



CARES

Community Assessment of Renewable Energy
and Sustainability





What Does Sustainable Design Mean in the MidEast?

استدامة
estidamā



Sustainability is a new word in the Arabic vocabulary



Launched in May 2008, Estidama, which means 'sustainability' in Arabic is Abu Dhabi's sustainable buildings and communities program and aims to ensure sustainable design, operation and maintenance of all types of buildings and communities in the Emirate.

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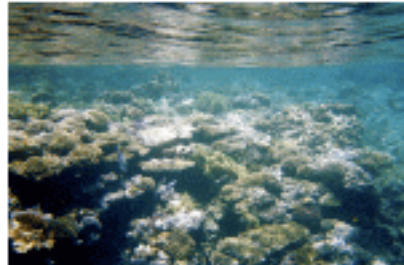
What Does Sustainable Design Mean to Saudi Arabia?

- Although the concept of sustainability is indigenous to much of the Middle East through the building practices of traditional dwellings and settlements, the meaning of sustainability in the current Saudi context remains ambiguous.

إستدامة
estidama



KAUST Launches Sustainability Section on Web Site

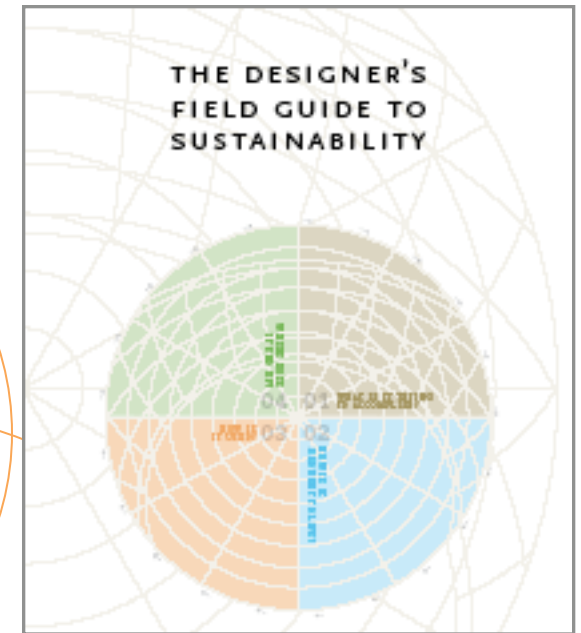
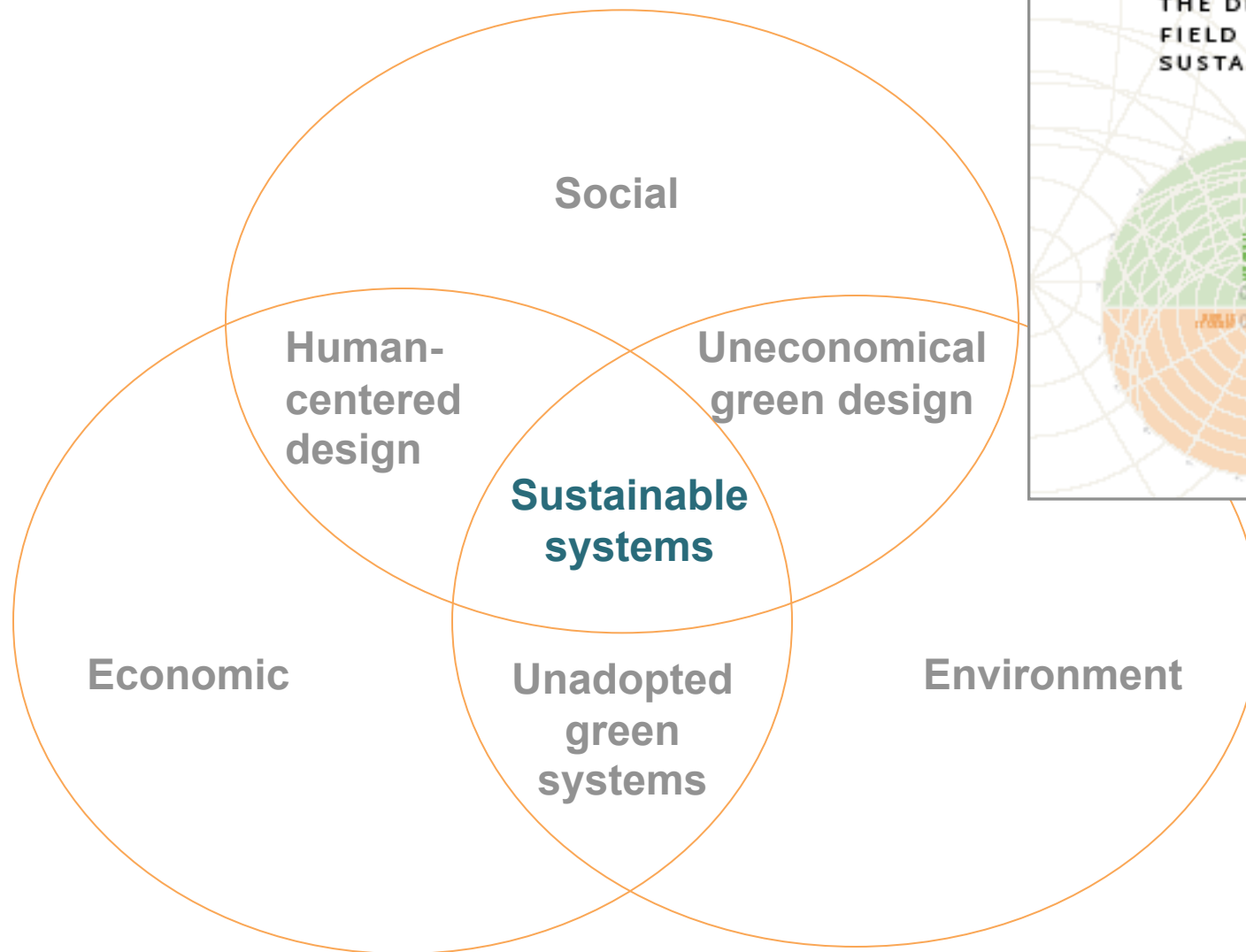


