Science Literacy Framework		
Revised Fall 2021		
Mission	An enhanced capacity, both at the individual and collective levels, to make decisions grounded in science-informed analyses of complex, real-world systems and their associated challenges	
Cross-cutting Themes	FEWSS (Food, Energy, Water, and Societal Systems)	
	Science-Informed Decision Making	
	Community Science & Experiential Learning	
	Systems Thinking	
	Diversity, Equity, and Inclusion	
Goals	Improved science literacy among all UNL undergraduate and graduate students through development of innovative programs at the FEWSS Nexus, and the integrated stewardship of agriculture and natural resources.	
	PK-12 students are prepared for successful careers and a lifetime of science-informed decisions through the development of FEWSS models for science education and exploration.	
	Inform and engage partners and stakeholders about current programs and contemporary research	
	Empower the public to interpret, reason, and make decisions about challenging issues	
Audience	Core IANR Science Literacy team to guide program direction	
	IANR faculty to empower participation in Science Literacy goals	
	Broader community to provide transparency in decision making and goal alignment	
Alignment with University Programs	N2025	We believe in growing flexible, nimble and strong minds. Educating students and preparing them for the workforce is a core mission of the University of Nebraska. Technology, demographics, and many other factors have led to significant changes in the way knowledge is distributed and acquired. Broaden Nebraska's engagement community, industry, and global partnerships. Engagement brings Nebraska to the world, and the world to Nebraska through a university where students, faculty, staff and alumni are actively engaged across Nebraska and beyond.
	UNL Grand Challenges	Increasingly, scientific and engineering advancements raise ethical questions or are perceived as at odds with religious or political beliefs, making space for individuals to question the credibility of science and be susceptible to misinformation/disinformation. Scientists and engineers have an opportunity to address these issues at the science-society interface through education and communication that advances scientific and technological literacy.
	Nebraska System Strategic Priorities	A growing, thriving University of Nebraska depends on the voices, ideas, and success of all members of our community. We must be a University for everyone—a place where diverse backgrounds and ideas are welcomed and celebrated, where robust dialogue is encouraged, and where we are intentional and transparent in exploring how we can be a better place to learn, work, and study.
		Recognizing that we can't be successful alone, we will invest our time in cultivating partnerships that will advance our work—between campuses, with donors and alumni, elected leaders, our higher education partners, and with all Nebraskans, who collectively are the single largest investor to the University of Nebraska every year.

Higher Education		
Goal:	Improved science literacy among all UNL undergraduate and graduate students through development of innovative programs at the FEWSS Nexus, and the integrated stewardship of agriculture and natural resources.	
Objectives	**Outcomes**	**Strategies**
Develop an innovative, effective, and inclusive CASNR core curriculum that connects undergraduate curricula and experiences to real-world situations and examples.	Smart and sustainable growth and enrollment. Support inclusive excellence and student success including the development of support programming that leads to an increase in retention of IANR students by 5%.	
	Partner with Nebraska Community Colleges and Tribal Colleges to improve science literacy among college students.	
		Fully integrate FEWSS and Science Literacy themes through existing CASNR courses. Focus on cross-disciplinary learning and skill development about critical issues and preparation to solve challenges of the future related to agriculture, natural resource use, policy and management, and long-term global needs and sustainability.
Collect evidence important to CASNR success in terms of innovation, teaching strategies, student learning, student success, experiential learning and inclusive excellence.	Increased data collection and evidence-based instruction and instructional programming, at the level of individuals, classrooms, curriculum and programs, ranging from scholarly activity within discipline-based education research (DBER) linked to theory and applied research in the scholarship of teaching and learning (SOTL), to less formal evidence to evaluate and inform instruction within a single classroom or program.	Increased proposals submitted for extra-mural funding for education research.
		Participation in scholarly conferences to disseminate research and scholarly activity.
		Evaluation of undergraduate and graduate programs.
