Embedding Indigenous Knowledge with Sustainability

Through Higher Educational Curriculum

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Abstract

Incorporating a Sustainability (S) focus curriculum through a sustainability lens, across all degree pathways in higher educational institutions and using Indigenous Knowledge as the foundational learning platform can increase successful student learning outcomes. By realizing shared values of open communication, respect and diversity, and high expectation of knowledge explorations; Science, Sustainability, and Indigenous Knowledge systems can build upon curriculum that supports the college, students, our community, and global awareness of unsustainable practice. Higher education institutions of learning have relied mainly on empirical evidence that supports reasoning and logic while Indigenous Knowledge systems uses experiential observations and learning. Being Indigenous Native Hawaiian and doing academic research from scholarly works of Native Hawaiians and their methodology in Science observations; I realized that a sustainability systems model share common value systems, but there is a disconnection between these two powerful systems. However, building a coalition of experts in each field of study can creates a new paradigm in learning through curriculum as a holistic approach to systems thinking. All of the key components to creating a Sustainability focus curriculum is already in place at Universities, and now is the time to bridge them together that can be achieved through a collective shared values.

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I.   Executive Summary

The University of Hawaii Maui College is in a unique position right now as an institution in higher education learning to provide quality education through a sustainability lens for student learners entering college. Teaching sustainability across various platforms at the college opens up new doors of learning from traditional educational teaching towards a sustainability learning experience instead. My project is to provide an opportunity for key stakeholders that include the college Sustainability committee members, Indigenous experts within the college, local community interest groups, County and State education representatives, NGO's and students. By creating an opportunity to co-create a S focus curriculum that uses information from the past through an Indigenous perspective and addresses our present needs while planning for the future of education. In alignment with the college strategic direction towards a sustainable future for long-term value creation; a cross-functional team of experts and community participants will bring together needed information flows that will enable a sustainability focus curriculum to become a standard course offering for student learners at UH Maui College.

To achieve success and produce a S focus curriculum whose project timeline will be made available for Fall 2019 semester. To achieve success with my project I needed to help the committee to focus on creating shared values. The committee had to place aside their differences and commit to being pro-active towards understanding how to trust one another, respect differences and release old misperceptions, and find commonly shared values. Sustainability, Indigenous Knowledge systems, and Science values had to be established and agreed upon to move forward towards succeeding in bringing together the necessary element that created a S focus curriculum. Active communication was the bridge to understanding common core value systems that embody sustainability. I proactively shared my own IK understanding of how the ebb and flow of information allows the natural step towards co-creation, transparency, open communication, and positive outcomes for students but essentially building a foundation for working groups to produce a better way of teaching. Also, the sustainability committee in whole was too big, and by suggesting to breaking down the committee into sub-committees, each member was allowed to sit in a sub-committee they favored most. Members were happier, more open to listening to different perspectives, and critically finding a balance as they seek to achieve educational positive outcomes. My project

is not necessarily to create a sustainability curriculum as I thought in the beginning of my project, but instead to bring people together cohesively through shared values so that the sustainability committee could offer its first S focus curriculum by Fall 2019 at the University of Hawaii Maui.

II.   Introduction

I have been on an educational journey for the last six years. Slowly but methodically I was able to get to the light at the end of the tunnel. The light being my journey to understand people (key stakeholders). The world in which I live in as a Native Hawaiian, and a student learner pursing my masters in sustainability, has given me greater insight to understanding differences and how collaborative efforts can produce a deeper connection to people, our environment, and how we can live on the planet with economic prosperity. Helping the SC create curriculum was a secondary goal, but I did not realize that until midwayinto my project. In fact the end date has changed several times. I had enough insight into Indigenous peoples having studied our Earth systems for thousands of years, and through my famililes oral traditions that were passed down about sustainable practices that kept our populations healthy, our ecosystems services flowing continuously with little impact by human hands. I now have two sources of education, one from my Indigenous lineage and the other from an educational institution. When I began studying sustainability I struggled with understanding what was meant as a sustainable systems thinking approach that directly influences our environment, societal well-being, and economic growth. It appear to me that both systems, IK and Sciences are on polar opposites to one another, yet these two systems of learning have similar values that are never able to connect together. By bridging two information flows together; knowledge can create new partnerships in research and development, and create a new way of thinking. My realization to understanding all systems of education and because I am Native Hawaiian also, led me down a more specific road through our University systems to connect and collaboration with NGO's, non-profit organizations, community leaders, and government partnerships that could co-collaborate to set the foundation of learning based on the values of the Indigenous people of Hawaii and sustainability was the beginning of my journey to help UHMC change the paradigm.

