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Demystifying the Carbon Markets | Episode 13

Maryam Ayati, Co-Founder Watr Blockchain Protocol

This morning, SmarterMarkets host, David Greely, sits down with tradfi turned defi commodities expert, Maryam Ayati, to explore the role of blockchain and decentralized finance in the carbon markets. Join us as we identify technological opportunities and tools available to make carbon markets more transparent, less prone to error, faster, and more efficient to solve for net zero with integrity.

Maryam Ayati (00s):

I fall in a camp of augmenting, adding, building a road from where we are today and working incredibly hard to collaborate with the existing incumbents who are willing and open to being more inclusive and leveraging what is now possible versus insisting on what was once the only way of doing things.

Announcer (29s):

Welcome to Smarter Markets, a weekly podcast featuring the icons and entrepreneurs of technology, commodities and finance ranting on the inadequacies of our systems and riffing on ideas for how to solve them. Together, we examine the questions are we facing a crisis of information or a crisis of trust and will building smarter markets be the antidote?

David Greely (55s):

Welcome back to demystifying the carbon markets on Smarter Markets. I'm Dave Greely, Chief Economist at Abaxx Technologies. Our guest today is Maryam Ayati, a Co-Founder of the Watr Blockchain protocol. We'll be discussing the role of Blockchain and decentralized finance in supporting transparency, liquidity and choice in the carbon markets. Hello, Maryam. Welcome back to Smarter Markets.

Maryam Ayati (01m 19s):

Hi David. It's a pleasure to be with you.

David Greely (01m 21s):

Well, I'm really glad to have you here today to discuss the role of Blockchain and the tools of decentralized finance and the carbon markets. Now with these tools, there's the specifics of the technology and then there's everything that's a technology makes possible.

Maryam Ayati (01m 36s):

Yeah.

David Greely (01m 38s):

I'd like to start our discussion with the second part first, if that's okay with you, because you know, this technology, it allows for new market structures, which are less centralized and more inclusive and so I was hoping you could start us off today by sharing your vision for the role of Blockchain and decentralized finance.

Maryam Ayati (01m 56s):

Absolutely, Look, I'm an old school trade and commodities girl in my first iteration and so when I come at all of this from a lens of building on what we already have in the commodities and the voluntary carbon markets and augmenting those with what decentralized finance technology and the governance mechanisms inherent in it really enable and create for us and so I see it as a significant opportunity. I see it as additive. I see it as a bolt on and certainly not something that I believe will replace our established ways of doing things today. And today is, you know, big, bold underlined. Ultimately what Blockchain does and distributed lighter tech does at its heart is it gives us the option to first augment, eventually reduce and over time eliminate the need for trusted intermediaries and in the first iteration of this, it really allows us to remove redundant or unnecessary rent takers in the middle who are governing what we believe truth is.

Maryam Ayati (03m 15s):

Who are governing what we believe good is, who are governing, how finances should be spent and who are governing how we should access things like capital for the carbon markets. When I say governing, I don't mean governments. I simply mean that international and multinational bodies we've created often for profit to sit between resources and their consumers buyers and financiers because we didn't have the technology in the past. So someone, something, an entity, a committee, a group had to be the aggregator of trust and had to be the safe house that sits in the middle of us and what we consume. That's increasingly less and less necessary because technology and smart contracts can do that without bringing in the complications of humanity, human error, and you know, some human judgment that's at its very sort of macro lens. But if you sort of dig into this a bit more, what we get to with something like the voluntary carbon market is the ability to create an alternative where things like integrity, where things like a good carbon credit, where things like all the other attributes that are associated with the VCM and the units of carbon, whether it's the societal, the governance, the other environmental attributes, all of that can be self-defined.

Maryam Ayati (04m 56s):

Whether self is an individual at a retail level who is looking to participate in this market and buy something or whether self is an organization or an entity or a government or a country, but to get to self-defined versions of integrity and good to be able to allow the transfer of capital seamlessly so that every buyer, every financier, every user, every market participant can be treated equally, regardless of the scale of their organization or the reach of the organization they represent sounds pretty interesting and exciting and inviting to me and I think it simply enhances the market.