		Increased use of evidence-based instructional strategies within CASNR courses, and participation in programs such as Peer-Review of Teaching Project that support instructors in evidence-driven instruction.
Develop transdisciplinary programs at the FEWSS Nexus that explores and identifies solutions to current and future societal issues (e.g., climate change, invasive species, biotechnology, obesity, etc.).	UNL will develop and increase education research and teaching collaborations with other Big Ten universities, land-grant institutions, HBCUs, MSIs (minority serving institutions), and Tribal Colleges and Universities within programs that focus on the FEWSS Nexus.	
	Through participation in coursework, experiential learning opportunities, and campus programming, UNL students will be prepared as community members and professionals to make informed decisions related to the FEWSS Nexus.	Increase experiential learning opportunities within the core curriculum (such as SCIL 101) and throughout the CASNR student experience; increase service-learning opportunities and engagement with communities (such as in ALEC 102 and the Rural Fellows program).
Position UNL as a global leader around innovative science education programs at the FEWSS Nexus.	Expand the reach of our educational services and ability to serve new audiences, such as middle and high school students through Nebraska Now, and professionals through non-credit credentialing and badging.	Expanded credit-bearing and non-credit bearing course availability for a diverse groups of students (for example in grades 6-12 and professional students).
	UNL will be recognized as a leader in using evidence-based innovative and inclusive classroom practices that focus on student-centered learning.	Become national leaders in discipline-based education research that furthers our understanding of how undergraduate students learn within the context of the FEWSS Nexus through core faculty education research appointments and hiring and by supporting IANR faculty new to science education research who are interested in developing a research program.

PK-12		
Goal:	PK-12 students are prepared for successful careers and a lifetime of science-informed decisions through the development of FEWSS models for	
Objectives	**Outcomes**	**Strategies**
Partner with educational entities to provide programming in alignment with cross-cutting themes for PK-12 educators or student audiences.	Greater collaboration with external and internal partners to adopt FEWSS as models for science education.	Partner with IANR faculty to allow for PK-12 education/outreach programming aligned with cross-cutting themes.
	Increased grant funding to support FEWSS educational activities.	Partner with faculty, funding agencies and educators to develop fundable projects.
	Half of the Educational Service Units will provide professional development on systems thinking, community science, and STEM-informed decision making with FEWSS as contextual models.	Collaboration with ESUs to deliver programming. Regular communication with ESUs and relevant educational partners to develop relationship & identify opportunities.
Provide professional development offerings in alignment with cross-cutting themes (FEWSS models, Science-Informed Decision Making Community Science & Experiential Learning, Systems Thinking, Diversity, Equity, and Inclusion)	More educators enrolled in IANR online degree programs (e.g., Science for Educators specialization, digital badging).	Offer courses for pre- and in-service teachers focused on FEWSS as educational models.
	Teachers show increased awareness and/or understanding of cross-cutting themes and strategies for classroom implementation.	Present about programs/opportunites at educator/practitioner conferences.
		Publication of programs/curriculum/DBER/strategies in practitioner-oriented spaces.
		Partner with teacher preparation programs and directly with educators to integrate FEWSS into science pedagogy courses.
	More educators participating in campus or field-based FEWSS research (focus on systems-thinking, decision making).	Partner with IANR faculty on grant-funded projects which allow for educators to participate in campus or field-based FEWSS research.
Provide experiential or place-based learning opportunities for K-12 students to apply systems thinking and STEM-informed decision-making skills to be empowered as change agents and creators instead of only consumers within FEWS systems.	Increase the number of K-12 students applying systems thinking and STEM-informed decision-making skills through educational experiences (such as summer camps, formal classrooms, concurrent course credits, digital badges).	Provide learning opportunities focused on systems thinking, community science and experiential learning, and STEM-informed decision making for youth organizations (FFA, 4-H, after school programs, Emerging Ladies Academy, Girls Up LPS, Girls Inc. etc.).
