

# Sustainability: Then and Now

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## Guests

Sarah Sutton (US) and Kirsten Dzwiza (DE)

## Introduction

“Sustainability” is a term that’s heard everywhere, and can apply to every part of our lives. But how can archaeology and heritage, which are generally involved with events and technology from the past, contribute to current climate issues? Guests Sarah Sutton and Kirsten Dzwiza share their complementary approaches in using ideas and depictions from the past to deal with present environmental issues. They also explore the importance of cross-disciplinary collaboration and the sharing of resources, the possibilities and potentials of different technologies and programs, and the future outlook for archaeology and sustainability.

## Transcript

**Matilda:** Hello, and welcome to #FinallyFriday. This chat session is run by EXARC, the society for archeological open-air museums, experimental archeology, ancient technology and interpretation. My name is Matilda Siebrecht and today I am joined by two specialists from our EXARC community focusing on sustainability.

Dr. Kirsten Dzwiza is the founder of the [AMATEK Institute](#), which conducts research and aims to raise awareness for the potential of ancient technologies as sustainable solutions to current ecological challenges. It also provides consulting services to museums and nonprofit institutions. Her specialization is in water supply, agriculture and architecture in arid and semi-arid regions. And she is currently working on a handbook of ancient technologies in modern contexts.

Sarah Sutton is the founder of Sustainable Museums, which aims to help cultural institutions fund and implement environmentally sustainable and climate resilient actions. This work involves collaboration with learning institutions, such as zoos, gardens, and aquariums, but also focuses on cultural heritage resources and museums, due to Sarah's specialization in history and museum administration. She is also currently working on a book, which will investigate how arts and humanities collections can document climate change and human resilience.

So welcome to both our speakers. I have a quick question to start you off. So you both started in slightly different sort of sectors or positions to what you are working on now. What prompted you to become more involved in issues of sustainability? Sarah, perhaps you can start us off?

**Sarah:** Thank you. It's a joy to be here in a, such a comfortable community. So thank you for the invitation. So if I think back to how I got started there are actually already two phases in this work for me. The first one was nearly 15 years ago when I was asked to use my grant-writing approach to create a proposal for a sustainability plan for a campus of buildings in Boston. And as I did the research in order to prepare the proposal, it seemed to me that this kind of work, through energy sustainability, resource sustainability, was absolutely something that the museum sector needed to adopt wholeheartedly; that as charitable institutions, educational institutions, community-based institutions, we couldn't not do this work. And so I began looking for examples and bringing them in from other sectors, because we had so few in the United States museum sector. And so for a number of years, I've focused on buildings. And then after we had the recession, I focused on programs because we weren't building buildings, which was just fine from a sustainability point of view. And that work continued until 2017, on the 1st of June, when president Trump announced his intention to step out of the Paris Agreement. And it seemed to me that those of us in the United States who cared about this work would still do it. We would do it anyway without a federal mandate or federal leadership or guidance or encouragement. And I found that I had a number of colleagues who agreed with me and wanted to be part of this. And as I was assembling this group, all of a sudden 'We Are Still In' appeared on the scene, and it was a coalition, a voluntary coalition of many other US sectors doing this work, but they didn't have a public engagement sector or a cultural sector in any way.

And that's when I raised my hand and said, I think the museum group would like to join. And it took us a little bit of figuring out, a little time in transition, but by the spring of 2018, the cultural sector was a full fledged part of 'We Are Still In' and we continue that work today, trying to do cross sector engagement on sustainability work for the field. Trying to unleash the value of museums, zoos, and gardens, and historic sites to communicate on climate, to be good models on climate action and sustainability, and to use our collections and resources to educate and engage. And, I'm sure the listeners have been paying attention what's been going on in the United States yesterday and today, at the time of this recording, and I can tell you that we are going to be known as 'America Is All In', and we will continue to be part of the Paris Agreement and do our work starting in 2021 on a national and a local level. And I'm proud to be able to support this and delighted that so many US museums and cultural institutions have wanted to come along. I'll hand it over to Kristen now.

