Global Cleantech Innovation Programme (GCIP)
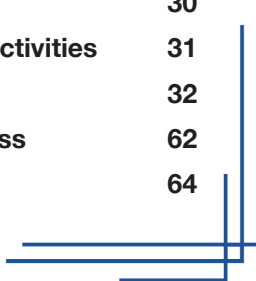
GLOBAL FRAMEWORK FOR CLEANTECH ECOSYSTEM ACTOR ENGAGEMENT

Contents

Acknowledgments

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Introduction

Purpose of this framework

The Global Cleantech Innovation Programme (GCIP) is designed to respond to the increasing global demand for environmental sustainability, climate action and to unleash the potential of cleantech innovation and entrepreneurship to help transform priority sectors and systems. Under GCIP's Theory of Change, the desired impact of the overall program is to enable innovative cleantech SME's to significantly contribute to climate mitigation in order to attain low carbon development and job creation.

This framework is part of the GCIP Pillar 2 activity addressing Cleantech Innovation and Entrepreneurship Ecosystem (CIEE) cleantech ecosystem strengthening and connectivity. Pillar 2 supports the strengthening of national cleantech ecosystems of GCIP partner countries, the identification of synergies across national ecosystems, and the connection of different ecosystems for knowledge exchange and partnership building.

The purpose of this report is to guide project executing entities (PEEs) in GCIP partner countries in the design and implementation of coordinated activities aimed at increasing internal connectedness in national and local CIEEs. It does not look at ways to increase international connections between different countries ecosystems: this topic will be covered in the next framework, on cluster development.

This report provides a flexible framework which can be adapted to different national contexts. The framework consists of guidance to practitioners in designing and implementing effective engagement interventions, and suggestions for ways in which other ecosystem actors can proactively contribute to building and strengthening connections within CIEEs.

It will help GCIP partner countries to:

- Understand the key roles in a CIEE and how they interact with each other in order to better use the framework

- Design a process for effectively engaging the different roles to increase the CIEE's internal connectedness

- Produce guidance for actors within the ecosystem on what they can do to facilitate and strengthen connections with other ecosystem actors

Executive Summary

The purpose of GCIP is to provide partner countries with the frameworks, processes, and tools to help their ecosystems evolve into self-supporting networks. The goal is to develop ecosystems which can produce and scale multiple cleantech solutions, attracting entrepreneurs, investors and demand owners to contribute to climate impact, high quality jobs and sustainable economic growth.

Connectedness is a key determining factor of overall effectiveness in producing and scaling cleantech innovation. Connectedness has two aspects: external connectedness measures the connections with other ecosystems, either within the same country or internationally. Internal connectedness measures the web of connections within a local ecosystem or cluster. Startups located in ecosystems with a high degree of internal connectedness experience faster revenue growth than those in weakly connected ecosystems.[1]

This report examines the roles and relationships between actors in a Cleantech Innovation and Entrepreneurship Ecosystem (CIEE) and provides a framework to guide the strengthening of those relationships to increase internal ecosystem connectedness.

CIEEs contain the same key roles as generic innovation ecosystems, but the roles themselves and the relationships between them are different. The principal ecosystem actors in an innovation ecosystem are entrepreneurs, government, universities and research organizations, risk capital providers, corporates and accelerators. Government provides funding support for early-stage ventures, a supportive regulatory framework, creates lead markets for new cleantech solutions, and helps to ensure that sufficient infrastructure is developed. Universities provide the research, which is the foundation of many cleantech ventures, as well as the talent needed to develop and sell complex, innovative solutions. Risk capital providers supply early-stage funding to ventures which are not yet ready for conventional financing options. Corporates provide demand for innovative cleantech solutions, and opportunities to test solutions in the real world through pilot projects. Accelerators are particularly important in the cleantech context, as they provide important business model development and commercialization support to founders who may not come from a business background.

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1   Startup Genome. 2019. "Can Culture Be Counted? Why Local Connectedness Matters for your Startup". Accessed November 1, 2022. https://startupgenome.com/articles/can-culture-be-counted-why-local-connectedness-matters-for-your-startup.

