RSC 5050 Part II Excerpt from *Theories of Sustainability and Resilience on Maui: A Multi-Scalar Approach to Goal Setting in an Independent School*

Part II– A Sustainable and Resilient Proposal for the Montessori School of Maui

The Montessori School of Maui (MOMI), founded in 1978, began by serving just eight students in a simple Quonset hut in Haiku, HI. Since then, the organization has mindfully grown into a 9-acre campus that is supported by 42 staff members and serves over 285 students from pre-K through 8th grade. The school is located on the island of Maui at an elevation of roughly 1,500 feet up the northern slope of Haleakalā and is situated near Makawao‘s town center, approximately five miles south of the North Shore. MOMI is a non-denominational, non-profit 501(c)3 corporation with an annual operating budget of $3.9 million and is licensed by the Hawaii Council of Private Schools and the State of Hawaii Department of Human Services and is fully accredited by the Western Association of Schools and Colleges (WASC) and the Hawaii Association of Independent Schools (HAIS).

The school employs a collaborative learning environment that is based upon the time-honored principles developed by Dr. Maria Montessori over 100 years ago and is designed to stimulate critical thinking skills, cultivate inquisitive minds, and empower children to actively participate in the rapidly changing environment of the twenty-first century. The Montessori teaching methodology is uniquely based upon observation, peer learning, tactile learning materials and intrinsic motivation. Within each classroom, multiple grades or levels of students are combined to create an environment whereby students serve as leaders for one-another. These elements all come together to create a truly distinctive and remarkable approach to education.

MOMI is committed to creating a positive relationship between the natural world and its community, and to offering students a personal experience that connects academics with these vital aspects of life. To that end, in 2003, Meder & Burns developed The Montessori School of Maui‘s Guidelines of Sustainability to help define the parameters of the campus expansion and integrated sustainability curriculum. The expansion was conducted during the 2004-05 school year and included a multi-purpose facility, five additional classrooms, and required parking. These facilities all later achieved LEED® Silver certification by the U.S. Green Building Council, the nation’s preeminent program for the design, construction, and operation of high-performance green buildings. Through this and future projects, it was MOMI‘s goal to create a model campus based on sustainable design, materials, and practices.

Unfortunately, limiting factors such as the recession in 2008, multiple changes in leadership and board members, and an overall growth model based on limited budgets and traditional methods of accounting that originated from a weak sustainability paradigm, has stalled progress towards achieving the campus-wide goal of sustainability.

Little has been done in the past twelve years to address these problems of implementing sustainability and create the vision of a model campus and integrated sustainability curriculum. In fact, in many areas of environmental sustainability, we have slid backward in our efforts to maintain this critical practice. Therefore, it is my sincere goal to 1) reinvigorate our community's passion for protecting our global resources, 2) mitigate our environmental impacts while maintaining resilience, and 3) prepare our students to face and surmount the upcoming socioeconomic and environmental challenges that are associated with negative impacts that result from climate change.

Meder & Burns (2003) created a comprehensive framework to address sustainability through a study of sustainable site and building design guidelines for the school's expansion project in 2004-05. The guidelines suggested points to "preserve open space, preserve and restore ecosystems on and around the site, stand as a best practice model for other schools and the community, incorporate the principles of sustainability in tangible ways into the curriculum and create an overall improved quality of life for the students, faculty, families and all who visit the Montessori School of Maui" (Meder & Burns, 2003, p.11). These "Design and Operational Guidelines" focused on the treatment of system qualities, such as ecosystems, buildings, resources (water and energy), materials, environmental quality, and curriculum integration.

Within each heading, sub-headings were created to explore sustainability principles and to establish goals and actions in areas such as erosion, stormwater management, lighting, waste management, renewable energy sources, etc as they related to the campus expansion project. The resulting sustainable development practices were then utilized to form a sustainability lesson base that was intended to be integrated into and extend the "Earth Education Program" for students aged three to fifteen years. The campus expansion itself was intended to create an expanded prepared environment to "maximize opportunities for students to fall in love with the natural world, learn about Earth's natural cycles, and gain an understanding of humanity's relationship with Earth's systems and species" (Meder & Burns, 2003, p. 52).