**Kirsten:** I wanted to get engaged in tackling current ecological problems. So I'm an archaeologist and love it. So I started looking for ways to combine both. And, after some initial difficulties, I actually found several development aid and research projects that implemented ancient technologies. They were concerned with local and regional problems, like wood and food scarcity. So I was really excited and thought, that looks like a great chance. So the projects were like large scale clay pot irrigation projects in India and Africa. Projects rebuilding ancient raised fields in Peru and Bolivia, rehabilitation projects of ancient tank cascade systems in Sri Lanka and even reimplementation of traditional bushfire management in Australia. There was a really wide range. I

realized that ancient technologies can be of a tremendous benefit to the present in multiple ways. But at that early point, I wasn't sure if the idea of focusing on this topic had a longterm potential or if it would be settled in a monograph. So I started a blog, collecting all the reports I found in the media. Currently it's about 110 or something like that. I developed a literature database, I read a lot, and it turned out that, not only ancient technologies get rehabilitated, but ancient materials as well. So the range broadened, I think that's the right term. There are hundreds of papers concerning experimental studies and the MIT, for example, is engaged in experimenting with ancient materials in contemporary building contexts, in terms of your ability and resilience. So, at one point there just came the point of no return. Ancient technologies in modern contexts is a huge, huge field of study. And I felt like I landed on a new planet and had to figure out how to establish a connection to people on my home planet and make them aware of the amazing potential right in front of us. That's absolutely when I got the idea of an Institute for the study of ancient materials, technologies, and knowledge, which abbreviated explains to the name of the Institute, AMATEK. So that was the journey and the process of getting into it.

**Sarah:** And it sounds... Kirsten, it's like opening a door to a whole new world, just like you said, isn't it?

**Kirsten:** Absolutely. The problem is that usually when you talk to people, to ensure that they can understand you, they need to have heard about what you are talking about before. And when I came to people at first, first time, I said to my colleagues, Hey, here, I want to organize a conference about ancient technologies in modern contexts. They were like, what? In Sri Lanka, they are rehabilitating the ancient structures of this tank cascade system, where they collect water in large tanks and the water goes down a hill and there are smaller tanks and they... with channels they distribute...and I tried to explain it and, and I tried to explain the irrigation, that's an ancient system to irrigate and to farm the desert. They were like: What?! That's when I started the blog and the homepage to show some examples. And it takes some time to explain to people, hear, see, that it is not just a fancy idea, that there actually have been lots of projects and supported with millions of dollars by the Green Climate Fund and the UN. And the Qanats in Iran, for example, they have been implemented on the UNESCO list of cultural heritage. But exactly, as you said, it's like opening a door and the first thing people see is like, What, nothing, because they haven't heard of it before.

And even when I talked to people from foundations, from development aid organizations, they're like, I really don't know what you mean. How can, how can ancient technologies really be useful? So it is important to collect all this material and to give examples, you open the door and they can see something and then they can adopt and adapt, so that they know, or they say, oh yeah, I know what you mean, I can grasp what you mean and then you go in the direction...

**Sarah:** Well, and that's an example of where I feel strongly that museum engagement is helpful on..., so that people can make that transition. There's been enough research on why people don't make climate change or environmentally sustainable choices. The human aspect of change is challenging. And we understand increasingly that in a social setting we need to take another person who's learning through a series of stages. They first need to have their awareness raised. Then they need to have some context. They need to build skills and ability to a point where they can apply their knowledge in a useful way. And then they need to be given that path, you know, we don't just open the door. We have to give them a pathway to move into this new space and build confidence, comfort, and willingness to try these new sort of...different, and therefore potentially risky things. And I've found it requires a significant investment in each human being that you're asking to take this journey, but that the return on the investment is huge.

**Kirsten:** Yes, that's exactly what I think. I think I would love to cooperate with museums because what you said, the raising awareness is one of the most important points actually, before you can actually spread knowledge, and start the knowledge transfer. Museums will be a great place to start. Museums would take this information, projects, videos, models to show actually how ancient technology impacts our problem solving today. And I think it will be a great opportunity.

**Sarah:** And so learners divide themselves into two topical categories, whether they're scientists or not. And the folks who think that climate change and environmental work is only for scientists, are the group that we, as cultural heritage folks, have the most leverage with, where we can make the most difference. And so I think back to the last few years, when I was lucky enough to live on the Island of Oahu in the state of Hawaii, and to participate in a restoration project where... it was called, He'eia, fish pond, and it was a restoration project for an 800 year old community agricultural site, which cultivated naturally, fish populations in a way that was safe for the fisher people and, in sync with the ecosystem, so that there was no overfishing, and there was always a ready supply of fish for the shared community that created this 50 acre site. And the restoration of that, and the public engagement as a community food source, is exactly what you're talking about, it's these ancient technologies that make such great sense in a sustainable way that also sustain the heritage and culture of that space in time of the Hawaiian. native Hawaiian population that has been decimated, threatened, and suppressed so completely. That's an example of a restoration project on a cultural and an ecological and a social level.