Figure A shows the interactions between startups and SMEs and the other key ecosystem actors.
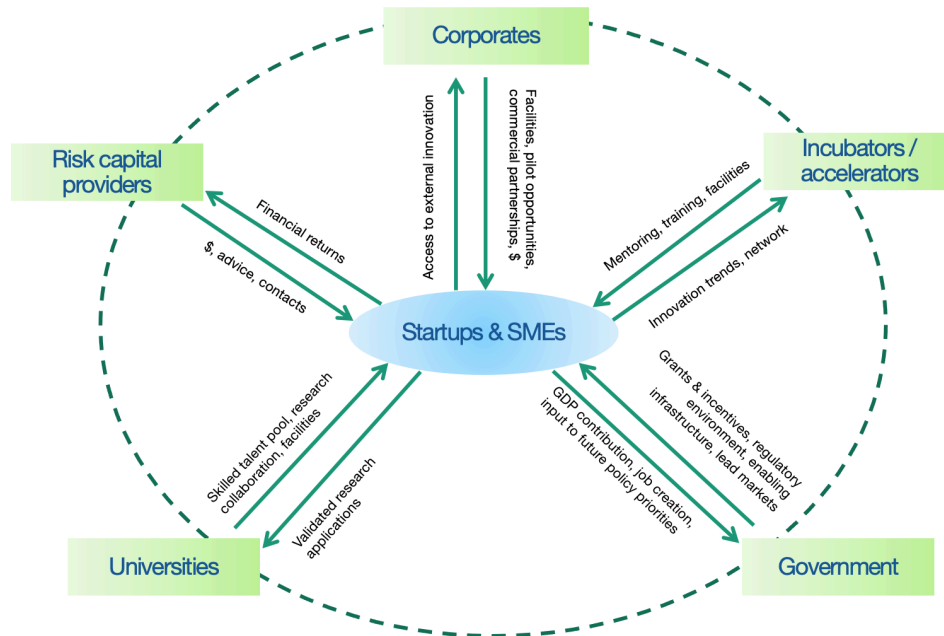
Figure A. Interactions between startups, SMEs and key CIEE actors

Denser ecosystems with high internal connectedness are more effective in producing and scaling cleantech innovation for systemic impact. Actors are the individual entities (organizations) fulfilling roles within the ecosystem. Actors wishing to participate in a local CIEE take on the responsibilities connected with their role, increasing the potential for synergies with other actors, and creating increased value across the ecosystem.

Stakeholder engagement initiatives and activities work to increase internal connectedness within CIEEs. Increased and better-quality interactions between ecosystem actors support internal connectedness. Highly connected ecosystems are characterized by a high level of trust between different organizations (actors). This is demonstrated by willingness to both share information and resources, and to coordinate actions with different actors.

Engagement initiatives are more effective when targeted towards the unique strengths and challenges of each ecosystem. Engagement is not a one size fits all process: successful engagement initiatives work backwards from the objectives, selecting appropriate participants and involving them in design of the overall engagement initiative as well as individual events. Many tools and methodologies are available; the skill is in selecting the right ones according to the circumstances. For this reason, this framework focuses on providing guidance for a successful process, rather than recommending particular tools and methodologies. Inclusivity is an integral part of the process: including women, youth and other under-represented groups at the design stage ensures that the process works for all parts of society.

Government and civic society are best placed to lead engagement initiatives in nascent ecosystems. Governments must play a larger role in developing young ecosystems, as they have the resources and influence necessary to bring other ecosystem actors together and promote the desired actions. Civic society organizations are often experienced stakeholder engagement practitioners and can conduct first-time initiatives in ecosystems which have not previously implemented systematic engagement activities. These organizations facilitate the transfer of knowledge and skills to public officials who will conduct such initiatives in subsequent iterations.

As the ecosystem matures, other actors can and should take on a more proactive role in engagement activities. Accelerators, hubs and other Entrepreneurial Support Organizations (ESOs) tend to be particularly active in creating connections and opportunities for networking and collaboration. Likewise, corporates, investors and even entrepreneurs themselves can all contribute to increased ecosystem connectedness. Ways of doing this include founder events, hackathons and startup competitions, demo days and conferences. Activities aimed at increasing connections between different ecosystems, such as international study or networking tours and international trade initiatives, can open access to new markets, attract foreign entrepreneurs and further improve the overall value of the ecosystem. Techniques for building external connections will be covered more extensively in subsequent frameworks.