III.   Overview

Educational teaching today has contributed to our modern societies through research and development, informational technologies, science explorations, and rigorous methodologies. Yet, we live on a planet that is suffering from unsustainable practices. Education is at the forefront to a new way of teaching and thinking. As educators for our future we have an opportunity to change the ways in which we teach. Using an S focus curriculum that embodies TEK gives hope for the future.

A. Mission

My project mission is to provide an opportunity to collaborate with key stakeholders through the University of Hawaii Maui College Sustainability Focus Curriculum Committee members, Indigenous experts within the college, the local community and government, NGOs, and students whose core understanding of the principles of sustainability are adopted and rooted in equity, and diverse information flows. A transdisciplinary approach that balances economies, and preserves our environment that supports our societies well-being. The conceptualization of building a S focus curriculum for the college addresses the needs of the colleges overall strategic planning's own mission to provide a supportive education environment that inspire, and empower student learners in their own lives, their communities, Native Hawaiian culture, and their connection to our global community (UHMauiCollege). Proposing a S focus curriculum is an evolutionary way of thinking about sustainability and the practices we are accountable for. Accountability begins with education.

B. Goals and Objectives

To reach our goal of a S focus curriculum by Fall 2019, several objectives highlighting co-collaboration as the sustainability committee members agreed to commit to and implement its final goal of a S focus curriculum. In order to this occur I needed to empower various departments to build a team cohesion and committment. The strategy is to keep on track with the momentum of a new curriculum. Also find a way to employ a sustainability expert to explain how a sustainability lens works (Appendices 3). I had contact with the University of Hawaii Sustainability Coordinator to use his expertise and provide needed guidance for the SC to utilize when they were unable to move forward. The Sustainability Coordinator was able to help UHMC sustainability committee to create professional development modules for the campus about sustainability and Indigenous knowledge systems

for teachers before the fall session begins. The main objective was to use resources readily available at the University level to build modules for teachers and build capacity that drives positive outcomes through an S focus curriculum creation. The last objective was to have partnerships commit to meeting bi-monthly, and move curriculum development further for Fall 2019 semester deadline. Assuring committment of time and momentum to the target date with the expectation to increase long-term thinking for a new curriculum change (Kotter 2017). My intent was to build capacity of collective thinkers.

IV.   Target Audience

I became actively involved in the SC on campus as a stakeholder without voting privileges. The committee has had and continues to seek sustainable solutions for the college based on the campus mission to, " inspires students to develop knowledge and skills in pursuit of academic, career, and personal goals in a supportive, educational environment that emphasizes community engagement, lifelong learning, sustainable living, Native Hawaiian culture, and our global understanding," (UH Maui Strategic Plan, 2015). The SC goal is, " To create a culture of sustainability at UHMC in its communities and environments by embedding sustainability practices and processes throughout the College" (Cochran, 2016). The committee has helped me to recognize an urgency to include a culture of sustainability through an S focused curriculum proposal for our campus, a new academic model for success. S focus curriculum can be the catalysis that drives student success and retention, promotes higher educational institutions to change the way we look at traditional academic models in education and find a better approach towards long-term investment instead of short-term profitability. Ultimately, when relevant stakeholders sit down to create a plan of action towards a sustainable future, all will benefit from a sustainability curriculum. Students become highly skilled workforce for our communities while faculty and staff are tasked to expand their expertise by creating extensive knowledge that addresses sustainability outcomes throughout various degrees. By implementing a sustainability curriculum, UHMC creates a value chain that enhances it brand, attracts student populations to come to college or come back. In the context of sustainability and its strategic direction towards success requires an unconventional pivot that doesn't look at short-term profitability but more at long-term value as we work towards a sustainable future. More University systems are in the process of offering this type of

curriculum but are slow to implementation due to a lack of motivation and or resistance to change, the mental models of educational institutions that rely on rigor and scientific studies within their interdisciplinary mindset, and the lack of expertise to create sustainable curriculum (Bartolini). The University of Hawaii system is moving in the direction of incorporating a sustainability curriculum as a direction towards success. These successes extend not only to students but faculty and staff as well. Community engagements will also benefit from the college in a collaborative effort that supports our workforce. Beyond our island system are the consideration of external stakeholders that extend outside of the parameters of higher education and into a collective group assemblage of businesses, conservationist, health experts, global community activist and more who can influence how we teach students today. My task was to bring together people whose understanding of sustainability is based on values.