**Kirsten:** It sounds incredibly interesting and I hope you can send me some more information about that because I haven't heard about it before. And that's exactly what I'm looking for.

**Sarah:** Well, and here's another great clue. So, in Hawaiian, there were Hawaiian language newspapers that for the longest time were not continued or translated. And there is now a project to revive the Hawaiian language by translating the Hawaiian Newspaper Project and they're capturing information in there about climate a hundred years ago, compared to today. That is new evidence for a change in climate and human resilience to that. So it's a whole..., another resource that we're uncovering because somebody opened a door and some people are learning to look differently, at resources, which is the theme for all that we're talking about today, isn't it?

**Kirsten:** Absolutely. I think that's another pillar. We have the archaeological data, or the data that has been collected a hundred years ago and we cannot access currently or we don't know how to access and we keep reaccessing. Yes, and reviving traditional knowledge [at all], that's a huge part to see... I heard about the revival of knowledge concerning navigation. I find that absolutely fascinating. I read about it that the US Navy decided to train their sailors (navigators?) to learn to navigate by, by the stars and by traditional knowledge. So in case something, you know, their computers get hacked or they lose the connection so that they don't get lost when they're in the middle of the ocean.

**Sarah:** If I can tell the listeners of an example of that they might want to, if they haven't heard about Hōkūle'a, that is a reconstructed sailing ship, that has circumnavigated the world as an educational resource about traditional navigation using Pacific Island techniques. And at the same time that it's historic research and culturally important to the sector, it's socially important for the folks who have been..., the young people who become navigators through that process. It's such an important social responsibility aspect, that is based on sustainable approaches and historical technology that is critical for us to appreciate. And when our sector feels like we're lacking in relevance, this kind of work on environment, climate, cultural revitalization, is the point. It's the front leading edge. It's where we have our greatest opportunity for relevance right now.

**Kirsten:** I agree.

**Sarah:** But do you hear others, whom else do you hear with stories to share, because it's so important that like this podcast creates a platform for this kind of discussion, cause so many people feel like you mentioned, and I felt at the beginning, like, is there enough here to do this work? Does anyone else agree? Does anyone else care? And the answer is yes, yes and yes, but we need to talk about it.

**Kirsten:** It's really difficult to find people, I think. I started in 2017, and in 2018, I found the first project online and I wanted to do a conference. I found 12 people worldwide who were actually engaged in research and in projects where ancient technologies got rehabilitated. You have ancient structures and they get rehabilitated to use them again, or reimplementing ancient knowledge to develop new technologies to find solutions. And it was really difficult to find them, even though I have over 300 papers now in my literature database, but it's tremendously difficult to get hands on the people, because many of them are from like Iran, Afghanistan, Iraq, from African countries and I cannot reach them. I wrote so many emails and they all come back, like the email, it just doesn't work anymore. I think there is a huge potential. And with the Institute I'm currently, it's a one person endeavor. I would love to find a team and to find partners and people say yes, we're going to do that. I should say that it's really great to join you. I really hope that there's more people to become aware of the options, the possibilities that there are at our hand. It's not that..., you know in Germany, I'm pretty sure, in your place too, that there's, again and again, there is the discussion, okay, what kind of meaning does archeology have for the present, for the society? What benefit is there? And, you know, we get cuts on funding and I think this is really a great chance where archeology shows, well, look here: there is so much potential where archeology can be involved in solving current pressing ecological problems. Like ancient technologies can help you farm the desert. They save up to 70% of water in agriculture. The ancient technologies preserve and restore soil health. You can do water harvesting in a dry area. You use local resources. That means you include the local communities. It's not that you go there and say, here, you got some money, you got some technology from us, some knowledge and you know, we are great. And then you go again. It's the other way, you actually show people, help people to take charge. Be in charge, you know, be responsible for that. They know how to use the technology. It's local materials, mostly it's ancient local knowledge or traditional knowledge that just gets revived. So people really get involved. You give them the tools and just explain them how they work and then they can continue by themselves on their own. And, it's materials, it is a cradle to create a material cycle. So it's not only water in water-scarce areas, our sustainable agriculture culture is also in building and construction, there is a lot of research going on, on materials. Engineers focusing on material sciences. Doing research in ancient materials because of their sustainability, because they're so reliable and long lasting in house building, even in developing... climatizing buildings? Yeah, there are really so many options that are worth being investigated. And, one of my goals is to establish a new area of research where, you know, because currently it's really difficult to get information on that. That's why I write this Introduction, to give people a start, and a heads up. There is so much potential and people are just not aware of it. You know, we would need so many people, I mean, so many, so much good things could be done especially in development aid and sustainable agriculture in farming in dry areas. And that's so actual, so relevant today. We would just need more people who know about it.