Sustainable development is integral to KAUST's overall mission of research and innovation, and an emphasis on

sustainable practices is woven throughout the University's research agenda, campus design, and operations.

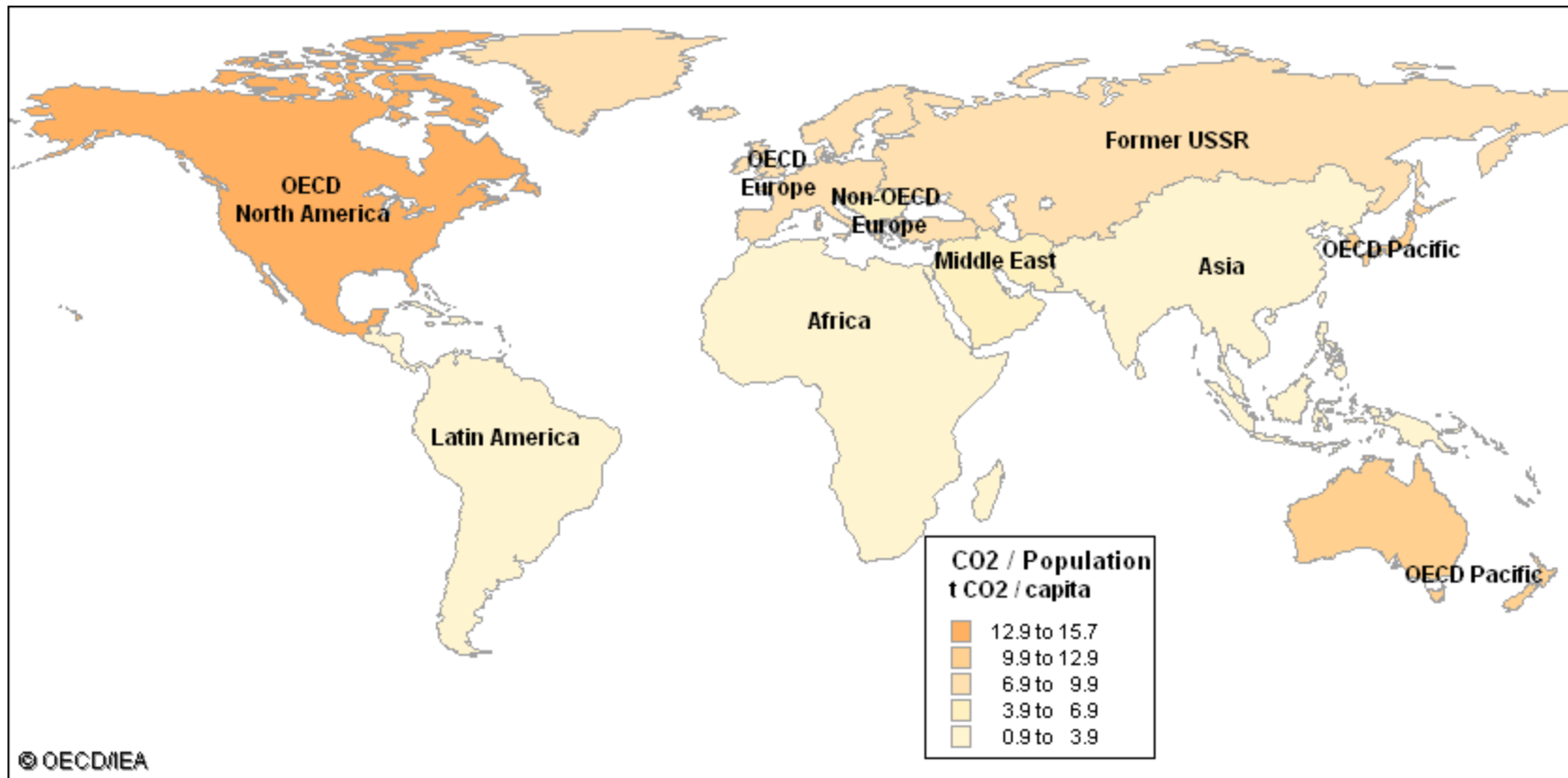
Innovative building and campus designs will conserve resources like water and electricity through increased efficiency as well as materials reuse and recycling. KAUST will make the most of the unique desert climate of Saudi Arabia, and act as a living laboratory to inspire cutting-edge discoveries and demonstrate environmentally responsible sustainability methods.