A. Communication and Collaboration

It became apparent to me early on that joining the SC that the group was fractured, non-paticipatory, and dominated by one individual leader. The morale at the time was at an all time low and I needed to find a way ahead to change that before we even considered a S focus curriculum to become a reality. Through membership and collaborations, we can share the same vision, mission, and values. According to Senge's book "*The Fifth Dimension*," a shared vision is a connection that bounds people together (Senge). Joseph Weiss in his book, "*Introduction to Leadership,*" emphasizes a strong vision, mission, and values that aligns a companies core strengths as one mind, one collective moving in the same direction. Success happens when a cross-functional team lends it expertise to the group, as the SC team is building their capacity, develops lasting relationship through trust, respects the perspective of others, and create goals towards a Sustainability future (Weiss 2011). At this point of understanding I saw people as having similar values but different perceptions of what those values are. By taking a step back from creating curriculum and guiding people through the process of value systems that Indigenous peoples have and our relationship with our environment, how people interact as a collective, and how we can build economic growth through understanding how sustainability systems work gave me hope in the form of committed membership, not all members feel this way, but enough to have a quorum vote that stayed the course of showing up for meetings.

B. Guiding Coalition

Our core team members and invested coalition of advisors have already accept responsibility and committed to ensuring S focus curriculum to move forward. The goal is to empower various departments to build team cohesion and committment. The strategy is to keep on track with the momentum of our guiding core coalition to increase Sustainability curriculum each year by at least four S focus curriculum in each Associates and Baccalaureates program. Forming guiding coalitions has been instrumental for me as I push towards implementation for a S focus curriculum. Noted Executive Engagement Leader of Kotter International, Dennis Goin said that two essential factors of creating a guiding coalition are diversity and behavior (Katie 2018). My unique relationships with each committee member has been an opportunity for me to realize that not one person is alike but instead provides a different perspective to how would we implement a new type of curriculum for the college. Each person has expertise in their given fields of teaching, and the financial know how to balance our college budget. From my student perspective of learning has allowed for an emergence of new information flows. The results of cohesive interactions instead of opposite sides of the table viewpoint. Our committee is now able to push forward with implementing a S focus curriculum for the college.

C. Empowerment

My own personal empowerment came from unlikely and likely mentors that have walked through my life. Looking back to my own familial relationships that has been pass down through our oral traditions that exemplifies our values with our environment. Remembering our historical practices and traditions has empowered my internal connections to my reason for being in the right place at the right time. My unlikely mentor was someone at the beginning of my project inception that created a lot of push back and saw no scientific relevance to sustainability through the eyes of IK. Whether he was doing this on purpose to push me through or whether he was unacceptable of any other forms of knowledge, I did not know. He was my antagonist throughout my educational career. There was a period of enlightenment for the both of us when the SC agreed to professional development modules. One module from sustainability and one module from IK. That moment changed my relationship with him because I needed him to not let me give up, and he needed me to help him understand the values of IK.

The goal for our SC membership is to provide on-going training and information sharing for professional and personal development in Sustainability and Indigenous Knowledge systems and the strategy for implementation is to employ sustainability experts and IK experts as a collaborative effort to improve curriculum twice a year. By create new values, a paradigm change in attitude towards our mental models will foster change through active behaviors that support sustainability practices. Reaffirming the college vision and mission statements that provide students with a holistic approach to learning about sustainability. The strategy for this change is to transform standardize curriculum into a S focus curriculum whose foundational learning comes from the values of Science, Sustainability and Indigenous Knowledge systems collectively. By transforming the old with the new becomes a permanent approach to support our future. Having regular individual contact with committee members has also been helpful. All members have been receptive, and committed to a S focused curriculum. As a change agent and adopting leadership roles, my core group of guiding coalitions and mentors are: UH Maui College Chancellor - Lui Hokoana. He naturally is the final sign-off to implementation of my project. He also is an intelligent and trusted advisor no matter what level I maybe in, he helps to unify the group. He also ask my personal input into the group cohesion. The Department of Sustainability Science Management - Tim Botkin is a powerful advisor because he has the expertise in Sustainability. Also, he pushes the boundaries of what is and what it could be and expects no less. Another influential person is the Sustainability Committee Chair - Nicollete Van de Leer. She is the balance beam that brings all perspective to a common shared, and trusted space that has helped move the group forward. She also establishes work responsibilities equally among participants. The committe chair has been a mentor I have gone to when it was the most fustrating for me. She pointed me in the right direction and she asked me for advise as well. These strong and powerful leaders are those that can help the college system accept the buy-in to curriculum change on the long-term value. My participation and communication with this group is to assure that Science, Sustainability, and Indigenous Knowledge will continue to be their core principles for success in creating curriculum for the long-term value of the college. My mentor, and my hero is my dad. He was an active waterman and canoe paddler. He advised me that in order for the canoe to move forward everyone in the canoe had to row together. If we had no direction, or trust for one another the canoe would not move forward. For the SC this was true. We were floating on an ocean with everyone paddling in many directions. Our canoe was not