**Sarah:** And the reason I believe that those projects are so successful, and other people believe it as well, is because it is designed to be responsive to the local situation. The people, the resources that are available and the current prevailing climate, which maybe adapting, in which case they'll have to adapt other ancient technologies, perhaps, to that new climate situation that they're in. And I think this is both an opportunity and a barrier. The fact that it's so local. When a project takes hold makes it more successful because it's really embedded in the community. But because it's so local, it also

means that somebody's good idea in one place isn't necessarily a good idea in another place. I always tell people to avoid 'bling'. Don't just copy the solar panels on the top of the building that somebody else is doing, because it might not apply on your building or in your community or in your climate zone. Each situation matters for defining the best response and we need to develop, help people develop the skills, so they make those choices themselves, instead of somebody swooping in and saying, here's the best solution for you that I've figured out.

**Kirsten:** Absolutely.

**Matilda:** I really didn't want to, but I'm going to have to interrupt the discussion here because we're running out of time a bit. But just a final question, before we open this up to our listeners. What are your plans for the future? I know that both of you are working on these books, for example, you've already mentioned the importance of kind of relaying this information to other people, but how, also can the EXARC community help specifically to make a difference in regards to the points you discussed today. We've mentioned it a little bit, but maybe Sarah, you could expand on that a bit?

**Sarah:** The most important thing we ask people to do about climate issues is to talk about them, is to normalize the conversation about environment and climate issues, so it's not a point of contention or a point of stress for anyone. And so in our case, with this family and EXARC family, is to think about how we can share the things that we're wondering about, the things that we're trying, the things that we've accomplished and to let go of the worry that someone might think you're bragging or that someone might think you're wrong. What matters is that we do this research exploration together and that we share what we're figuring out so that we can learn as we go. Our field has been trained to do all the research, do all the writing and then share it with the world as a done deal. That doesn't apply in this particular case. Working together, learning together, testing and sharing is the path that we have to pursue to be most successful, fast enough. And so in my work with we are still in, that's still my goal is how much cross-sector work can I do to amplify the message from the cultural heritage sector, about what we're learning, what we're doing and how we're really good partners in this work, with the technology folks, the governments, and the public.

**Matilda:** Kirsten, do you have anything to add?

**Kirsten:** My primary goal is to raise awareness for the options at hand and to provide and share the gained knowledge and basically to inspire more people to get engaged in research and the application of ancient technologies in modern contexts. So in terms of academic work, my plan for the future is to finish the Introduction and to make it available. In terms of the EXARC community, I think you can get involved in opening the door to sustainability for archaeology by participating in research, especially in experimental research and in developing robust study designs. That is a huge lack with current studies actually, but also by looking for more options to include ancient technologies, knowledge, and new solutions to current challenges. Museums could include ancient technologies in modern contexts in the exhibition and programs that's offering to their visitors, I think a hot topic regarding the present with solutions offered by the past. And in terms of knowledge transfer, involving the public and raising awareness, I'm planning to transform the AMATEK Institute into a nonprofit organization in spring. So there's lots of potential to get involved in research and in knowledge dissemination.

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**Matilda:** Perfect. Well, it sounds like there's lots of ways that everyone can get involved. So we already have quite a few questions here. Do you think the interdisciplinary approach you discuss will lead to more relevance for archaeology or to archaeology and therefore also to more support for

sort of archaeology-specific projects?

**Kirsten:** Yes, I believe it will definitely increase the relevance of archaeology, because we can show that archaeology has an impact on...solving today's problems and climate issues, and water scarcity, drought, desertification that's really important issues. Archaeology can help on a local and regional level, but it can help and it can have a huge impact. So it just has to be communicated.