I. Actors in a Cleantech Innovation and Entrepreneurship Ecosystem (CIEE)

CIEEs vs general innovation ecosystems

The same set of roles are found in every innovation and entrepreneurship ecosystem, no matter where it is located. Massachusetts Institute of Technology (MIT) identifies five key roles in an innovation ecosystem, plus other supporting roles which help to catalyze growth.[2] The five key roles are entrepreneur, government, research organizations, risk capital providers and corporations.

Other ecosystem actors consist of Entrepreneurial Support Organizations (ESOs) including accelerators; mentors; business associations; financial institutions; NGOs and citizens. Most of these play an active role in the ecosystem, with the exception of citizens, who are either affected by the actions of the ecosystem or are potential future participants.

CIEEs contain the same actors as generic innovation ecosystems, however some actors and activities take on greater importance. Additionally, the responsibilities between actors may be different. These differences are driven by key aspects which set CIEEs apart from innovation ecosystems in other sectors.

- Cleantech entrepreneurs are often driven by a strong environmental or social mission.

- Cleantech entrepreneurs are more likely to have applied science and research backgrounds and may need coaching in business skills.

- Cleantech solutions tend to have a hardware aspect and must go through an initial phase of proving the solution technically, before starting to commercialize. This means that lead times to market are longer than for pure play software solutions, and that early-stage investors must evaluate technology risk as well as commercial risk.

- Innovative cleantech solutions often compete with higher-polluting incumbent solutions which may not be penalized for polluting and may even be subsidized.

- Cleantech solutions may be dependent on infrastructure, such as gas or electricity transport networks, or may be impeded by existing industry structure, such as waste collection systems which prevent innovators from connecting directly with waste producers.

For example, because of the technical challenges and longer lead times to market that cleantech startups face, government may take on a greater role in de-risking cleantech ventures, or in providing or facilitating 'patient capital' for investments which don't fit traditional venture capital cycles. Therefore, government actors in a cleantech innovation ecosystem may be more likely to partner with risk capital providers, using mechanisms such as blended finance to ensure sufficient financing is available to startups with innovative cleantech solutions.

2	Murray, Fiona E. 2019. "MIT's Stakeholder Framework for Building & Accelerating Innovation Ecosystems." https://innovation.mit.edu/assets/MIT-Stakeholder-Framework_Innovation-Ecosystems.pdf

Categories and roles in a cleantech innovation and entrepreneurship ecosystem

In this section, we describe the key actors in CIEEs and their responsibilities towards the ecosystem. The main purpose of the ecosystem is to scale businesses with new solutions to obtain systemic climate impact. For this reason, we put startups and SMEs at the center of the ecosystem. However, finding ways to attract more actors of all types creates value across the ecosystem, multiplying its effectiveness.