David Greely (05m 43s):

Yeah and I'd love to dig into that a little bit more with you, because as you said, you develop your career in the traditional markets. I imagine you still see a role for many of the aspects of what conventionally market intermediaries and other exchanges did, but you see a difference in terms of the replacement of sounds like almost like a gatekeeping function. And so your vision, I imagine differs from those who might see some of their role in the markets being displaced or disrupted by these changes. Could you share a little bit about some of the roles that you do see for some of the existing market intermediaries and exchanges?

Maryam Ayati (06m 25s):

Absolutely. I see this, you know, if I were to be very simplistic just for the sake of conversation, if one's building a new path, a new bridge, a new highway, you have to start where the existing roads are and to create a path to something that perhaps looks different, but is building on that archery of transport and mobility already. I see the financial markets, the commodity markets doing a similar thing when it comes to DeFi Blockchain and ultimately cryptography it, isn't going to be in my opinion scalable or credible to ignore traditional participants. It's not going to be scalable or credible to assume that, you know, a smart contract can replace all of human judgment, all of the committees, all of the integrity work that's being done or any of the regulators, but it is credible to believe that that technology can link in to those systems, start to create an alternative and augmented path where there's greater inclusion, there's greater participation from all.

Maryam Ayati (07m 47s):

And there is greater access to capital resources and definitions of good, the self-sovereign definition of good and self-sovereign governance are key to this decentralized world. So it's far less about trying to replace the old it's much more about trying for us to evolve what exists today. So it genuinely leverages the best technology and some of the greatest minds in this technology to be able to create an alternative and that alternative is simply more transparent, less prone to error, faster, more efficient, but is governed by a lot of the same compliance requirements that we all know need to be in place and a lot of the same quality requirements that we know need to be in place otherwise, you know, you've seen what happens when the crypto market completely ignores things like standards and established ways of working or completely ignores quality assurance or ignores KYC, AML. Those things are perhaps interesting experiments, but they're not real credible ways of getting resources moving through a system. So I fall in a camp of augmenting adding, building a road from where we are today and working incredibly hard to collaborate with the existing incumbents who are willing and open to being more inclusive and leveraging what is now possible versus insisting on what was once the only way of doing things.

David Greely (09m 36s):

And we certainly are all for trying to find ways to make markets smarter markets and as we, you know, augment what exists and look to move farther down that roadway maybe you could walk us through some of the ways that you see these technologies making existing markets function better, you know, can they make them more liquid, can they make them more transparent you know are there some

things that you see in current markets where these would have a direct application and also as you were alluding to, you know, maybe some watch out force given some of the mistakes that may have been made with using some of these technologies so far.

Maryam Ayati (10m 16s):

Yeah. I want to break that down into a few pieces if I may, the first part is around how might we create greater liquidity and access by leveraging DeFi tech and the solutions in the market today, but bridging that with what's necessary in commodities, you know, if you, if you look at the voluntary carbon markets today and let's go straight to that subject, no two projects are exactly the same and the market doesn't value them as exactly the same. Hence you know, the whole notion of a voluntary market where these credit units are associated with a specific way of achieving verification under standard methodology, but as time passes, we're seeing the market and buyers value different attributes of each project differently, whether there's female participation in a project, what its impact is on the ecosystem around it. So, they're not fungible, right.

Maryam Ayati (11m 28s):

And bundling them into baskets or buckets or contracts that by definitions have to standardize to be able to have the liquidity and sufficient participation in a centralized exchange that is forcing something that is genuinely non-fungible to become fungible. That seems both unnecessary and a wasted opportunity. We're just taking a square peg and trying to shove it down the round hole of what we're used to always doing. I wonder if that's good for the market. I'd argue it's not. In addition, there's a significant amount of retail liquidity that doesn't have access to genuinely participating in what is ultimately a financing scheme to clean up the planet and how might we create access for retail participants at a global level to exercise reach, governance and ability to fund what they believe is good, because that's ultimately the objective of this not again creating a giant global intermediary who again is taking choice from local organizations and individuals who are co-located with the project.