**Matilda:** Do you have anything to add, Sarah? Would you agree?

**Sarah:** I definitely agree. And I think we're such a good team here, Kirsten and I, because she's the on the ground delivery system and the knowledge, she's like the knowledge sector that, and I wish to be the knowledge transfer sector or to at least enable that. The thing is that her examples bring real world stories, human scales people can relate to. So when they get amplified, as examples, as in, I see in the chat the discussion of the UN Sustainable Development Goals, when they're highlighted as examples of people taking action and applying their resources and abilities to local problem solving, it's so much easier for the public to see a connection then to those UN goals and to solutions than if it is just in the research. We need the research and then we need the delivery on the ground and then the amplification through the videos, the messages, the photographs that talk about the awesome work that all of you folks do.

**Matilda:** And actually, while we're on the subject of the UN Sustainable Development Goals, Sarah, is this sort of sustainability theme going further than climate issues? Obviously both of you are focused in your discussion mainly on, on climate issues, but are there examples of other projects, or do you have plans to focus on other aspects of the UN Sustainable Development Goals?

**Sarah:** That is the reason I feel the cross sector work is so important. If we look at the four, I call them the four apocalypses. So we've got a health crisis and equity crisis, a climate crisis and an economic crisis, especially in the United States, but in many other places as well that we can't just think of climate as for climate sake, climate is a solution to many of those challenges in different ways, which is why those Sustainable Development Goals have 17 categories where Henry McGhee out of the UK has done a great example of aligning museums work with the 17 goals, showing examples of where type of museum work might do for reducing poverty, improving food situations, improving, Life on Land, those sorts of things. The UN Sustainable Development Goals is a perfect map for how we can align with this work.

**Matilda:** I remember seeing something about that, actually, I find it really nice that there seemed to be a lot of different sectors now that have taken the UN Sustainable Development Goals and made them more, sort of more focused on what they specifically can do, which I think is really interesting. Do you have any examples, Kirsten, of, obviously your main focus when you started this? Do you have any examples of other sustainability goals that can be put in to practice?

**Kirsten:** Ancient technologies that can be rehabilitated or reinstated address, especially the Sustainable Development Goals: 1 No Poverty; 2 No Hunger; 4 Education; 6 Clean water and Sanitation; 13 Climate Action; 15 Life on Land and 17 Partnership for the Goals and for 1 and 2, for example, that's the rice fields in Peru, in Bolivia, in Mexico where ancient aggregated technologies are applied to ensure that even in extreme climate situations, in mountainous regions, people can grow enough food. It's also the water, of course that's the Qanats and are not only reimplemented, rehabilitated in Iraq, but also in China, they are used in, I didn't know that actually in Europe, they were also built in South America. And rehabilitation of these Qanats can supply a huge community with clean water. And of course, Life on Land, that's a great project. I recently discovered it's the Maya Mountain Research Farm in Belize and they are focusing on an educational centre, about

ancient agroforestry. So this against hunger, against poverty. It's also, for Life on Land, it's rehabilitation of soil. There are projects where ancient clay pot irrigation is used to grow trees, to rebuild to oases. To fight desertification so that ancient technologies do directly address multiple of the Sustainable Development Goals.

**Matilda:** Which hopefully we can find out, I suppose, in your blog. So if anyone's interested in hearing more about this, go along there. The equity crisis is a really good point that Sarah raised a few minutes ago. Do either of you have thoughts about how heritage and archaeology professionals can take or make meaningful steps to address crises in equity? I mean, I guess also in European archaeology or in those sort of places you touched on it a little bit in your answers, but more specifically about equity as an issue, perhaps Sarah, do you have any thoughts on that?

**Sarah:** I do have thoughts about it, at least in the US. So we've been performing poorly on this issue, except the opportunity has always been available to us. And the way I'm seeing it most right now is we're working with tribal nations to recognize their traditional ecological knowledge and especially when it comes to resource management. And so I live on the Pacific Northwest in Washington State, and working with tribal nations here to restore specifically the path of salmon. So a fish, up the river to reach their spawning grounds in order to re-establish a healthy population for, not just food for Native Americans, but also a food resource in the ecosystem. So it's stunning to realize that if those fish can travel upstream in order to spawn and that many of them are eaten by bears and they're grabbed out of the water, they're hauled to the side of the shore and they're partially eaten and the carcasses are left. Those nutrients help restore the quality of trees and other grains that are growing in the area, which then stabilizes the bank of the stream, which then keeps the stream cleaner and healthier for anyone in the ecosystem who depends upon it. So by having our government systems, the white government systems work with the native tribal systems, they're able to come up with a far better way of managing the land than what has been imposed upon them. And that's a great example of how we might make some good progress on establishing social and economic equity for folks who've been necessarily inappropriately burdened before.