Tripple (Integrated) Bottom Line for Innovation Success



<http://sustainable-engineering.berkeley.edu/>

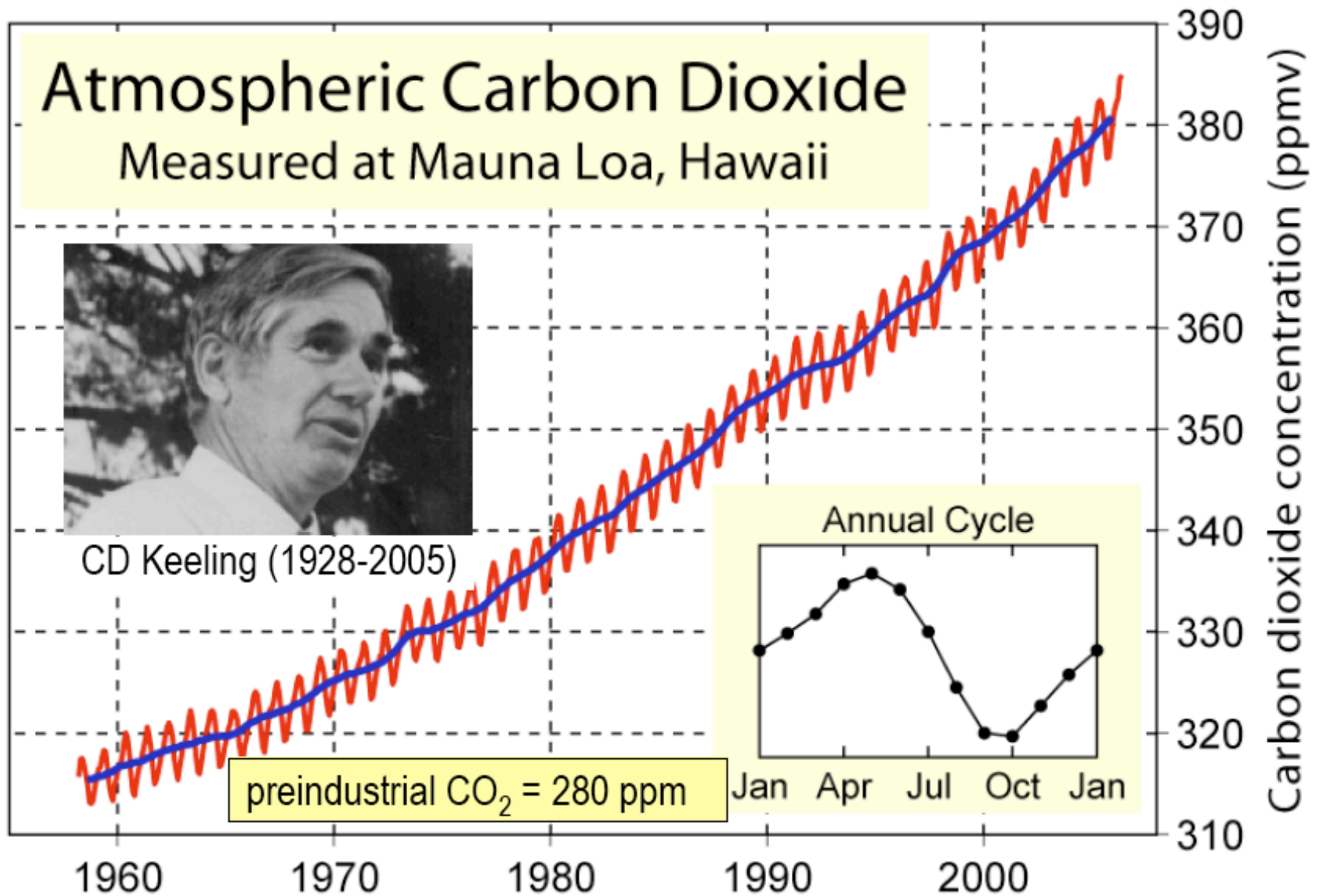
Environmental Drivers: Greenhouse gas

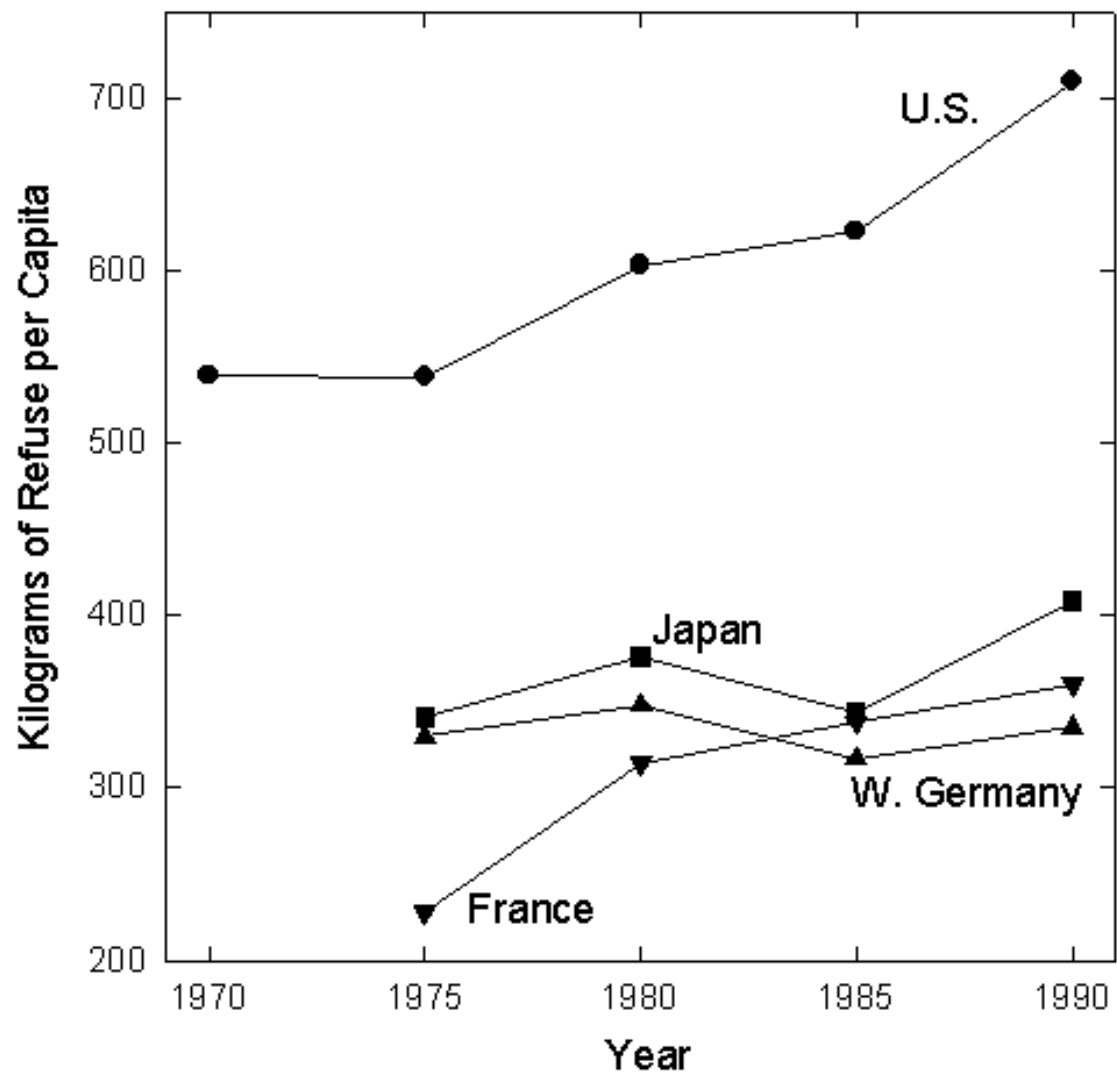


Sources: International Energy Agency (2006), U.S. Department of Energy (2006)