Maryam Ayati (12m 51s):

Right. I don't know if that makes any sense, but I think about history and the way we sort of developed our resource industry and the way resources access to them, their exploitation came with significant opportunity, but in many ways, you know, I think we all agree created the climate dilemma. A lot of what happened in that first iteration on resources was creating these centralized bodies, whether it's an international oil company or a giant global bank who is funding it to intermediate between resource holder and resource buyer to monetize that transaction and the outcome of that was leaving the resource owning country societies, governments much poorer, both for opportunity and for wealth, but also leaving them with significant legacy pollution and as we go about trying to address that dilemma, the climate dilemma, if we do it in exactly the same way we did the last iteration on resources, if we insist on international and often from the economic north bodies and financiers and wealth having the opportunity and having all of the clouds to, again, intermediate and leave a vast portion of the population stranded from participating, then we're just creating the same cycle all over again.

Maryam Ayati (14m 39s):

And once that was necessary, and once there was no other alternative today, it is no longer necessary. There are alternatives to allow participation at a very local and global and personal level through the end to end of these supply chains, financing, verification, et cetera and governance and so there is a moral and financial societal and climate obligation to do this, right.

David Greely (15m 17s):

I know I've heard you say in the past that, you know, these technologies help us create common ownership of our common problems.

Maryam Ayati (15m 23s):

Absolutely.

David Greely (15m 25s):

And you know, a lot of what you say it reminds me, you know, I'm an economist by training and it sounds what you're describing is markets that have much less market power, much more accessibility, kind of the way economists always assumed they operated, but you know, now perhaps actually operating that way.

Maryam Ayati (15m 42s):

Well, I mean, it ultimately comes down to creating shorter feedback loops between capital values and governance, and it's increasingly possible and plausible to do that with decentralized technology. I mean, imagine a genuine inclusive governance model for any of

these ecosystems, imagine a world where every participant, not an executive committee, not, you know, a selected board where people aren't forced to delegate their choice, their decision and their values, because they don't have access to participation and we don't have to imagine that that's real. We just have to enable it and we have to be willing to participate in it and we're seeing various entities and organizations experiment with that in the Blockchain and LT space already. I mean, and you asked me in your last question, whether there were examples of this, that, that perhaps had tried valiantly and not done as brilliantly as one had hoped.

Maryam Ayati (16m 54s):

And, and I think, you know, the obvious example is KlimaDAO, which I believe opened the market's eyes to the potential of retail participants playing in the carbon markets. Although Klima didn't get all of its quality checks, et cetera, sorted and it had, you know, all sorts of credits going in and out the system, but what they wanted to achieve is digital sequestration of carbon taking carbon credits off the market, retiring it and making them disappear and they did that initially with impressive speed and scale. Now imagine taking that sort of access and reach adding to it things like quality and integrity verification for the carbon adding to it the ability to allow those carbon credits to go on chain, but also then come off chain, you know, once someone wants to either retire them or once someone wants to bundle them with a commodity, but in the interim, they exist as an asset class, all of their own with various attributes, with various pricing mechanisms and all run by a DAO, which is a decentralized autonomous organization. That means no individuals calling the shots. There's no committee in the middle deciding what the answer is. It's the whole community voting and everyone having one vote for each token they own and that level of governance and granular governance is so inclusive. Imagine doing that in Africa for last mile distribution of financing to subsistence farmers, imagine creating digital identity at that level. I mean, the possibilities are endless and carbon is the easiest place to start because it is already a digital commodity.

David Greely (19m 04s):

And I'd love to dig into that part, certainly I feel like it really brings us back, you know, to, to the first part of the discussion the technology itself.

Maryam Ayati (19m 11s):

Yeah.

David Greely (19m 14s):

What is it in particular about the carbon markets that makes these specific technologies such an important part of the solution?

Maryam Ayati (19m 21s):

Well, first that it's already a digital asset in most of the work we do with our partners at Watr, we're working to bring a physical asset to a digital form and then tokenize it starting with a digital asset is obviously wonderful place to be. The second thing that's incredibly interesting is if you believe carbon credits are not fungible in that they have fundamentally different characteristics depending on the project they come from, whether they're nets or nature based solutions, whether you know, what vintage they are when it comes to various methodologies, blah, blah, blah, right. Pick your box, BUT if we believe they're not fungible then really nothing captures the ability to have multiple classes of the same asset, the same way that Blockchain and DLT technology do and you know in a tangent that might not be immediately obvious to everyone, you know, NFTs are perfect examples of digital assets that are non-fungible.