moving anywhere. In order for the committee to understand a systems thinking model several analysis were needed to assure the need for sustainability to be included at the college through curriculum.

V.   Strategies

A. Feasibility Study

With the help of our Vice-Chancellor of student affairs I initiated a feasibility study to determine if my project would be beneficial for the college. The results of the analysis is based on probability and impacts. It also discusses who would be the responsible parties that create an action plan. In general terms these risk events have direct impacts to student enrollment and campus operations. Each event is ranked by high risk to stable risk. The percentage value is based on what is actually occurring now. There is a need to develop curriculum for the college around a sustainability platform. The feasibility study help to affirm my project goals. Conducting this type of study was never done before in the framework of sustainability and pulling the needed data together required a lot of negotiations. What appeared to be a barrier was actually old habits of not being transparent was the norm at the college between different departments (Appendice 2). By breaking down those walls through personal meetings the college website now has their sustainability strategic direction platform open to the public.

B. sSWOT Analysis

Using a sSWOT analysis can help inform UH Maui College Sustainability Committee, the college curriculum development committee, external community stakeholder, and Native Hawaiian populations on campus to develop a better understanding of a systems thinking model. A sSWOT Analysis has been the most helpful for my own understanding and relevant questions we must ask ourselves if we are to move in the direction of a sustainable future. Which has led me to believe that teaching student learners about sustainability and its worth is very important today if we are to create a better future for generations to come (Appendices 1).

C. The Change Vision

Kotter's model explains that communicating the vision and motivating members will drive positive outcomes (Kotter 2017). Therefore, the goal is long-term thinking for a campus wide curriculum change. This strategy employs small think tanks that rally members together. The University of Hawaii Systems Sustainability Office has helped our committee membership visualize the timeline and aligning the University systems models with our own direction. The

vision is no longer short-termism, but instead long-term value. My change vision was a personal paradigm shift for me. My vision became a whole picture view of how people can work together and change our behaviors in a positive manner that supports sustainable efforts for our lives today, our community, and our global partnerships.

VI.   Barrier

An obstacle within our SC is understanding how the Sustainability Lens (Appendices 3) process works. Only a few have been able to understand the mechanism that makes project initiative work or don't. Most of the members are from different departments who have never heard of a Sustainable Lens and how valuable this tool is. Having committee workshops on this specific issue can help to resolve any misunderstanding and rejection of the lens as a tool. At one of our committee meetings and with the help of the University systems Sustainability Coordnator suggested that professional development models be created so that teachers can incorporate sustainability into their curriculum. I decided that we should also create a professional development module about Native Hawaiian knowledge systems. Both modules have been voted on and are in the process of becoming available for teachers to use as they build their own curricula. The plus side is that UH Maui College already has a professional development module for IK. Another barrier was understanding that we may have different objectives to reaching goals but by outlining the goal first and creating the objectives that align with the goal through our shared values we were able to move forward

VII.   The Journey

A. My Vision

My original goal and vision was to build capacity through an S focus curriculum that includes Indigenous Knowledge. I started my college career at UH Maui College with accomplishing my Bachelors in Sustainability and saw a need to create a plan to bridge IK (Indigenous Knowledge) as a platform to help western sciences accept ancestral knowledge as being relevant to scientific methodologies in research. Indigenous Knowledge is based on qualitative information, that does not comfortably fit into the norm of western analysis. No less important, our IK is a relevant and essential component to creating sustainable pathways towards

a healthier society. This is where my journey was no longer a thought but instead a process of creating a paradigm shift.