**Matilda:** They sound like great examples. Do you have anything to add to that, Kirsten?

Kirsten: I'm aware of one project in I think it's Colorado, so in the USA, where it's about water rights, local water rights, where people rehabilitate ancient Acequias. So it's special kind of water canals and in combination with fighting to get the local water rights back so that the local communities can have access to the water actually running through their own land instead of that large companies have bought the water rights. And now if there is this struggle to get the water rights back, rehabilitate these Acequias to actually make the water run. There's the Mountain Institute in the Andes, they are rehabilitating 2000 years of indigenous knowledge to water management in the Andes and they combine it with contemporary science and technology, and build hybrid solutions to improve the water security, support livelihoods on strengthening communities and increase the ecosystem. So this is all in the hands of the local people.

**Matilda:** Yeah, I think so. You just mentioned, Sarah, as well that water rights do seem to be one of the big ways that we can contribute in terms of this equity issue. So with this type of work with, for example, sort of archaeology and the relevance for current issues in the world, would it be possible to set up an international cooperation project on this? I don't know if either of you have looked into this, obviously, Sarah, you, you already have your larger focused, sustainability set up, preferably not just in Europe. Are there funds for this? Do you know of anything that might be available for this?



**Sarah:** No, but I do know that this is the time to create that. There's the appetite for such an activity and we may start finding that we're going to be able to access international funds to support this work in a more organized manner. I think the opportunity is there for us to create that connection between what we know we can do, the UN knows it needs to do. It needs a mechanism that connects them. And we've got the brainpower just on this podcast to figure that out.

**Matilda:** Hopefully fingers crossed. Do you have any, I know that you've been looking into that a little bit recently, Kirsten, if I remember rightly.

**Kirsten:** I think there's a huge potential for international corporations and it's great to read that EXARC would be interested. So most efficiently we could probably see who was interested and set up a kind of think tank meeting where we gather the knowledge or, you know, there are so many options. Is it going to be an international cooperation project based on research? Or do we actually want to include organizations in development aid, or do we actually want to take action ourselves and say, well yes, in the United States, in California or in Colorado, we can actually do something or in South America, or also here in Germany, or do you want to go to India or to somewhere else and do some project there? What will be really easy is to set up an international co-operation project based on clay pot irrigation. To gather data, huge like field studies that can be parallel in the United States, in Europe, in India, in Africa, on a small scale each time in each case, but you know, to gather data, but not only lab data, but field data so that people on spot, so local people, can actually benefit. If you get together with people who will be interested in an international co-operation project to apply for funding we could see...Do we want to focus on research or do we want to focus on application, do we want one mix of it, what kind of area is it? Is it agriculture like agroforestry is interesting for investors too. So the question will be, what kind of results do we want to have and what do we want to do with the results? Do we want results in terms of research and other people can build on this research, or do we want to have results where we can actually say, okay, someone can start a business out of it. That local people can say, okay, we want to do afforestation...We want to grow food in the desert, or we want to go into agroforestry and then you can start thinking of going for the next five years and include investors. So that will be something to talk about. I think there are now many options.

**Matilda:** So starting more at a focus scale, and then kind of building up from there in terms of projects and ideas. I see Sarah has posted a couple of links. Do you want to expand on them a bit, Sarah, for those who are just listening?

**Sarah:** So the Climate Heritage Network, might be familiar to folks. It's a program of ICOM. So the International Council of Museums and Sites and so it's a heritage focused, it's worldwide. Andrew Potts is our fearless leader and he's created a network, an international network. It is a nice platform or partner for this kind of thing. I'd like to expand or extend Kristen's idea of let's say if we started with clay pot water resources, if we went from research and implementation to knowledge, funding for knowledge sharing and, continued implementation. That would fill the gap that we're looking for. We don't have enough researchers or funders or implementers. So the few that there are, we have to line up, so that they can scale the impact as fast as possible. And so maybe choosing an avenue that Kirsten has seen great opportunity in, and then figuring out how to fund it and amplify it. Well that would be the sweet spot of what we could accomplish and tie it to the UN goals, and give the UN the opportunity to support us, the Ford Foundation can fund it all.