Maryam Ayati (20m 39s):

And so being able to track and trace them at a project specific level makes the carbon markets much more transparent. It allows me to now exercise choice without waiting for a committee to tell me whether or not I should like where this project comes from, because I'm not looking at a bundle. I'm literally looking at a specific project, a token representing a specific project that I can click on and see everything I need to see. Now, if I want to delegate verification and integrity, I can still do that by all means. But if I choose not to, I can also do that. I can do my own verification and so being sovereign and having transparent providence tracing that is really irrefutable is the forte of Blockchain and decentralized tech. Once you achieve that and you have this token that represents a carbon credit derived from a specific project then what you can do is make that available to a whole range of participants in a whole range of ways that are incredibly unique to the DeFi market.

Maryam Ayati (22m 02s):

In a decentralized exchange one can buy and sell against contracts that are user generated. So I don't have to wait for the CME to issue a contract for me to be able to put my carbon credits on an exchange. I can generate one, or I can see any other contract that actually meets the requirements I have and put my carbon credits in that liquidity pool. The market decides no intermediaries decide what a

good contract is. And there can be hundreds of contracts, hundreds of liquidity pools, you know, it's automatic market making, right? Anyone can be a liquidity provider. Anyone can be a market maker and anyone can be an organization, a retail participant, or a group of individuals, as long as they pass the requisite KYC AML requirements of that environment and everyone who meets that hurdle is participating in the governance and is participating in the economic rent created by that exchange by that ecosystem, by that trade, it sounds Utopian and yeah, sometime in 2016, when I started looking at Blockchain and DLT, et cetera, I was sure it was all just idealists, completely oblivious to what is real in the market and the more I learn and the more we build and the more I see what's genuinely possible. Now these are, it's all about self-sovereignty and leveraging the technology to create an efficient market, which really ultimately is all of our dreams.

David Greely (23m 52s):

And it's, you know, you raise such an important point about being able to distinguish, you know, various qualities of say, for example, a carbon credit, or being able to look at projects, somebody wants to invest in or credits they want to buy a project from and not having to just say, well, there's one top down standard and that's the only thing that's bought and sold, but there's gonna be a wide variety of projects and credits with various attributes, some related to the carbon, some related to other aspects, whether it's biodiversity or the way they're governed. So, you know, it's interesting because in so many of the conversations, I feel like this is often lost on people that within commodities markets, that's always been more the, the, the rule than the exception that, you know, I kind of spent a lot of my career in the oil market and there's not one quality of oil that's sold there's many qualities. There might be one or two reference benchmark contracts, but people have always traded various qualities of oil in various locations. And as long as there was transparency that buyer and seller could agree on what was being bought and sold, you can trade different qualities at different prices and a lot, I think of what we're seeing with some of these, you know, newer technologies is they allow us to look at whether it's a project or a good and really understand its provenance, where it came from, where it passed through what its footprint looks like whose hands have touched it and then be able to enter into agreements oh, that is worth this price. Maybe that's a little bit more than the reference standard. Maybe it's you know, less, but people are able to make that choice because they have the information. And I feel like that gets lost in a lot of conversations.

Maryam Ayati (25m 49s):

And it's not a convenient truth, right you know the huge market emerging. There are powerful incumbents across the supply chain, occupying varying positions of influence and control and information gives, you know, provides control in this market. Especially I think that many people have made significant bets over, you know, at least the last decade and so perhaps it's safer to wait for a government or a committee or a body to tell us what the answer is and exert enough influence in the process that the answer fits our individual perspectives of what we think good is whether that addresses the global community you know, I would say it doesn't, and it really robs us of the opportunity to do this one, right and it robs us of the opportunity to be much more inclusive and much more data driven on this iteration of the economy because the carbon markets themselves could really benefit from increased liquidity.