B. Leadership

My personal leadership skills came about through my father. He was a giant of a man, at least in my eyes and he never faltered on his values. He valued family, respect, dignity, open communication and acceptance. My dad was the foundation for me and shared with me all my life how important it was to stay the course without loosing your values. I believe in a whole picture vision in a time when our committee members view was only from semester to semester. This is short-termism and has the feeling of constantly keep your head above water. My personal goal is to become a transformative leader to elevate others to their highest capacity through active listening, to motive individual beyond their abilities, and to help them become big thinkers (Weiss). I am a big thinker, and I have been taught this through my father, and those that have mentored me along the way have guided me in the right direction even when I was off course.

C. Milestones Along The Way

There have been many stops and starts along my journey, and I am projecting there will be more to come. The campus sustainability strategic direction and what we are doing at the college is actually a living document as our college systems are evolving along with the current needs we are facing today. I thought producing a sustainability curriculum was the goal, but in fact it has become a secondary goal instead. Building capacity and uniting the SC is actually why I am a part of the committee. My very own perspections and willfulness has changed. I became a better listener, and pushed myself to being able to sit among giants. I call my collegues in the sustainability committee giants because my own self view I felt could not sit among them. They had more education, and they were the authorities in charge. In fact this type of thinking was how our system of education has been taught to students. It is no longer true, and the reason why we must change the ways we think quickly because if we can bring about change for our future we can change our unsustainable practices which can become a thing of the past. (Appendices 4).

VIII.   Conclusion

    A. Next Steps

This is an opportunity to engage in building better solutions through curriculum. This is also an opportunity to teach student learners to use critical thinking that addresses real-world issues. Building a S focus curriculum that incorporates Indigenous knowledge is visualizing the world from different perspectives and providing an opportunity that moves college systems forward towards economic stability, societal equality and diversification, and environmental integrity. Each month the SC meets for regular updates and discuss implementation of an S focus curriculum by the Fall of 2019 semester. The current status of including IK wisdoms based on values of Mālama ʻāina - to care for, tend to, to serve and preserve that which feeds, Auamo kuleana - to carry the responsibility and privilege to foster and do no harm, and Lokahi - in harmony and agreement with ethical practices that support our societal well-being, and the natural environment that we serve has passed the committeeʻs voting process in the SC. The last implementation of the sustainability lens process (Appendice 4) is the approval and signature of the Chancellor for UH Maui College which is forthcoming.

    B. Action Forward

Transitioning from our current curriculum to a new model we first find our core common values. Then we collaborate with various key stakeholders internally and externally while working with Science majors experts to adapt their curriculum. Thirdly, we adapt and increase curriculum diversity across all degree pathways by using S focus curriculum that includes Indigenous knowledge. We employ Sustainability experts as a collaborative effort to improve curriculum and finally we transform curricula into a S focus curriculum whose foundational learning comes from the values of Science, Sustainability, and Indigenous knowledge. Transforming the old with the new and teaching for change. When UHMC begins to implement these type of courses campus-wide then people become educated on some of the impacts on our systems and gives us a better understanding how we are part of the problem and opens us up to innovative ideas that can solve some of the issues we are facing. You canʻt get people to change unless you give them the tools to help them improve and care. The planned project is to do that, give people an opportunity to change. The college systems must rethink how they want to remain viability in a changing world. Through this project, my proposal is in a unique opportunity to

improve connections and leadership that guide us through the process. Kouzes explains, "when people see the successes and hear the positive feedback, it creates momentum" (Kouzes, 2017). I realized that there is a need for this campus to provide a mechanism in which the college can encourage curriculum efforts that address sustainable practices. Beyond what I thought I was creating had far more implication than just creating a S focus curriculum. Instead it was creating a collaborative collective of individuals that realized the importance of values that are shared no matter what forms education takes. When we perceive how information flows comes from many directions then we are able to accept relevant knowledge from diverse understanding is how our systems thinking models can create a better future. More importantly, we give student learners an opportunity to impact our world in a holistic manner that perpetuates sustainable practices. My journey is just one piece of the system connected to the whole system that makes up a systems thinking model towards success. My journey through my project was nothing short of miraculous. I say this because I learned that we can share the same values, and when applied to building a strong group of individuals who see your vision as I do then I have success. The SC members stayed stagnant for a long time, and when collectively we decided to do something different and unconventional for the college it started the ball rolling. We have a campus that will go Net Zero within this year, we will have an S focus curriculum by Fall 2019 semester, we will install more refill stations, and we continue to work on eliminating single use plastics. I call that success. UH Maui College is moving towards good to great.