Figure 1 shows the interactions between startups and SMEs and the other key ecosystem actors.
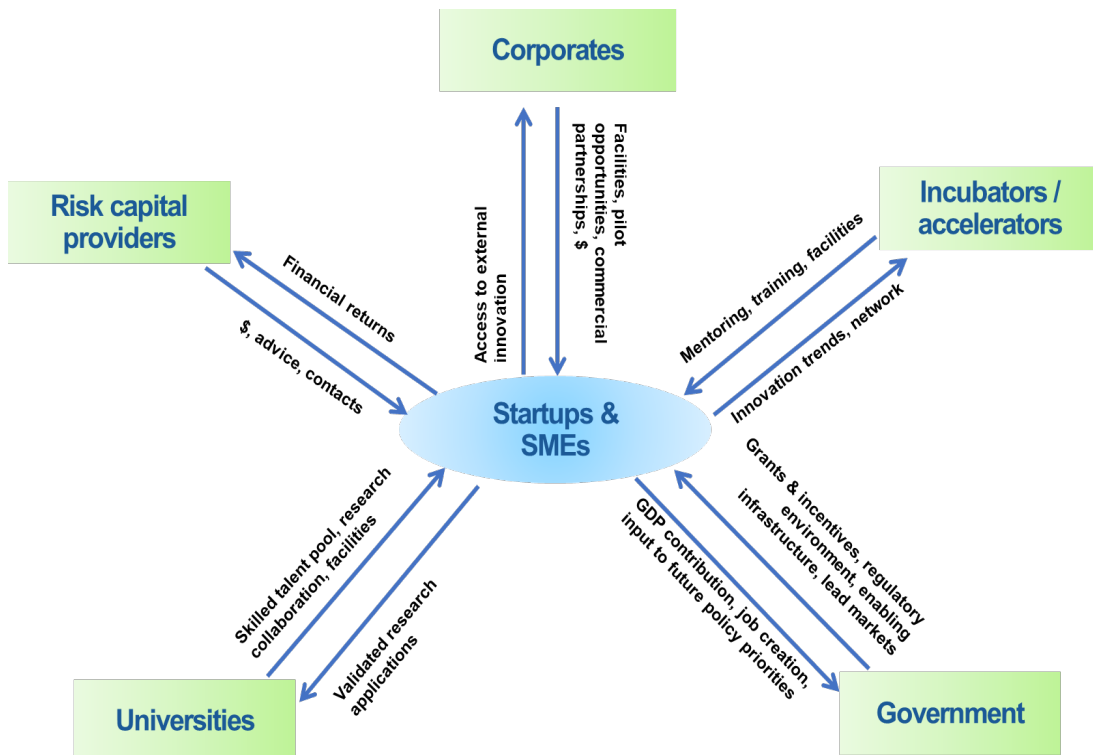
Figure 1. Interactions between startups, SMEs and key CIEE actors

a.   Startups/SMEs

Startups are young companies, characterized by innovation, speed, growth and scalability. Small to medium sized enterprises (SMEs) are independent (i.e., not a subsidiary or franchise) firms with fewer than 250 employees and turnover equal to or less than €50m.[3] Cleantech startups and SMEs develop novel or innovative solutions which enable GHG emissions reduction or more efficient use of resources.

Startups on a high growth trajectory are able to scale quickly for climate impact. On the other hand, since SMEs exist in large numbers, they are a key contributor to a resilient economy and provide jobs for a large proportion of the population. Therefore, both startups and SMEs are important members of a CIEE.

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3   European Commission. "SME Definition". Accessed November 3, 2022. https://single-market-economy.ec.europa.eu/smes/sme-definition_eu

- Develop innovative solutions to climate problems

- Speed the research, development, and commercialization of a new technology or product

- Create local jobs and demand

- Mentor or invest in other startups

- Contribute to sustainable GDP growth

b.   Government and public institutions

Government includes ministries or entities established or controlled by the government, such as innovation agencies and economic development agencies.

Governments can typically add great value in developing young CIEEs, both in supporting cleantech startups and SMEs and in developing and implementing targeted initiatives to increase ecosystem connectedness. As the ecosystem matures and other actors start to become more proactive, the government can take a less active role. However, governments also need to balance different objectives, such as preserving jobs in other sectors of the economy. Therefore, overall government influence on CIEEs can sometimes be a result of compromise between conflicting priorities.

Government responsibilities in the CIEE

- Define national research and innovation priorities according to forecasting of future innovation needed to meet climate targets.

- Provide targeted grants, subsidies and other incentives to support research and innovation in priority and/or underserved areas.

- Provide mechanisms to de-risk innovative cleantech solutions and 'crowd in' private financing.

- Coordinate value chains to ensure availability of critical inputs, either by developing domestic industries or importing innovation to fill gaps.

- Define and enforce policy framework, standards and regulations.

- Ensure sufficient infrastructure development.

- Create a level playing field, lead markets and stimulate demand for innovative solutions.

c.   Universities and Research organizations

These may be publicly or privately funded universities or research institutes. While both types of organization have a research and development mandate, universities also produce students trained in new techniques and technological developments. Universities and research organizations may also be involved in the early commercialization of research breakthroughs.

Universities and research organizations have a particularly important role in CIEEs, because many cleantech innovations are based on commercializing scientific research.