Maryam Ayati (27m 10s):

They could really benefit from the sort of retail participation. We saw jump into Klima the moment it was available to them, right. That wasn't an anomaly that was demand waiting, latent demand waiting to be allowed to participate meaningfully in something it cares about. I often talk about activism as being unfortunately misinformed. I have incredible friends who are environmental activists, social activists, and they are protesting things they don't fully fathom, and they are angry at things on their laptop, build with aluminum and metals that come from places they would not. They wouldn't approve of using electricity, generated using arguably, coal half of the time, et cetera, et cetera. So we have all of this energy in the world that wants to do something that wants to create impact, but we're not giving it the right information to channel that impact and energy as a force for good as a constructive force.

Maryam Ayati (28m 28s):

And I believe that carbon markets being such a global and common dilemma are also a global and common opportunity and we really should, you know, to the extent that, that is possible without compromising integrity of the system, create a system that is much more inclusive, transparent, and allows broader participation. The other magic thing we don't and I say magic deliberately. We don't really think about often when we talk about these decentralized ecosystems is the amount of innovation and opportunity for innovation that goes into them. An open source you know, Blockchain ecosystem, an open source protocol is really about a community of millions of innovators and entrepreneurs collaborating together to continuously iterate and improve. We don't see that anywhere in a centralized organization. One of the first things, you know, I did when I, when I left Shell was start to understand things like non-FTE resources who are contributing to our ecosystem.

Maryam Ayati (29m 51s):

And it was an incredibly novel concept to think about how many people that I will never pay. I will arguably never meet or waking up every morning and thinking about how they might improve build on or innovate on something that we've created and that concept of an open source, inclusive ecosystem with a massive non-FTE workforce of global entrepreneurs building on it creates the opportunity to iterate, innovate, and really get efficient and sharp in a way that none of our centralized ecosystems have ever achieved and so if you look at, for example, the non-FTE return per FTE in any organization, and you look at something like Ethereum, that has, you know, I think, I don't know how many employees, not many, you see the whole might of that ecosystem is based on innovators and entrepreneurs who will never work for Vitalic. Who've never met him.

Maryam Ayati (31m 02s):

Imagine if we could do that with any of our centralized exchanges, imagine if we could do that with any of our councils or committees or governance bodies, we just can't, we don't have that porosity and so we're not benefiting from the collective genius of an open source economy and that's the other thing that I think makes carbon incredibly interesting in this space, because it allows all of these young people and old people and everyone from all over the world, men, women, et cetera, who are passionate and are varying degrees of expertise, activism and energy to this space to really come and innovate and collaborate on solving the problem and we can't do that in a closed system.

David Greely (31m 54s):

It is really impressive and a wonderful resource that we all have and can share together. I wanted to ask you though quickly for those, for whom this might not be obvious, you said that, you know, carbon is, you know, natively a digital asset and it reminded me a little bit of like Phil Hardwick one of our guests, you know, would say that, you know, a, a credit is basically a stack of contracts or a stack of legal documents. For those, you know, who don't quite connect the dots between why a carbon credit or carbon is natively digital, could you give a quick explanation of how you see that?

Maryam Ayati (32m 31s):

Absolutely. You're setting a little trap for me now. It should be natively digital. We've created that paper based trail for it like we do with everything else. It's not necessary that it go through that whole process. Now, if you look at, if you look at like something like Stripe and the way they procure carbon credits and make that available for their consumers on a project by project basis, all fully digitized and linked at a project level at a source upstream level to the consumption with various pricing points, with a glossary that tells you precisely where these things come from, what they do. That's what I mean by digital. It already exists in digital format and it's not necessary to then reintroduce it into all of our paper based formats unless we choose to and of course we do because we need to go through centralized verification processes and we need to document the methodologies and for financing, all of that today is paper based. So, you know, we create the truckloads of paperwork that we always create. It doesn't need to be that way and it's nascent enough that we can establish all of these, you know, all of these ways of working in a purely digital fashion. It doesn't exist in quite the same way why doesn't that oil exist or copper exist or any real world asset today exist it's a calculation and that calculation is beautifully delivered with algorithms and smart contracts.

David Greely (34m 25s):

Yeah, we certainly don't need to be cutting down a lot of trees to make paper to prove that we've planted a lot of trees. That's for sure.