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X. Appendices

Figure 1. sSWOT Analysis
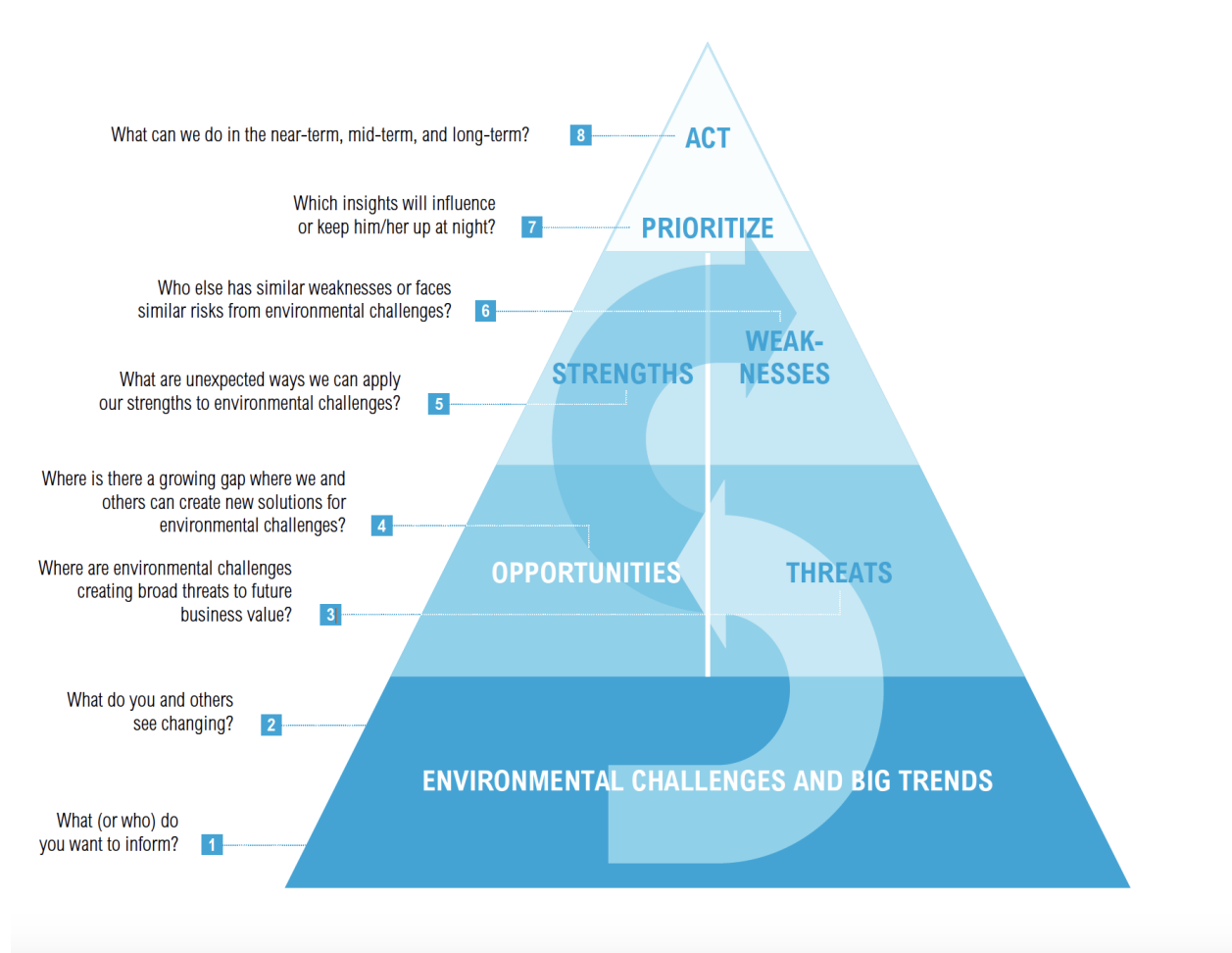
Question 1 – It is important that we consider informing students through higher education a whole system view of sustainability.

Question 2 - Environmental Challenges and Big Trends. As we on islands have become highly aware of the environmental challenges that parallel our own crisis around the globe. We are not an island to ourselves but part of a global crisis. Through S focus curriculum students have an opportunity to widen their view on a global scale. Higher education can provide sustainability knowledge as University system embed sustainability curriculum across diverse degrees. Many educational systems are taking steps towards implementing S focus curriculum for their student populations - creating leadership for a changing world.