University/research organization responsibilities in the CIEE

- Research frontier technologies

- Produce a talent pool trained in relevant technologies or with the skills to market and sell complex technological products

- Support commercialization through incubators, spin off labs and accelerator engagement initiatives

- Project-based research and development (R&D) collaboration with startups, SMEs and corporates

- Provide venues to host networking or other ecosystem engagement events

d.   Risk Capital Providers

Providers of risk capital in cleantech ecosystems may be business angels, philanthropic investors, venture capital investors (VCs), growth investors, or other types of investment firms. VCs and follow-on growth investors typically invest in high-growth companies, but alternative investment firms may specialize in different risk-return profiles which allow them to invest in companies with slower growth expectations. In the cleantech sector, governments and multilateral banks can help 'crowd in' risk capital investments by providing first-loss capital.

The growing importance of ESG reporting and impact investing is attracting more risk capital providers to focus on cleantech investing; however, investments are still expected to clear minimum financial hurdles, as well as meeting sustainability criteria.

Risk capital provider responsibilities in the CIEE

- Provide capital to emerging, early-stage and scaling ventures.

- Provide high-value connections to other ecosystem actors.

- Offer business expertise in corporate development and go-to-market strategies, or hands-on support in legal, HR and other functions.

e.   Corporations

Larger companies, either national or multinational, either provide cleantech solutions themselves, or are potential adopters of cleantech solutions. They may buy products and services from, partner with, invest in, or acquire cleantech startups or SMEs.

Corporation responsibilities in the CIEE

- Provide real world test cases for innovative solutions by sharing access to data, labs and testing infrastructure, or production lines with start-ups or SMEs.

- Facilitate commercialization by piloting new technologies to demonstrate commercial feasibility.

- Supply funding and exit possibilities for investors by taking equity stakes or acquiring start-ups.

- Provide innovative start-ups with access to markets and potential customers.

- Create demand for cleantech solutions.

f.   Incubators & Accelerators

Incubators are ongoing support structures for young startups, providing office space, infrastructure, advisory services and training to help entrepreneurs turn ideas into viable businesses. This may be fee-based.

Accelerators offer fixed duration, cohort-based programs which support early-stage startups with mentoring and skills development, access to networks, facilities and sometimes financing. Entry to a program is usually competitive. An accelerator may be operated by any of the key ecosystem actors (most often universities or early-stage funders), or it may be an independent stand-alone entity.

Accelerators (and sometimes incubators) can provide sector-specific commercialization or innovation expertise, which is relevant to other ecosystem actors, not just startups and SMEs. In the cleantech sector, they play an especially important role, helping innovators who often come from scientific and research backgrounds to find markets for their technologies and learn the skills needed to scale their businesses.

Incubator/accelerator responsibilities in the CIEE

- Provide or coordinate training, mentoring and skills development for startup founding teams.

- Provide access to facilities (i.e., office space, lab equipment, technology).

- Offer grants or seed funding for startups.

- Facilitate connections to other ecosystem actors and potential follow-on funders

- Signal that a startup has achieved a certain quality.

- Coordinate with policymakers to raise awareness of market needs and impact of policy changes.

g.   Other ecosystem actors

Besides the key actors, cleantech innovation ecosystems contain other types of organization which help to catalyze growth.

Entrepreneurial Support Organizations (ESOs) include ecosystem builders, economic development agencies, and other organizations which facilitate ecosystem activity without playing a direct role. This may include knowledge transfer, raising awareness of market opportunities created by policy change and new technological developments, facilitating and/or funding connections between actors within and between ecosystems and promoting cleantech startups and SMEs in the wider ecosystem.

Industry associations usually operate on a membership basis, and group actors within an industry. They often carry out market research to raise awareness of industry developments and technology needs and may lobby for the interests of members. Associations are well equipped

to offer sector-specific advice and guidance on key cleantech issues, by developing tools and promoting best practices. They often engage with policymakers and other key stakeholders to advance public policy issues.[4]

Financial institutions provide financing as an alternative to or follow on from risk capital, in the form of loans or project financing. Financial institutions may also act as Limited Partners (LPs), providing capital to Venture Capital funds. Capital from financial institutions is essential to scale cleantech solutions, so involving these actors becomes increasingly important as the ecosystem matures.