CO₂ levels are rising; CO₂ is a potent GHG



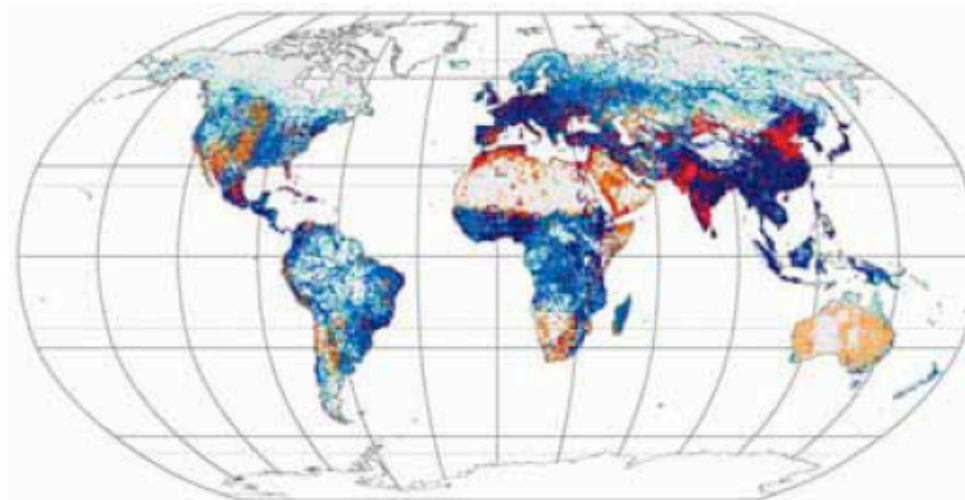


Note: Waste categorization and measurement vary considerably from country to country.
Source: Organization for Economic Cooperation and Development, *Environmental Indicators* (Paris: OECD, 1991 and 1994).



