies may reduce vulnerability to economic and climate-shocks.*

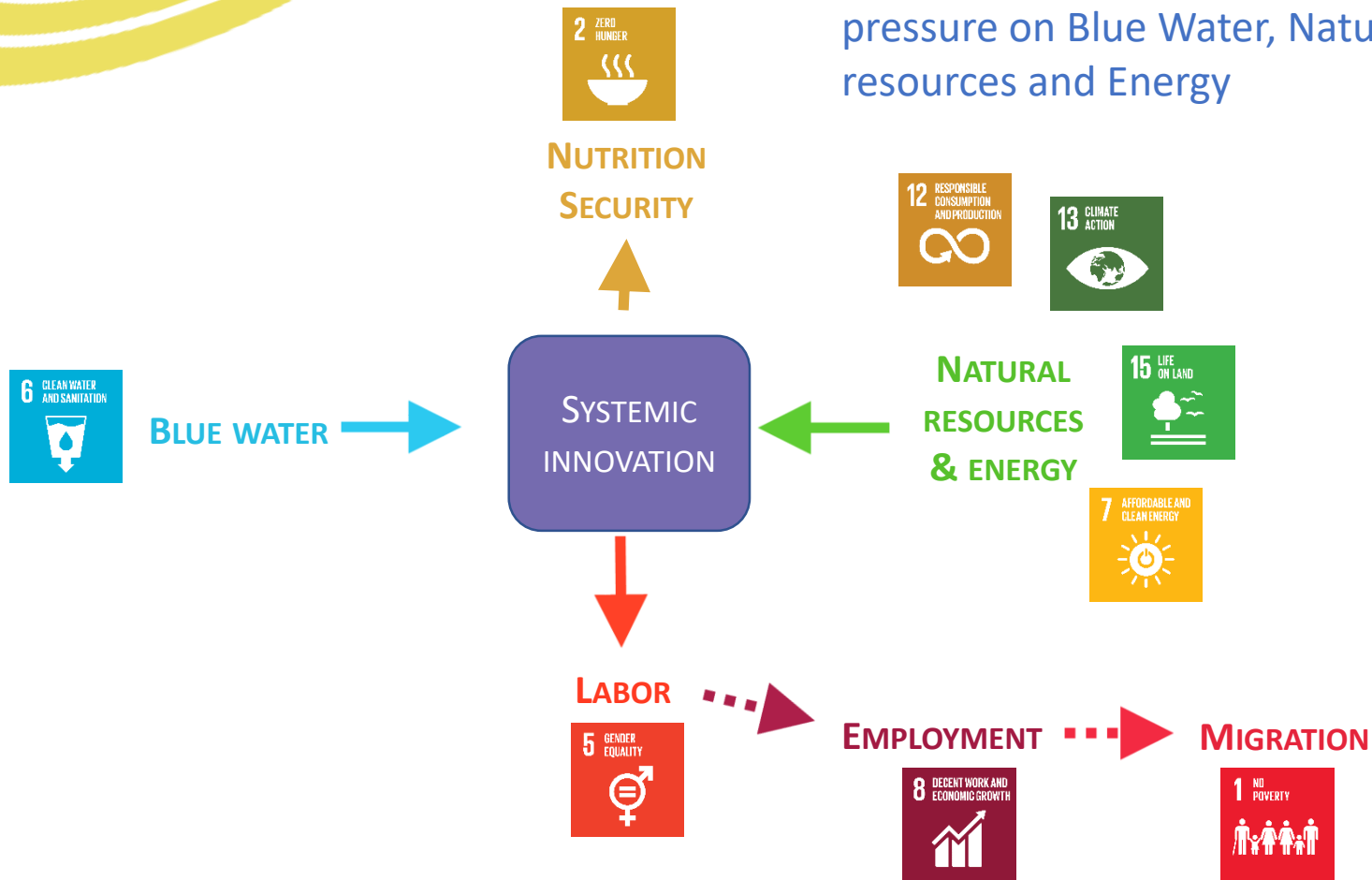
3. **How can the full potential of the dryland crop-livestock systems of Ethiopia be realized?**

*Risks of recurring floods and drought have aggravated poverty and causes of disaster and displacement. Yet, even in good years, crop yields are not reaching achievable levels because enabling conditions for investment and improved rainwater management are not in place.*

4. **Can desert farming be expanded without compromising sustainability?**

*Job creation are noticeable, but the sustainability of desert agriculture is at risk with challenges in soil fertility, water availability and salinity, harsh weather conditions, and isolation from energy sources and markets.*

**The DryArc Nexus: Systemic Innovation**  
is able to Increase Nutrition Security  
and youth Employment while reducing  
pressure on Blue Water, Natural  
resources and Energy







# Paradigms of the DryArc

1. Crop Improvement Research on its own will not support sustainable development of agri-food system, and instead **interactions** between crops, trees, soils, and livestock must be explored;
2. **Trade-offs and synergies** in resource use efficiency (especially water, energy, land, and labour) can be quantified at any level of the agri-food system;
3. Effectively **scaling-down** climate and economic drivers to the farm level; **scaling-out** proven technologies to similar ecologies; and **scaling-up** socio-economic and environmental impacts of innovations in agri-food systems can be achieved with integrated modelling and geo-referenced data;
4. Plausible and comprehensive **innovation pathways** for agri-food systems can be designed and managed to ensure stakeholder engagement, sustainability and trade-off management across SDGs;
5. The likelihood of **uptake and impact** of bio-technical innovations in agriculture is increased by the integration of socio-economic innovations (policies, institutions, communities, and markets) during the design process.