Maryam Ayati (34m 32s):

It's insane. If, one takes seven steps back literally and looks at the whole ecosystem and industry we've created around this, it is a little bit mind boggling and it's wonderful and it's well intended because we're trying to do a really great thing for the planet, but it can be simplified and it doesn't have to take the path we've taken for every other thing, which has been to centralize aggregate, create rent takers in the middle who are then monetizing the climate crisis instead of, you know, creating universal access to the opportunity presented by it.

David Greely (35m 18s):

As part of that opportunity, as we said in the introduction, you are the Co-Founder of the Watr Blockchain protocol. Can you walk us through what is the Watr protocol and how are you bringing this technology to help solve real world problems?

Maryam Ayati (35m 35s):

Of course the Watr protocol is a layer one Blockchain ecosystem. What that means is it's comparable in function to things like Ethereum, Polkadots and Algorand and it's really the base layer, Web 3 code that decentralized applications, ventures and businesses are built on now where an Ethereum is an open source, amazing ecosystem for the transfer of data and information, Watr aims to leverage similar technologies co-created by some of the giants of Blockchain and crypto to bring real world assets on chain to make the footprint of everything we consume transparent and visible through providence verification and tracing all self-sovereign as in no one tells anybody else what good is every organization, every individual chooses for themselves, but has the ability to genuinely choose the footprint and the resources they choose to consume finance or participate in. Now, that sounds incredibly vast and big and, and unattainable I know.

Maryam Ayati (37m 09s):

But broken into baby steps, we've built a Blockchain protocol we go live with the DevNet next week with one of the largest Blockchain ecosystems on the planet. We've got some amazing partners from conventional commodities and we've got some amazing partners from the world of tokenization and we are working with a whole bunch of applications to bring carbon credits and commodities such as aluminum, copper metals, energy on chain tokenized bought sold on decentralized exchanges that leverage the latest technology and leverage decentralized finance within compliance guardrails that make sense for the regulated world and we've had incredible support from the industry. There, literally hasn't been any door we've knocked on who's told us to go away and it's uninteresting. The worst we get is we'd like to watch and see what happens because it's all incredibly new. So I think the industry, my, my old industry, the mining industry, the trading houses, the voluntary carbon market and the decentralized and DeFi economy are both ready to tackle, you know, the \$17 trillion commodities market with this latest technology and bring that efficiency, bring those new markets, bring the differentiated commodities that one can get when we can have genuine ESG differentiation, bring those to market.

Maryam Ayati (39m 05s):

And that's what we're doing. It's a lot of fun. It's the most fun I've ever had the hardest work, but the most fun.

David Greely (39m 14s):

I was amazed that you just kind of slipped in very nonchalantly that you're going live next week. Congratulations, it's a massive accomplishment.

Maryam Ayati (39m 22s):

Well, thank you very much. It's been a very, very long time. It's our DevNet. So still lots of testing and closed system to make sure everything works as it does, but we've just been blessed with incredible investors, stakeholders, and partners. So I keep pinching myself and knocking on wood and hoping it all keeps going, but I do think in all seriousness that we're also at a moment in time where the intersection of technology, decentralized technology, cryptography, sustainability and commodities, is it's just all happening at once and you're seeing this amazing sad but amazing movement toward self-sovereign decision making as a consequence of various traumas around the world. The Ukraine war is creating a self-sovereign movement around self-sanctioning organizations and individuals and countries choosing who they want to do business with and who they don't. I don't think we've ever seen that sort of grassroots movement before. We're seeing it on consumption organizations like Apple and Tesla, really getting involved in choosing what footprint they will finance in the commodities they purchase to build their products, financiers and shareholders getting very clear about what they will and they won't tolerate that intersection with some global regulators really stepping up regulating the DeFi market has created this moment in time that I think is genuinely the opportunity of our generation and it just incredibly humbling to be able to tackle a small piece of that.

David Greely (41m 32s):

Thanks again, to Maryam Ayati, Co-Founder of Watr Blockchain protocol. We hope you enjoyed the episode. Join us next week for our final episode in this series on demystifying the carbon markets. Our guest will be Sonja Gibbs, Managing Director, and Head of Sustainable Finance at the Institute of International Finance and a Member of the Governing Board of the Integrity Council for the Voluntary Carbon Market.

Announcer (41m 58s):

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