Environmental Drivers: Water demand

Population (in thousands) above (reds) and below (blues) water stress threshold (RWSI=0.4)



“Embedded” water

Food

- 1kg of rice: 200 litres
- 1kg of potatoes: 500 litres
- 1 mug of beer: 375 litres
- 1 pint of milk: 250 litres
- 1 egg: 450 litres
- 1 loaf of bread: 550 litres
- 1 kg of butter: 18,000 litres

Industry and consumer goods

- 1kg of cotton: 5,300 litres
- 1kg of wool: 200,000 litres
- 1 car: 150,000 litres
- 1 computer chip: 75 litres
- 1 liter oil – 1850 liters water

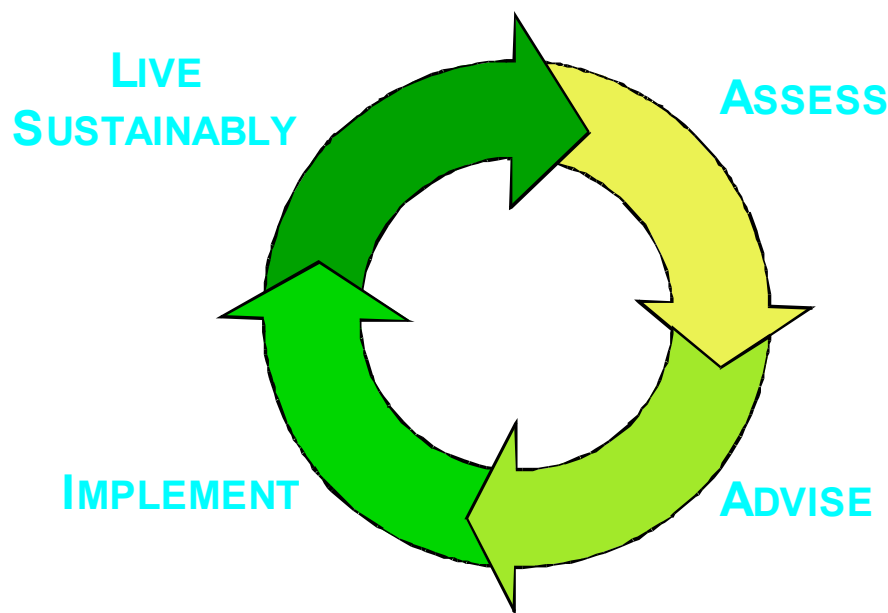
Source: United Nations World Water Development Report 2 (2006)

Source: WBCSD (2006)

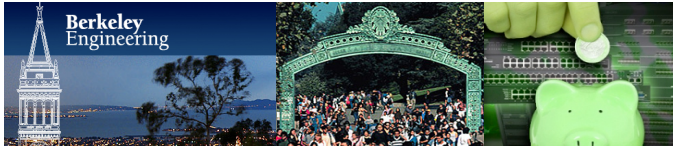


Community Assessment of Renewable Energy and Sustainability (CARES)