Bell & Morse (2008) suggested "the spatial scale is clearly very important when one attempts to put sustainability into practice or when one judges the level of sustainability of an existing system" (p. 14). In all areas of the guidelines, the recommendations and impacts were examined from the macro, meso, and micro perspectives. Meder & Burns (2003) defined them as follows:

> **MACRO**: This is the perspective that measures the impacts and influences of each strategy at a scale well beyond the site. This would include ramifications at an island, state, regional and/or global level.
> **MESO**: Meso typically means intermediate or middle. In ecological terms, it connotes the inclusion of mountains. In Hawaii, we can consider it to mean "from the ridge to the reef," or the *ahupua'a*. The meso

> perspective estimates the influences and impacts upstream and downstream of the site. For example, this scale includes the contiguity of ecosystems and examines the influence of each strategy on neighboring communities.
> **MICRO**: This is a more site-specific scale. It accounts for the ramifications of the various strategy applications within the boundaries of the site. This could include everything from site-specific rainfall, wind patterns and solar exposure, to the implementation of the school's recycling program and its influence on a child. (p. 9)

MOMI's "Design and Operational Guidelines" were designed to consider the environmental impacts of the campus expansion and to make recommendations throughout multiple time frames. The development concerns, examined from the macro, meso, and micro perspectives, focused on the near-term construction impacts and their effects on the long-term preservation and improvement of the overall site. The guidelines were also intended to provide a template for the daily activities on campus.

Bell & Morse (2008) argued that the questions of spatial and time scales and the meaning of quality must be "resolved before sustainability can be achieved" (p. 14). The spatial scales, macro, meso, and micro, as established in the original Guidelines, will continue to serve as effective system boundaries in the new document. The Montessori pedagogy operates on three-year cycles so I suggest that the revised guidelines must be reviewed at the end of each three-year cycle to allow for adaptability and appropriate modification based on documented feedback from the community. Although this timeframe will not allow the completion of the suggested indicators, it will place MOMI on the correct path towards achieving our vision of sustainability.

The existing Sustainability Guidelines of the Montessori School of Maui were appropriate for the period and place they served. The "Design and Operational Guidelines" were developed based on the environmental qualities that evolved from the more traditional resource/environment root of sustainability (Bell & Morse). Jamieson (1998) argued, "sustainable development should be directed towards building societal capabilities rather than towards development as an end in itself" (p. 184). Therefore, along with the qualities found in environmental sustainability, the revised guidelines and curriculum must be expanded to include those qualities encompassed by sustainable human, social, and economic paradigms. By applying the new definition of sustainability (*equitably meeting the basic socioeconomic and environmental needs of present-day cultures without degrading existing natural systems or compromising the ability of future generations to meet their own changing needs*) to the old guidelines, we may begin to reevaluate and appropriately modify both the plan and its partnered curriculum to reflect the current and future needs of the community.

Progress towards whole school sustainability must be planned and measured in order to attain positive social and economic impacts, high levels of human health and satisfaction, demonstrated eco-literacy of participants, and a zero environmental footprint. These high aspirations are the end result of an independent school organization's efforts to fulfill their goals of sustainability. The end goals are clear, but how we choose to get there is often clouded by subjective assessment.

Each school must choose metrics that they feel will place them on a path towards whole school sustainability. After an organization defines what sustainability means to them and establishes the scalar and temporal boundaries for their efforts, specific indicators must be chosen to guide them. Sustainability indicators (SIs) are one tool that can help illuminate the path and guide an institution's efforts to reach their goals. The following categories of sustainability; organizational culture and operations, educational programming, and environmental allow us to examine and select indicators that are most appropriate (Table 4).