**Matilda:** I feel like we definitely have to listen back to this afterwards and take notes and make a proposal or something. Cause there's some great ideas coming out of this.

**Kirsten:** I was wondering about a Kickstarter campaign to raise awareness and to address new people who usually, probably don't think of archaeology when they think about the Sustainable Development Goals, so we should talk about that chance.

**Matilda:** Yeah, it could be an option. For anyone who's listening in today, who's interested in potentially joining such a project, please do contact us through EXARC and, we can see, see if we can get something sorted. Also, if anyone who's interested in these organizations. They will also be on our EXARC homepage, for those who are listening in to the podcast. I will continue on with the questions. So, you both already mentioned a lot of really interesting projects, but, what projects have come up recently, aside from those you've mentioned already, which really excite, each of you, what initiatives or projects seem to be promising in your opinion, and why?

**Sarah:** The example of the salmon run would be the one that I thought was most interesting right now. I can brag about a very exciting new project. There is a private funder supporting clean energy generation and energy efficiency in the United States for visual arts institutions, in order to drag them into this climate action space. And it happened because of We Are Still In creating a partnership between sustainable museums, Rocky Mountain Institute, and the funder. So that's why I'm really excited about finding the chain of the workers who are on the ground, funders, and the network facilitators to make a level of change happen. And for those of you who are interested, it might be from an arts museum in the US, it's the Frankenthaler Climate Initiative just launched day before yesterday.

**Matilda:** Oh, perfect, very recent then. The link for that will be posted as well. Kristen, what would your most exciting, current initiative....

**Kirsten:** On the one hand it's the Mayan agroforestry I just talked about. I think research farm is fascinating. The other project is turning the Institute into a non-profit. This is a very exciting project. developing the business plan and figuring out what kind of research to get involved, how many job positions, how large will the team be, it's kind of the organizational part. Not actually doing the research part, but the preparation to get ready to do what can be done, to make an impact; that's, that's pretty exciting. **Matilda:** That sort of leads me into one of my questions, because of course, both of you are very passionate about this topic clearly, so I imagine you both do a lot of unpaid work on it yourself, but also when you're starting up...it's all trying to find funds. We've talked about a little bit already, especially for archaeologists who might be listening in, who already have to do a lot of volunteer work already just to get enough experience for future positions or anything like that, so who are already doing a lot of extra unpaid things, how do you think we can ensure that we are using our time sort of efficiently if we want to maybe, create a similar kind of project? What sort of advice would you give to others, working in some way in archaeology or cultural heritage who are trying to become more sustainable or initiate these kinds of projects based on what you've experienced so far?

**Kirsten:** This is exactly the point. If we would have a knowledge database or a knowledge hub somewhere, or a research area focusing on the topic we're talking about, everyone could just look up and see what would fit their own area, what they can do. What is there, what are they interested in? Now I think the best thing you can do is try to find as much knowledge as possible as is there and then see what addresses your area of research or your specialty, or what you're interested in and then see what can be done and then go for it. **Matilda:** So make sure to see what information is out there already. Do you have anything to add to Sarah?

**Sarah:** I'd expand on what she said about apply it to your own work. There is so much information yet it's challenging to find. So many opportunities it's challenging to choose among them. I've found the best way to do it is to look at my personal values. My personal commitments and skillset in the work that I do. So for each of us, we've got our sweet spot of talent, ability and interest. Nobody knows more about your particular work than you do, and you are the best resource and how you then choose to drive that forward matters at this stage where there isn't enough happening yet. So choose what you know, best and love best, and then collect the people and the information and the resources, move forward in the best opportunity available to you at the moment. And while you're pursuing that first opportunity, all of the other ones are to appear, you'll start to notice them more easily. So it sounds ridiculous and corny, but start with what's already inside you and expand on that because that's the special contribution each of us brings to this global challenge. Matilda: I think that's a lovely message. I feel better about myself already, so thank you for that. We have another question: It feels like the last 12 months have really shaken the way that we each exist in the world and perhaps what we also expect from the world. In what ways, do you think that the pandemic has shifted attention towards important sustainability issues? And in what way has it shifted attention away from these issues?