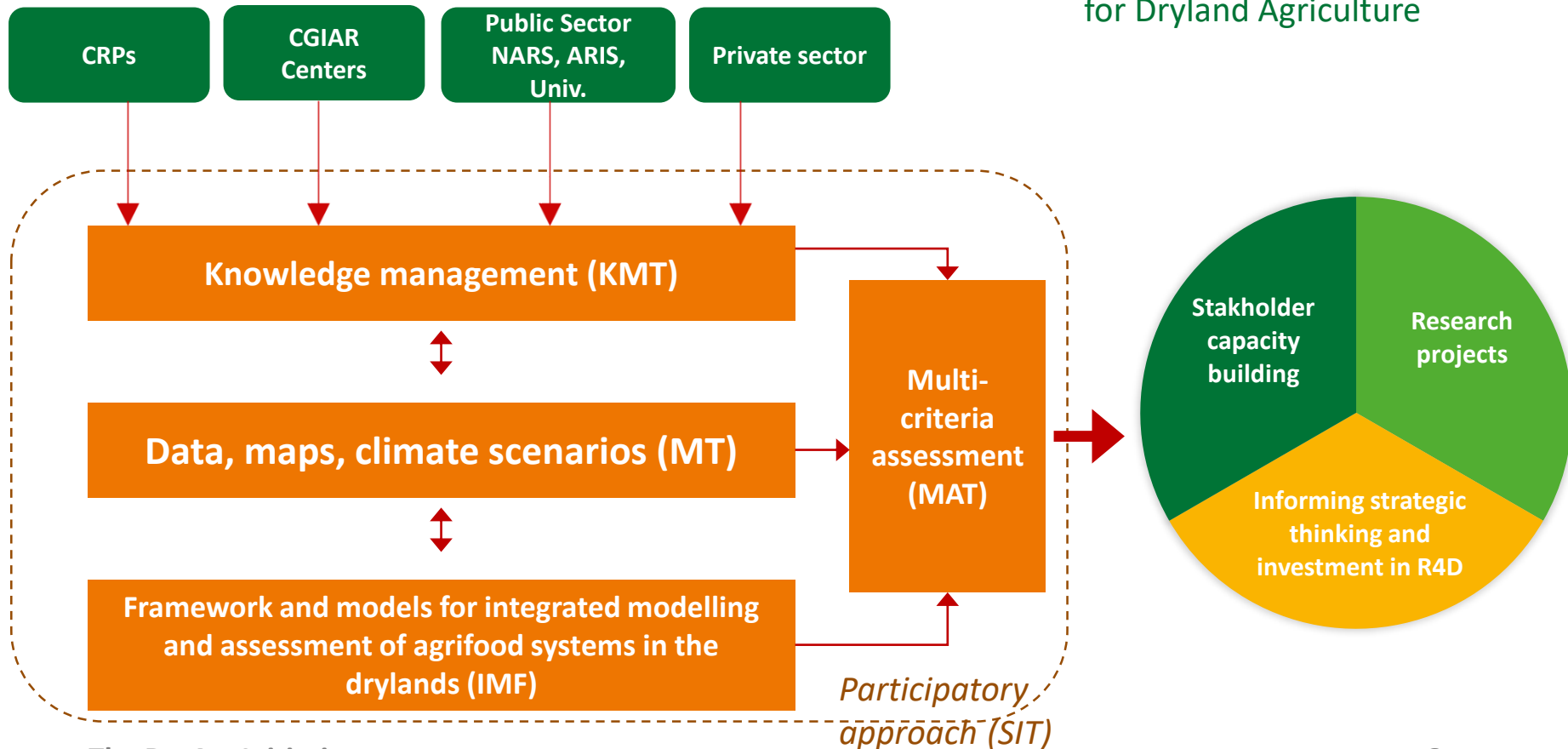
# DryArc: The Interface of the CGIAR for the Drylands

**The DryArc Interface:** a Combination of Tools for

- \* Benchmarking,
- \* Integrated Assessment
- \* Scaling of Innovations

for Dryland Agriculture

**Proven technologies (“Innovations”)**



**The DryArc Initiative**  
A Global Interface





# Think and Work Differently with the CGIAR

For the **Proof of Concept phase** (2019-2021), donors and partners can contribute to the DryArc in two main ways:

1. Support to specific problem-solving studies as part of the test cases;
2. Support to the development of the interface tools and its database of innovations.

