Key Competencies in Sustainability

Educating Future Change Agents

A Research Project of

&

Focus Group, December 2, 2016

Defining Key Competencies?

- Competencies, skills, abilities, etc.
- *Key* competencies are critically important for *sustain-ability* efforts
- Applicable to *all* professions
- “A complex of knowledge, skills, and attitudes that enable successful task performance and problem solving on real-world sustainability challenges, and opportunities”

The Framework

Systems Thinking Competence

Futures Thinking Competence

Values Thinking Competence

Strategic Thinking Competence

Interpersonal Competence

© icons by SSFT

The Framework

Systems Thinking Competence

Futures Thinking Competence

Values Thinking Competence

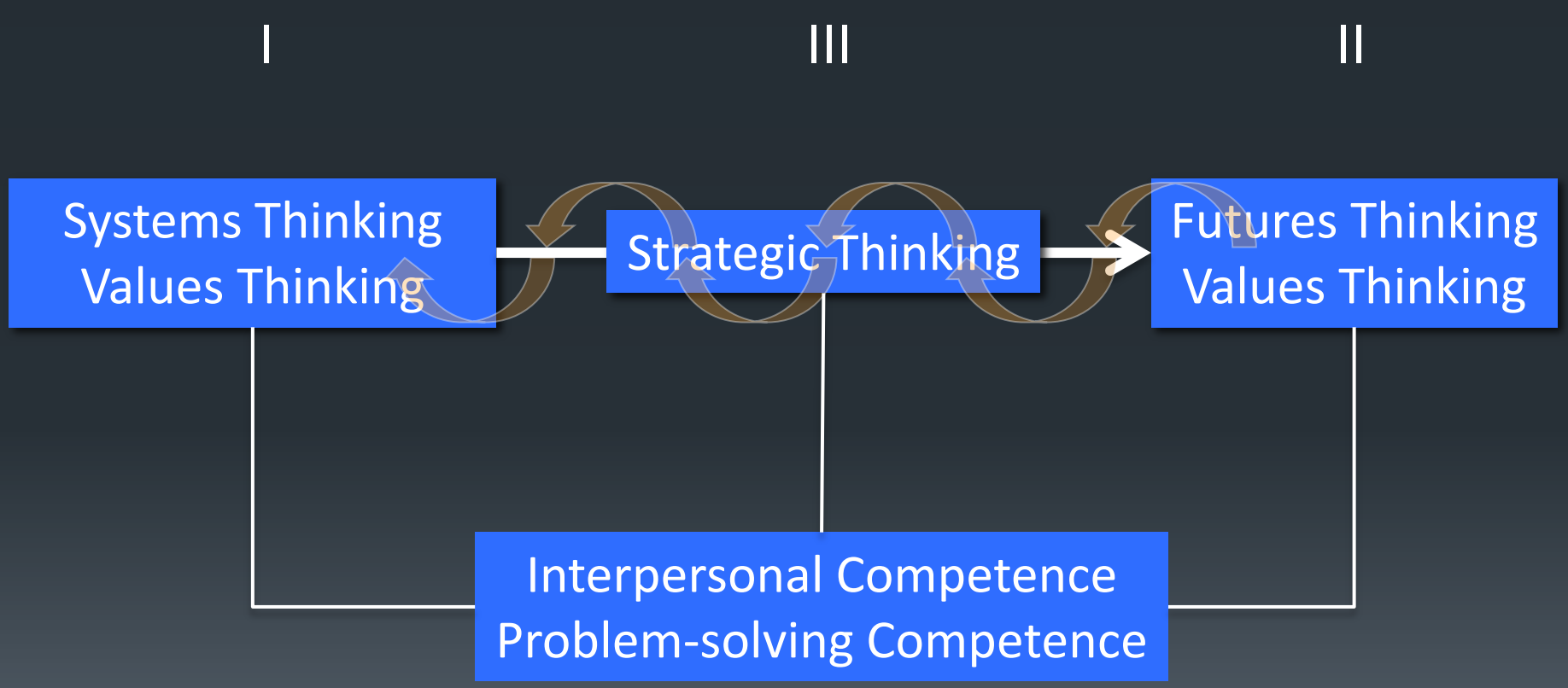
Strategic Thinking Competence

Interpersonal Competence

Problem-Solving Competence

© icons by SSFT

The Underlying Competencies



Basics

- **Interpersonal Competence:** Ability to work in teams, and understand, embrace, and facilitate diversity among cultures and social groups. Interpersonal competence is a basic ingredient in each of the other competencies.
- **Systems Thinking Competence:** Ability to analyze sustainability problems and solutions cutting across different domains and scales; considering agents, cause-effect structures, cascading effects, inertia, feedback loops, etc.
- **Futures Thinking Competence:** Ability to anticipate how sustainability problems and solutions might evolve over time, considering alternative development pathways for current systems and crafting coherent and plausible pictures of the future.
- **Values Thinking Competence:** Ability to collectively map, specify, apply, reconcile, and negotiate sustainability values, principles, goals, and targets.
- **Strategic Thinking Competence:** Ability to design and implement transformational (systemic) intervention and transition strategies toward sustainability.