**Sarah:** I can give an example of our own experience that we are still in. When the pandemic just started, we thought we needed to stop doing our work because it was so overwhelming and we felt like we might sound tone deaf, if we were talking about climate while people were literally suffering and dying around us. And then we started to notice that a lot of the things we'd learned in 30 years of environment and climate work and applications in addressing the pandemic, that we needed to bring our voices back into the discussion, because you understand that facts don't change minds, that trusted people, help people change their behaviour, that individual actions matter, yet collective action is what makes the difference. So many of the characteristics of what we understand about climate change and behaviour change around climate applied to behaviour change towards tackling a pandemic. Then the equity issues appeared and we realized that the equity issues were something that climate [solved]. So I think it's started to shift us away. And then it's given us an opportunity to illustrate our wider relevance, that climate affects every part of society and the world. We need to understand it better in order to help all of those things improve.

**Matilda:** Would do you, agree Kirsten?

**Kirsten:** I'm just thinking I couldn't have expressed it any better. It's perfect. Thank you.

**Matilda:** I actually have something that adds on a little bit to that in relation to the pandemic as well. It sort of forced people to change their ways of doing things in a lot of respect. You mentioned the fact that not being able to do work, even things like I'm just thinking in terms of something very different, like online conferences is suddenly now a thing, you know, that that is possible because of the pandemic. People had to be forced to do something that they thought was really difficult. And actually then it worked really nicely and it's now easy and it might be a thing for the future. Do you think that there is hope for a similar kind of push towards making sustainability a forefront runner, forerunners or pushing it to the front in world discussions? Kirsten: It's probably easier to disseminate the knowledge about it or to talk about it, because more people are online and using online media. So if you use online conferences or the technology that is there, you can probably can address more people, attract more people than before the pandemic.

**Sarah:** I agree that the technical changes have given everyone a path to seeing that they can change behaviour. There are challenges and opportunities with that, but more people have had to engage. Everybody's experiencing the pandemic and when we can connect climate, the experience of changes in behaviour in order to address climate change, to the experience of changing behaviour

related to the pandemic, people are much more able to see that they have capacity. They have agency for change that can make them successful tackling climate, the way that we've had to try to be successful tackling the pandemic. So we've had a quick lesson in how to work on climate action through this horror of a pandemic so I do hope that we capitalize on this forced learning situation so that we can make the best that we can out of it.

**Matilda:** I have one last question I think, and then I'll wrap up for the day. So we've talked a lot already about sort of the importance of collaboration across different disciplines, across different specializations and I understand you're both working or hoping to work predominantly with more sort of institutions and companies as well. But how does the general surrounding community, become involved with projects? So, Kirsten, you already did mention, the focus on community and a couple of projects, but for example, Sarah, do you find that members of kind of the general public, shall we say, also become involved with these projects? Is it something that is widely known about, or how does that work? Sarah: The best projects are the ones that engage the community. And we in the United States, at least, we tend to focus on policy and power and money instead of you know, where the rubber meets the road, as they say. So to the extent that we can do more work in the community, have a better chance of sustaining change behaviour, which supports changes in policy that reinforce or make it easier to change the way whole sectors like business, education, manufacturing, and then public engagement follow along.

**Kirsten:** I agree and I think the community can get engaged via citizen science projects.

**Matilda:** Well, I think we'll round it up there. Thank you very much, Kirsten and Sarah, for joining us today and sharing your experience and your expertise. I think we've come up with a lot of interesting ideas. I know that I am definitely inspired for the future. So hopefully our listeners are as well. And if anyone is listening in and has ideas or wants to become involved, as I mentioned earlier, please do contact us at EXARC and we can see what we can do. Thank you very much to our speakers.

**Kirsten:** Thank you for this invitation and thank you for the opportunity to meet you and to get to know Sarah. It was absolutely fantastic.

**Sarah:** We've had a wonderful time. This is great. Thank you.

**Matilda:** Thank you though, to everyone for listening to this episode of #FinallyFriday by EXARC, it was lovely for you to join us today. If you would like to become more involved in EXARC, why not become a member? Alternatively, you can make a small PayPal donation through the website to help support EXARC in its endeavours. As we heard today, it is very important to get all the help that we can from everyone. For now, have a nice evening morning, afternoon, and see you next month for another episode of #FinallyFriday.