TABLE 4 - Sustainability Indicators for the Montessori School of Maui*		
Focus Area	**Indicators**	**Goals & Objectives**
Organizational Culture & Operations		
	Governance	demonstrates a commitment to sustainability through the creation and adoption of a sustainable management plan that aligns vision & mission through interdepartmental, community, and student collaboration – a sustainability committee shall be created during the 2019-20 school year to develop a plan which shall be formally adopted by the board prior to 2022
	Social Responsibility	provide equal opportunity for underprivileged students, offer a fair wage and benefits package that reflects the regional costs of living. An exploratory committee shall be formed by 2021 to look at the purchase of workforce housing for staff in need
	Coordinator	the organization has at least one full time sustainability coordinator by 2025 to facilitate communication, collaboration, initiatives, community engagement, and curriculum integration
	Utility & Resource Use	1) Perform a series of monthly electric and water audits beginning the 2019-20 school year with the goal of identifying areas where we can decrease overall usage. 2) A significant percentage of energy is derived from onsite renewables – Currently, MOMI gathers an annual average of 18% of its electricity use from solar panels – By reducing electricity usage and increasing our solar capacity, we should attempt to increase it to 50% renewable sources by 2040. 3) MOMI uses 1.4 million gallons of water annually, we should decrease this number to 0.7 million gallons by 2040.
	Waste Management	Perform a series of monthly waste audits beginning the 2019-2020 school year to provide baseline data on the weight of materials recycled, composted, donated/re-sold, and disposed of in a landfill – we must reduce the amount of dumpster pickups by 50% by 2025
	Purchasing	Institution 1) has written policies, guidelines or directives that seek to support sustainable purchasing across commodity categories institution-wide, 2) employs Life Cycle Cost Analysis (LCCA) as a matter of policy and practice when evaluating energy and water using products, systems, and building components - building expansions follow LEED guidelines 3) 50% of purchases must be from local sources – Purchasing initiatives must be integrated with the carbon footprint indicator goals
Educational Program		

	Agriculture	supplement the school lunch program with 25% school grown organic food and 75% locally derived food by 2025. Nutrition programming and food security shall be an integral part of the initiative
	Campus as Living Lab	utilize campus, infrastructure, and operations for multidisciplinary student learning and applied research that contributes to understanding campus sustainability challenges or advancing sustainability on campus and the greater community
	Community Engagement & Partnerships	create increased opportunities for communal interdependence at the micro, meso, and macro scales and place the campus as a hub for community learning – a critical component of the success of this initiative is to purchase school vans to transport students. The vans must be purchased by 2022 and hybrids or electric vehicles should be seriously considered – community programs should be instituted by
	Immersive & Integrated	offer place-based sustainability-focused educational lessons that are wholly integrated within the regular curriculum across all scales by 2026 – the Hawaiian Studies and Sustainability Programs should be integrated to the extent possible
Environmental		
	Wildlife and Habitat	Preserve open space and protect habitat integrity and connectivity; monitor species of interest – mindfully increase the number of native plants on campus by 50% by 2025
	Watershed Protection	control stormwater runoff; rainwater is treated as a resource, not waste – 4,000 native seedlings shall be produced annually for out planting in the watershed restoration areas
	Reduce Carbon Footprint	Participate in the Stockholm Resilience Global Carbon Law and reduce the school's overall carbon footprint by 25% every five years.

* The creation of this chart was based upon work from the following sources:

AASHE (2017). Stars v. 2.1 credit checklist. The Association for the Advancement of Sustainability in Higher Education. Retrieved from https://stars.aashe.org/pages/about/technical-manual.html

AI (n.d.). Audubon International's Sustainable Communities Program sustainability indicators. Audubon International. Retrieved from https://www.auduboninternational.org/sustainable-communities-program

Barr, S., Cross, J., & Dunbar, B. (2014). The whole-school sustainability framework: guiding principles for integrating sustainability into all aspects of a school organization. The Center for Green Schools. Retrieved from https://centerforgreenschools.org/sites/default/files/resource-files/Whole-School_Sustainability_Framework.pdf

Sustainability must be integrated into the multitude of interrelated systems and sub-systems that provide for the efficient functioning and mission fulfillment of a school. It is this idea of a whole-school, systems-based approach that drives the selection of meaningful metrics in this arena. Efficient use of resources, financial and social responsibility, and intentional purchasing are visible practices of sustainability. The administration, through both its governance and operations, reflects and reinforces what

students learn about sustainability and their interconnections between the community and its environment. How they communicate and collaborate interdepartmentally, with students, and the community they serve establishes shared values, social norms, and practices within an organization (Barr et al., 2014). Our school must begin the path towards sustainability from that basis of collaboration.