		Engage new K-12 youth audiences in Science Literacy experiences.
	More resources and curricula available for youth learning of FEWSS concepts.	Integrate FEWSS curricula with existing programs and develop additional FEWSS-focused 4-H School Enrichment.
		Streamline sharing of IANR research with broader communities.
	Increased numbers of students pursuing or planning to pursue FEWSS academic degree programs and careers.	Develop and market concurrent credit opportunities for secondary, home-schooled, and gifted students.
		Develop & implement educational resources highlighting DEI concepts.
Conduct discipline-based education research	Build understanding of how PK-12 students and educators learn within FEWSS contexts. Greater understanding of how SEL impacts decision making.	Develop relationships with education researchers. Pursue additional training and PD on education research with PK-12 audiences.

Partners		
Goal:	Inform and engage partners and stakeholders about current programs and contemporary research	
Objectives	**Outcomes**	**Strategies**
Develop a consistent message that encompasses the important relationship of FEWSS with natural resources, the environment and society.	Public and state government agencies will recognize the UNL as a source for FEWSS research and information. Agencies report increased ability to access content experts and relevant information when facing FEWSS challenges.	Develop courses and accessible resources for partners that inform them of current research and outreach related to FEWSS.
Coordinate efforts among statewide partners to collaborate in the development, delivery and assessment of innovative and effective educational programs on FEWSS focused on real-world challenges.	Increased grants and contracts with partners related to IANR science literacy outcomes and mission. Increased partnerships with Game & Parks, NRDs, and commodity groups.	Offer professional development opportunities for partners focused on using their educational programming related to FEWSS as models for K-12 science instruction. Work with partners to encourage use of materials and resources related to increasing science literacy. Coordinate PK-12 outreach efforts between UNL and partner organizations that support educational programming related to FEWSS. Collaborate with partners to create and share FEWSS resources.

Public		
Goal:	Empower the public to interpret, reason, and make decisions about challenging issues	
Objectives	**Outcomes**	**Strategies**
The public will have simple and equitable access to UNL as the premiere knowledge center on issues related to the FEWSS nexus.	Increase in the number of views/uses of IANR online and mobile media resources related to FEWSS	Develop interactive media that allow life-long learners to explore and consider key issues in FEWSS.
		Conduct needs assessment regularly to ensure we are providing resources that both meet the needs of our audience and that our audience is representative of state and regional demographics.
Encourage agency in Nebraskans to interact with complex systems and make STEM-informed decisions.	Increase numbers of Nebraskans reached by FEWSS educational programming	Develop an interactive, hands-on exhibit at the Lincoln Children's Zoo focused on FEWSS.
	Increase awareness of Nebraskas in the relationship between complex FEWSS and DEI work	Develop the STEM Learning Center at ENREC (Eastern Nebraska Research and Extension Center).
		Develop FEWSS Cafe-like program to reach broader Nebraska community through relational sharing of FEWSS skills and habits with the goal of reaching 5 Nebraska Communities per year by 2025.
		Develop FEWSS eXtension courses for life-long learners.
		Establish a partnership between community-scientists and UNL faculty and staff to educate and engage the public on issues related to FEWSS by engaging them in data collection efforts designed to contribute to key issues of importance to science and Nebraska.
Equip community leaders to proactively address emerging FEWSS issues in their communities.	Increase number of Nebraskans are exposed to the entrepreneurship opportunities based on FEWSS research	Promote an increased focus on service learning in undergraduate courses to align with N2025 goal to increase student service hours.
	Expand the number of participants in the Master Naturalist, Community Science programs, and other related programs	Incentivize faculty engagement in service- oriented activities through web-site stories and other means.
	Increase faculty engagement in service- oriented activities connected to their research areas such as https://thrivingearthexchange.org/	Support FEWSS and Sci LIt themes in statewide programs such as Master Naturalist, Master Gardeners, etc.