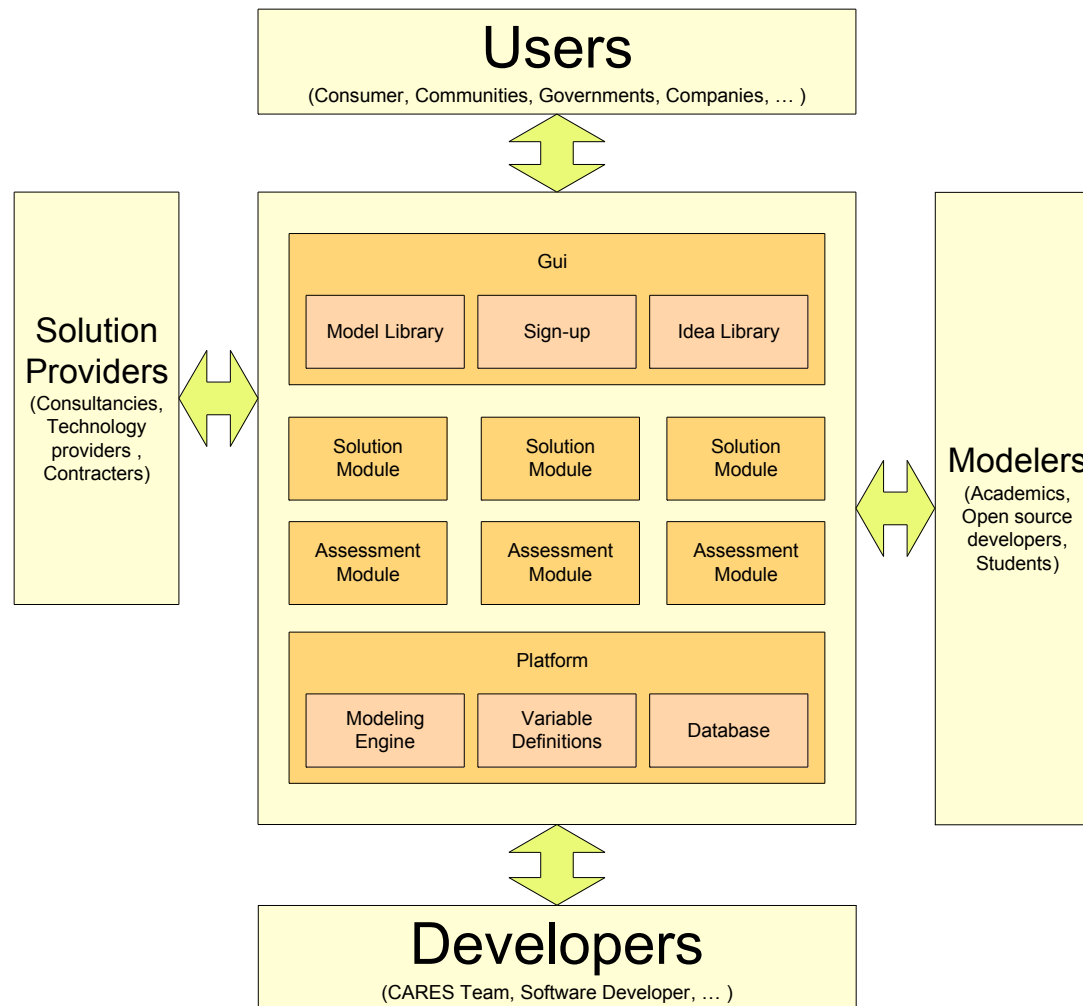
- Gives consumers, communities, governments and corporations *access to the latest data, models and solutions will accelerate adoption of sustainable solutions*, thus enabling communities to reduce their environmental footprints.



- Academics and Researchers
- Community Leaders
- Government Policy Makers
- Manufacturers and Retailers
- International Partnerships



CARES Open Source Infrastructure





CARES Foundation

- Sustainable living requires having access to accurate environmental data and geographically-relevant and culturally-sensitive implementable solutions.
- Research shows that people would be more eager to adopt a sustainable lifestyle if they are able to collaborate, share and work together with others.



CARES Research

- Conduct user needs assessments of individuals, communities, and universities within the KSA in areas of sustainability.
- Develop sustainability metrics to evaluate the sustainability of individuals, communities, and universities within the KSA.
- Identify sustainability assessment tools to quantify the current sustainability levels and the energy consumption, water consumption, and climate changing GHG emissions associated with the activities of individuals, communities, and universities within the KSA.



CARES Research, Contd.

- Develop a technology and infrastructure roadmap in the areas of sustainable energy, carbon management and water utilization (e.g., solar cells, solar hot water heaters, grey water, wind turbines, energy-efficient consumer products) for the KSA
- Create an online system that will contain a database of the research findings, recommendations, and suppliers within the Middle East to enhance the implementation of sustainable solutions proposed by this research project in the KSA.



Possible Collaboration Between DAH-UCB

- Develop database for Saudi Arabia.
- Conduct user needs studies and identify usability factors.
- Create conceptual designs of sustainable products or building features.
- Develop case studies shown to be effective in the Middle East.
- Prototype and test website.

Engineering Pathway Collection

www.planetcare.org



Community Assessment of
Renewable Energy and Sustainability

Grade/Audience

Keywords

All

GO

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CARES: Open Source Portal for Sustainable Solutions.

Our mission is to enable consumers and stakeholders to make informed decisions about sustainability and renewable energy technologies.



Sustainable solutions meet the needs of the present without compromising the ability of future generations to meet their own needs. Our view is that access to the latest data, models and solutions will accelerate adoption of sustainable solutions.

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