Sustainability, as a core component of the Montessori School of Maui (MOMI), must align with our established mission to:

> Provide a comprehensive curriculum from early childhood into adolescence by following the principles, spirit and philosophy of Dr. Maria Montessori's method of education. This approach features a collaborative learning environment to stimulate each student's critical thinking skills, cultivate inquisitive minds and empower children to actively participate in the rapidly changing environment of the twenty-first century. (MOMI, 2019)

The student-centered mission statement above outlines key attributes of global citizens that are willing to participate in shaping their own future and program is the key to bringing that vision to life. Principles of sustainability (e.g. farm to table, resource management, interconnectedness, systems thinking, and social justice) must be woven throughout the existing curriculum, rather than viewed as an add-on (Barr et al., 2014). Additionally, infrastructure and the campus as a whole provide an important opportunity for students to connect sustainability theory to practice and also set MOMI up as a hub for community outreach and learning.

The Montessori School of Maui has an ecological footprint on our island and the Earth. It is critical for us, as an educational institution, to understand what our impact is and to identify key areas for improvement. As students and staff come to better understand how our actions, or nonaction, affect our ecological systems, awareness and knowledge will be passed on to our families and friends. In this way, MOMI is positioned to make significant impacts on the health and well being of our environment.
Sustainability requires a whole school and whole-systems approach in order to be effective; indicators are an essential component to measure and hold us accountable to our collective goals. Sustainability also requires significant changes in an institution; change in the form of new policies, new practices, and responsibilities of the administration, staff, and students. Therefore, establishing stakeholder buy-in is critical to the success of any comprehensive and holistic sustainability management plan. It cannot originate from a top-down approach but rather, it must originate from a holistic inclusion of all parties involved and due consideration given to the interconnectedness of all systems.

The recent change in leadership has tipped the Montessori School of Maui (MOMI) towards the back loop in its adaptive cycle. As such, it has entered a period of "uncertainty, novelty, and experimentation." How the administration chooses to proceed through this time of change will determine if we maintain the status quo or enter into something dramatically different. The following goals are not intended to upend the entire system, but rather to introduce changes that will serve to increase MOMI's specific and general resilience.

MOMI is an educational institution that expands and contracts with the community that it serves. As such, it is continually dependent upon inputs and human energy; neither of which is constant. In its most basic systematic form, children (inputs) enter the system, are then acted upon by skilled staff (throughput/energy), and exit the system (output), hopefully, empowered to actively participate in the rapidly changing environment of the twenty-first century. As a result, this type of system is financially dependent upon tuition and fees, and in the case of MOMI, 93% of the school's revenue during the 2017-2018 fiscal year relied upon enrollment (Table 5) (MOMI, 2018). A system such as this is highly vulnerable to fluctuations in enrollment. Any sudden decrease in student numbers potentially has drastic consequences for the interconnected systems across multiple scales. Therefore, revenue sources must be diversified and balanced and financial reserves increased.

TABLE 5 - Revenue and Expenses for Fiscal Year 2017-2018

Revenue Source	**Amount**	**%**
Tuition & Fees	$3696851	93%
Grants and Fundraisers	$174249	4%
Annual Fund	$74153	2%
Other Income	$46719	1%
Total Revenue	**$3991972**	**100%**

Walker & Salt (2012) recommended an increase in functional and response diversity in addition to an expansion of reserves to bolster a system's general resiliency. In this case, however, I would argue that a resilient system would also require diversity and reserves to effectively respond to the *specific* disturbance of a sudden decrease in enrollment. Although increasing MOMI's general resilience will allow the system to absorb sudden

and unforeseen shocks, and because enrollment is so critical to the effective operation of the school, it must be considered a potential risk and planned for.

I. **Balance & diversify revenue sources to create additional reserves**. More effort must be made to increase the profitability and number of fundraiser events. This is not a "one and done" strategy; not all events are required to be regional in scale like our wildly successful "Taste of Upcountry." Smaller events that are held with regular frequency accomplish two things. One, they increase revenue, and two, they advertise for us. Unfortunately, this requires additional staffing and space. However, if executed efficiently, profitability is assured. Additionally, alumni of the school must be targeted for fundraising. Some students have moved on to become famous and financially successful (think, world-famous surfers and musicians). Benefit concerts and guest appearances offer an incredible opportunity to generate income. Fame should not be a prerequisite, reach out to all alumni; you never know what might come back.