Question 3 - Threats. Some of the impacts are fluctuation in extreme temperatures. Hotter than normal summer seasons, frequent tropical disturbance in the Pacific Oceans - 2017 saw 13 named hurricanes pass through, clean water resource scarcity due to ag run-off from monocropping, lack of infrastructure as we face economic boom in tourism. Food security - Hawaii imports 90% of its food. We in Hawaii have become reliant on imports for our living. If our supply chain ends, Hawaii becomes vulnerable to a system collapse.

Question 4 - Opportunities. Becoming a disruptive innovator by envisioning and embedding S focus curriculum. This will create a Value chain that seeks to improving our current business model that reflect a holistic approach to Sustainability. It will also empower students to critically think about solutions, allow the expression of new ideas, and have University systems become corporate responsible throughout the entire value chain. Graduate students will have an opportunity to also become entrepreneurs at home as well.

Question 5 - Strengths. Some of the strengths for University systems to include S focus curriculum would be to increase merit-based aide, utilizing 15 credits to 3 years graduation rate, produce graduates with tools needed for job ready opportunities. Collaborate with the job sector through internships - working on sustainable solutions for their company. Use a diverse internal mechanism that guides Sustainability outcomes and reduce barriers to graduation completion. Create a culture of sustainability within the University system and alongside collaborators locally and globally.

Question 6 - Weakness. Increasing cost to attend college. Job unavailability in the local area. Weak brand/competitive market from other Universities outside of UH Maui College. The gap between a college education or working instead. Cost of living is exponentially out of reach for most people. Working more than one job trumps college in today's economic markets in Hawaii.

Question 7 - Prioritize. The priority of the University is to make college affordable, create value in education as a pathway to better job opportunities, and to change the paradigm from traditional educational model to a sustainable model that supports - our environment, economic prosperity, and societal well-being. This would lead us into a transdisciplinary acceptance of tackling real-world impacts from climate changes.

Question 8 - Action. The actions necessary is to create an S focus curriculum in collaboration with those organization who are already implement similar curriculum. To implement sub-committee authority that sets the guidelines of how to offer sustainability curriculum by Spring 2019. The mid-term partnerships would meet and plan for bringing course offerings on-board with sustainability curriculum, and the long-term action would be to have UH Maui College be an Indigenous Institution serving campus that implements Sustainability as its core curriculum (SSWOT).

Figure 2. Feasibility Study

Risk Level Rank	Risk Event	Probability %	Impact to	Mitigation	Explanation
Interim Deliverable					
⭐ High Risk	Global climate disruptions to Hawaii	100%	UH campus operations	Community stakeholder (CountyEngineers) assign to create a plan of action	UH Maui campus sits not more than 100ft. from waterfront
⭐ High Concern	Aging infrastructure	75%	Student Attendance	Assign to O&M for Upgrade and redesign older buildings	Classsroom unavailable
⭐ Important	Food imported by 90%	60%	Campus food system	Using local farmers for supplying produce	Places to eat for campus community - loss revenue
⭐ Stable	Water	50%	Clean potable water	Assign to Sustainability Committee for review proposals to install cleaner water stations throughout the campus	Not enough cleaner water stations are available/Budget restrains. Global climate impacts to water systems - less rain more drier conditions
⭐ High Risk	Student Enrollment	85%	UH Maui College	Assign to Sustainability Committee Department Heads for review and assessments of Business model	Climate impacts would more likely affect student enrollment
	Probability Risk = 74%				
	Final Deliverable				

|				
⭐ Stable	Acceptance And Approval	10%	Assign to committee Chair and Vice Chair	Favorable expectations to pass
☆ Concern	Certification	80%	Voting members and Chancellors committeement	Some reservations from committee members/Budget and Procurement
⭐ Stable	Sustainability Lens Process	0%	Tim Botkins - Sustainailty Dept.	Mentorship and agreement
		Probability Risk = 30%		