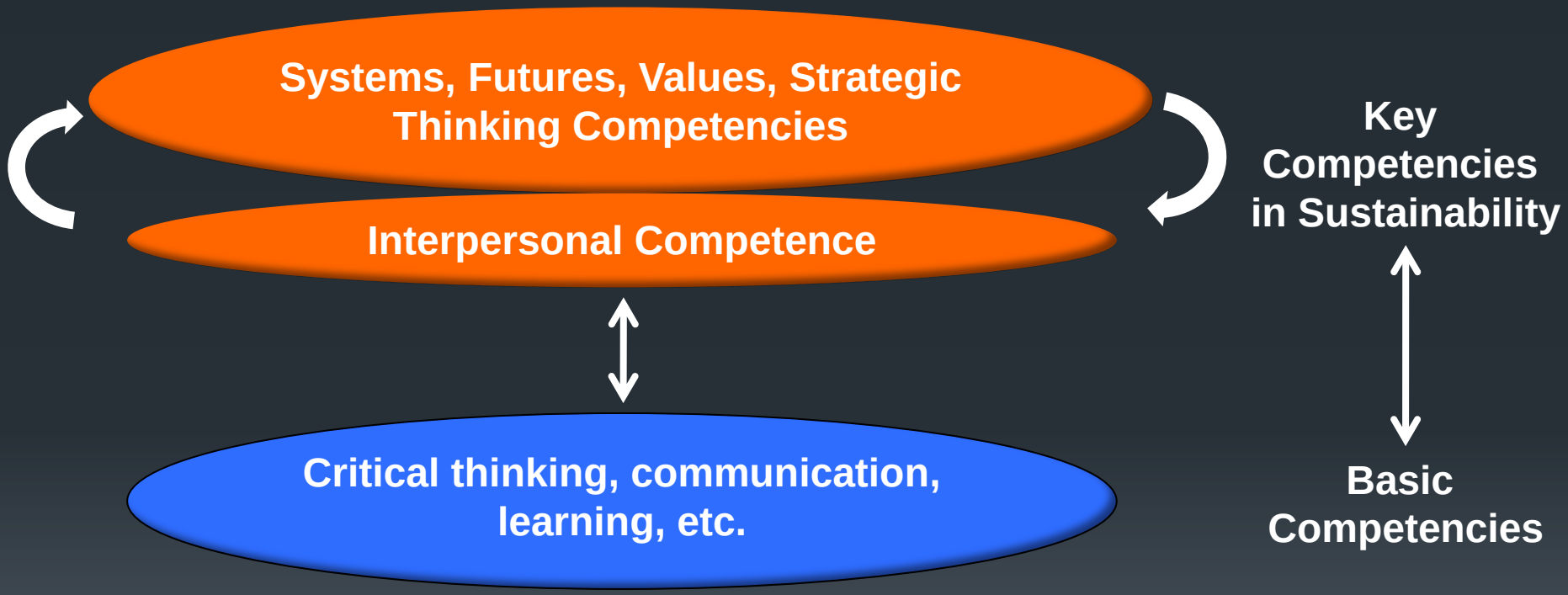
Example: The Watershed

Working with private landowners (ranchers, developers, farmers, fossil fuel producers, etc.) to fund and implement stream/watershed mitigation and restoration projects. Negotiation/consideration of trade-offs based on targets and goals for project, fiscal constraints, landowner/stake-holder values, and government concerns (municipality, county, state, tribal nations).

Example: The Watershed

Activities/Processes/Procedures	Key Competencies
• Oversee contracting and project management for stream and wetland restoration and mitigation projects including federal permitting • Prepare grant proposals to seek funding for restoration and mitigation projects	• Systems-thinking competence (structure of challenges, mitigation impacts) • Futures-thinking competence (planning) • Strategic-thinking competence (management) • Values-thinking competence (goals and targets) • Interpersonal competence (stakeholder engagement)
• Strategic outreach – identify groups for education opportunities such as targeted workshops for oil and gas producers • Provide hands-on educational experiences for students (K-16) and community groups	• Strategic-thinking competence • Interpersonal competence • Values-thinking competence (outreach)
• Provide support and training to volunteer citizen science groups	• Strategic-thinking competence • Interpersonal competence • Values-thinking competence (environmental justice, cultural values)

Basic vs. Key Sustainability Competencies



References

- Wiek, A., Withycombe, L., & Redman, C.L. (2011). Key competencies in sustainability – A reference framework for academic program development. *Sustainability Science*, vol. 6, no. 2, pp. 203-218.
- Wiek, A., Withycombe, L., Redman, C.L., & Banas Mills, S. (2011). Moving forward on competence in sustainability research and problem solving. *Environment: Science and Policy for Sustainable Development*, vol. 53, no. 2, pp. 3-12.
- Wiek, A., Bernstein, M., Foley, R., Cohen, M., Forrest, N., Kuzdas, C., Kay, B., & Withycombe Keeler, L. (2015). Operationalising competencies in higher education for sustainable development. In: Barth, M., Michelsen, G., Rieckmann, M., Thomas, I. (Eds.) (2015). Handbook of Higher Education for Sustainable Development. Routledge, London. pp. 241-260.