II. **Diversify and bolster the range of programming**. The current resource programs (i.e. Spanish, the living classroom, Hawaiian studies, mindfulness, & art) are funded by our current revenue stream and are at risk of cancellation should enrollment numbers drop. However, other programs, such as morning care, aftercare, and after school "studios" generate some revenue on their own, (although these programs are offered at a reduced rate as more of a service to the parents to help bridge the hours that they are at work). Additionally, MOMI offers multi-week winter, spring, and summer camps for primary children, aged three - six. Again, these are offered at a minimal fee. I recommend that an ad-hoc committee comprised of staff and administration is formed to assess how much the school could increase its fees for the camps, aftercare, and studios and to develop educational camps. Additional revenue could then be transferred into a reserve account that is specifically set up to cushion the academic programs in the event of a decrease in enrollment. Additionally, other options to create additional revenue within the programs must be explored. For example, student-run trade exchange programs within the Living Classroom could potentially generate funds through the creation, marketing, and sales of value-added products. Vacation camps could be expanded to include older students and developed as "destination science or agriculture educational camps" that are marketed nationwide. Although this recommendation is still based upon its own level of enrollment (a downside), it diversifies the structure and supports existing programming; it also supports recommendation I, to "increase reserves and balance the revenue stream." Also, the annual fund is important. However, people like to know where their donation is going. Create individual fundraising campaigns to support exceptional programming. Those are an easy sell.

III. **Modify the pay scale and benefits package to attract and retain highly qualified personnel within all departments.** The academic programming is only

> as good as the staff that executes it. Maui is expensive. That fact must be addressed in the pay and benefits scale. Also, consider investing in workforce housing for employees and their families in need. The downside, it represents another investment, however, the return on investment is potentially great. To ignore the benefits, such as increased enrollment, reduced attrition, and brand loyalty is to the detriment of the system as a whole.

As the impacts of climate change increasingly manifest in Hawai'i, policy makers, conservationists, and community members have begun in earnest to assess the associated climate change risks in order to better safeguard our infrastructure, environment, safety, and way of life. Rainfall amounts and intensity have changed drastically in Hawai'i during the past several decades. As an island state, Hawai‘i is especially vulnerable to water shortages that result from increased air temperatures and changing rainfall, El Niño, and Pacific Decadal Oscillation (PDO) patterns. While heavy rain equates to erosion, flash flooding, road and business closures, infrastructure damage, and loss of public services, drought conditions that often accompany El Niño and PDO result in the decreased base flow of stream systems across the state (Fletcher, 2010). As surface air temperatures rise throughout the region, evaporation is increased and results in reduced water supply and increased demand (Keener et al., 2012). The climate is changing and MOMI must also prepare to adapt to it.

The National Weather Service defined drought as "a deficiency in precipitation over an extended period, usually a season or more, resulting in a water shortage causing adverse impacts on vegetation, animals, and/or people" (One World One water, 2017, p. 13). In response to increasing episodes of water shortages, Hawai‘i has approached freshwater resiliency from a variety of perspectives. Watershed partnerships restore and conserve natural areas that capture and infiltrate rainwater, the Commission on Water Resource Management focuses on drought planning and overall water management, and the Hawai‘i Freshwater Initiative (2018) was created to bring various stakeholders together "to develop a forward-thinking and consensus-based strategy to increase water security for the Hawaiian Islands" (p. 3). Recommendations put forth by the Hawai‘i Freshwater Initiative include the following actions that were intended to create 100 million gallons per day (mgd) in additional reliable freshwater capacity by 2030:

1) Conservation: Improve the efficiency of our population's total daily fresh groundwater water use rate by 8% from the current 330 gallons per day/ person to 305 gallons per day/person. By 2030, this goal will provide 40 mgd in increased water availability.
2) Recharge: Increase Hawai‘i's ability to capture rainwater in key aquifer areas by improving storm water capture and nearly doubling the size of our actively protected watershed areas. By 2030, this goal will provide 30 mgd in increased water availability.
3) Reuse: More than double the amount of wastewater currently being reused

in the Islands to 50 mgd. By 2030, this goal will provide an additional 30 mgd in increased water availability.