Figure 3 - UH Maui College Sustainability Lens process.
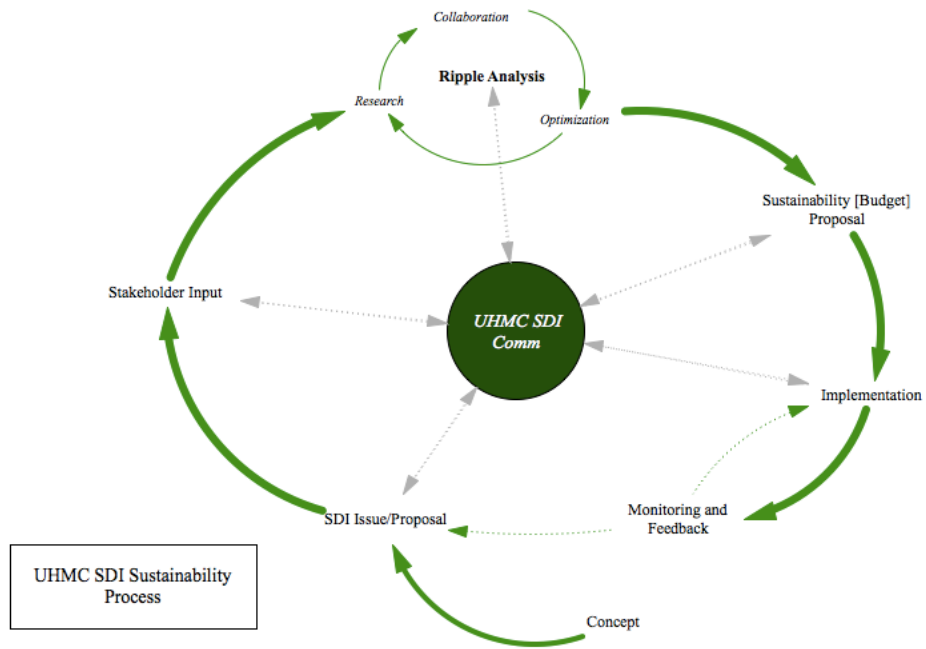
Figure 4. - Updated Gantt Chart/Milestones

B	C	D	E	F
S(Sustainability) Focus Curriculum fo	8/17/2017	End Date	% Compl	Assist
Project				
Project Conception	08/07/17	09/07/17	100%	G Kakalia
Research and Development	09/01/17	11/23/18	90%	G Kakalia
Interview Key Stakeholders on Campus	11/20/17	08/30/18	100%	G Kakalia
Milestone 1 - Project research	**12/30/17**			
Sustainability Committee stakeholder non-voting	01/22/18	11/23/18	100%	G Kakalia
Mentors	01/22/18	11/23/18	75%	G Kakalia
Understanding UHMC FSSD	09/04/17	01/04/18	75%	Kayla Fisher
Professor Feedback	09/15/17	09/15/17	100%	Kayla Fisher
Professor Feedback	08/31/18	11/23/18	80%	Joseph Fullerton
Capstone Feedback	08/30/18	11/23/18	80%	
Milestone 2 - Positioning	**01/22/18**	**11/23/18**		
Creating Sustainable Values in the Sustainability Committee Charter	01/10/18	08/01/18	80%	Hokulani Holt/Mentor
Accountability Partner Feedback	09/17/17	09/17/17	100%	Micheal Sullivan
New Accountability Partner	08/22/18	08/22/18	100%	Victoria Carrasco
Check in	01/22/18	01/22/18	100%	Tim Botkin/Mentor
Committee Mentor Review	01/08/18	11/23/18	85%	Tim Botkin/Mentor
New Accountability Partner	08/22/18	09/27/18	100%	Victoria Carrasco
Milestone 3 - Review for the Full Committee	**02/19/18**	**12/21/18**		
Draft proposal for value creation	02/20/18	02/27/18	100%	G Kakalia
Checking In	08/16/18	11/21/18	100%	Meagan Jones/Sub-Committee mentor
Final review of values	10/25/18	11/23/18	100%	Tim Botkin/Mentor
Full Committee proposal	12/20/18	12/20/18	100%	G Kakalia
Creating a proposal for S Focus Curriculum	09/20/18	02/21/19	100%	Tim Botkin/Mentor
Academic Senate acceptance	03/12/19	03/12/19	100%	Mike Ferguerson/Sub-Committee Chair
Milestone 4 - S(Sustainability) Focus Cirriculum	**03/12/19**	**08/05/19**		
Professional Development Modules/Sustainability	04/16/19	07/31/19	0%	Tim Botkin/Mentor
Professional Development Modules/Indigenous Knowledge	04/16/19	07/31/19	0%	Hokulani Holt/Mentor
Implementation	08/05/19		0%	Sustainability Committee