The Montessori School of Maui is an integral part of Maui's community and as an educational institution, we must contribute and lead the way by example. Water shortages will soon become a reality, and we must adapt our infrastructure to comply with the Hawai'i Freshwater Initiative's recommendations to 1) conserve, 2) recharge, and 3) reuse our water supply.

IV. **<u>Begin initiatives to conserve water on campus</u>**. MOMI uses an average of 1.4 million gallons of water per year, which equals roughly twelve gallons of water per person per day. Using the Freshwater Initiative's goal of an 8% reduction per person, we should strive to reduce our use to eleven gallons of water per day per person for an annual total of 1.3 million gallons. MOMI has already installed water saving devices on its faucets. It is time to address leaks in the system and replacement of aging toilet fixtures and urinals. Also, Figure 2 illustrates that our highest water use is during the summer when there are less people on campus. I suspect that this higher usage is a result of increased irrigation needs during the dry season. We should consider reducing water use during these times. The sustainability committee must also head up initiatives that serve to educate the community (at multiple scales) about the importance of water conservation.

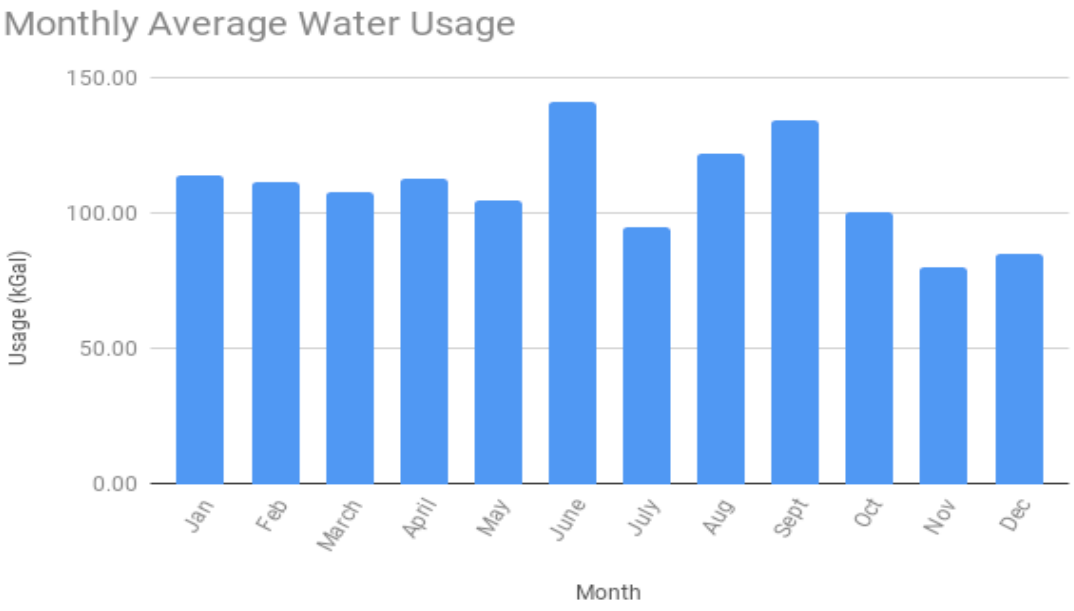

FIGURE 2 - This chart illustrates the average monthly water usage during the most recent three year time period. Notice the increased use during June and the decreased use during July. I suspect that the increase is due to higher irrigation demands and next months decrease is a result of "sticker shock."

V. **<u>Highlight the previous and continuing efforts towards recharge</u>**. In 2005, as part of the campus expansion project, MOMI spent a significant amount of money to

install stormwater drainage systems that reduce runoff to neighboring properties. Additionally, multiple "raingardens" have been designed and constructed throughout the campus by students. Bring attention to these features.

VI. **Complete the reuse plans as designed.** The campus expansion project in 2005 included extensive plans to capture rainwater from the new buildings and store it in two massive rainwater tanks. During construction, downspouts were connected to underground drainage pipes, however, the pipes lead to the offsite stormwater drainage system rather than the previously planned tanks. Although they may be astronomically expensive, we must seriously consider installing the tanks; we are literally halfway there already.

VII. **Create an Ad Hoc Committee to Explore Effective Responses to Increasing Weather Disturbances.** As the impacts of climate change increasingly manifest in Hawai'i, policy makers, conservationists, and community members have begun in earnest to assess the associated climate change risks in order to better safeguard our infrastructure, environment, safety, and way of life. Melillo et al. (2014) defined resilience as "A capability to anticipate, prepare for, respond to, and recover from significant multi-hazard threats with minimum damage to social well-being, the economy, and the environment." To prepare for these social, environmental, and economic changes, society as a whole must preemptively participate in the planning and policy changes that are necessary to protect our vulnerable community. The Hawai'i Conservation Alliance (2009) recommended four general actions that could help reduce the negative impacts of a changing climate in Hawai'i:

- Be well informed of potential climate change impacts,
- Maintain the resilience of environmental and societal systems by minimizing non-climate stressors
- Engage stakeholders in creating culturally appropriate adaptation and mitigation management options, and
- Actively plan for a changing climate so that today's short-term decisions do not make future actions more difficult. (p. 3)

Additionally, site-specific responses should include:

- Integrated utilization of early warning systems and procedures based on recommendations from the Pacific Disaster Center and the Maui Emergency Management Agency.
- Investment in infrastructure to protect life and property such as window boarding's, sandbags, and food and water reserves.
- Intensive first responder training for a select group of staff.

VIII. **Create a board-run Sustainability and Resilience Committee.** Currently, MOMI has a student-led Sustainability Committee, of which teaching staff and two parent

volunteers are lead guides. The main objectives of the student committee are to manage the recycling center, implement sustainability initiatives, and envision and coordinate our annual school-wide Earth Day Celebration. Although we occasionally touch upon the concepts of social responsibility, in an age-appropriate fashion, most of our focus is on raising awareness of ecological issues and the mitigation strategies associated with resource conservation.

The real opportunity to shift the existing culture and governance of MOMI towards sustainability and resilience lies within a higher scale of influence. MOMI's board of directors is already divided into committees such as Grounds and Facilities, Finance, and Development. Although I do not wish to tax the board any further, a strong argument could be made for the creation of a Sustainability and Resilience Committee that is led by a passionate and charismatic leader and guided by someone who is familiar with the theories and practice of resilience and sustainability (i.e., the sustainability coordinator). The committee should also have administrative and teaching staff as an integral part of its structure.

The organizational culture and operations aspects of sustainability and resilience (governance, revenue stream, social responsibility, resource use, waste management, and purchasing) should be examined at the scale of the board, administration, teaching staff, and student body. However, the advantage of working at the board level is that it has access to the entire operation and can enlist the participation of the other committees. From this point, adaptive governance could be utilized to fulfill their goals. Walker & Salt (2012) suggested that adaptive governance encompasses the notion of "distributive governance," which "pass[es] the decision making down to the level in the system where it is most effectively dealt with" (p. 127). If the goals are determined through the deliberation between a wide representation of participants at varying scales, a polycentric system of governance could evolve and "lead to the emergence of successful, robust rules and 'good' institutions that can spread through the system" (Walker & Salt, p. 128). In this way, MOMI would incrementally be able to shift towards a more resilient and adaptive style of governance.

Part III – Conclusion

Implementing resilience and sustainability goals can be an expensive prospect. However, we must carefully examine what the costs are for not being resilient. One method of ascertaining where to invest limited resources is the use of small experimental projects implemented at finer scales. Trevenna (2015) suggested an option she called "progressive incremental," which she described as "slow accumulative changes, [which] work best with both student and campus timeframes" (p. 222). This methodology focuses on building relationships with interdisciplinary stakeholders at varying scales and identifying and monitoring key increments that contribute to a cumulative goal. As previously stated, both resilience and sustainable goals can be pursued at the same time.

However, it is up to us to determine which is more important for a particular time and place. We have the option to change and now is the time to prepare and build MOMI's capacity for implementation of resilient and sustainable goals.

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