Non-governmental organizations (NGOs) fill gaps which are not covered by the activities of government or for-profit businesses. They are especially important in the climate space, where commercial interests may not put a correct price on climate externalities, leading to insufficient emphasis on climate action. NGOs may also assist governments in developing and deploying climate responses, including by raising awareness among policy makers of cleantech innovation's potential to solve climate issues. As civil society is becoming more aware of environmental issues, NGOs often lead research, communication and grassroots initiatives involving and promoting climate action, including adoption of cleantech solutions.

Gender and youth associations are youth- or gender minority-led non-profit organizations dedicated to improving the services and systems that foster and promote positive growth of youth and gender minority activity, for example, in starting new cleantech ventures. They may also contribute to youth and gender representation in policy formulation and consultation.

Think tanks perform specialized research, policy critique and advocacy on a particular topic. They can inform and influence public policy through data-driven findings and creative solutions. Think tanks may offer independent alternatives to dominant policy thinking, which can ignore the most vulnerable and under-represented communities, especially around climate issues.

Service providers include lawyers, accountants, consultants, co-working spaces and other business infrastructure providers. These may offer discounted or subscription-based services to startups, allowing them to keep costs low and flexible.

Ecosystem roles and their relation to GCIP stakeholders

GCIP has also identified stakeholders who are relevant to the program. Appendix 1 addresses the correspondence between GCIP stakeholders and CIEE roles.

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4   UN Global Compact. "Business and Industry Associations." Accessed November 1, 2022. https://www.unglobalcompact.org/what-is-gc/our-work/industry-associations.

II. Designing and Implementing a Process for Engaging Ecosystem Actors

This section defines ways government, civic society and research organizations can take the lead in stakeholder engagement activities. These activities may be part of GCIP, or additional activities outside the program.

The purpose of stakeholder engagement

The purpose of conducting activities to engage ecosystem actors is to increase the internal connectedness of an ecosystem. This increases the combined value of the ecosystem actors in producing and scaling innovative cleantech solutions.

A problem observed in many innovation ecosystems – not only cleantech ones – is that different groups do not have regular contact with each other, or even a good understanding of who else is active in the ecosystem, what they are doing and what their goals are. The first purpose of stakeholder engagement is to allow different ecosystem actors the opportunity to get to know each other and understand the ways their respective roles bring value to the ecosystem. The second is to increase the level of awareness and trust between the ecosystem actors to facilitate interactions and collaborations which will increase the overall effectiveness of the ecosystem.

The process described below guides the design, implementation and evaluation of targeted interventions to fulfill these objectives. Interventions may be one-off events or longer-term processes consisting of a series of different events, meetings and other activities. As we will see, the form of intervention should be chosen during the design phase according to the objectives, stage and other characteristics of the ecosystem.

A four-step process for engaging ecosystem actors

A 'good' participatory approach has three aspects: 1) inclusive, engaging methods and tools, 2) a flexible process, and 3) a set of guiding principles.[5] While many approaches focus on methods and tools, all three are important.

The recommendations in this section are structured around a simple process for a stakeholder engagement initiative. This is because flexibility is important, so that each GCIP partner country can customize its approach according to national objectives and the specific characteristics of its own CIEE.

For each process step, we give key recommendations, best practices and success factors. We also identify possible challenges and provide suggestions for tackling them. We also give example tools and methods, although these are not exhaustive: a key success factor highlighted by experts is that tools and methods must be selected according to the situation. Therefore, it is valuable to work with someone with experience in stakeholder engagement and expertise to recommend the right tools. **Appendix 2** contains more resources, tools and methodologies.

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5   SEI. 2009. Stakeholder Engagement and the work of SEI: an empirical study. Accessed November 1, 2022. https://www.sei.org/publications/stakeholder-engagement-work-sei-empirical-study/

Figure 2 shows a four-step process for engaging ecosystem actors.

| Stakeholder mapping and prioritization | Creating buy in and shared vision | Implementing and maintaining engagement | Evaluation and defining success |

Figure 2. A four-step process for engaging ecosystem actors

1.   Stakeholder mapping and prioritization
The first step in the process is to map the main actors in the ecosystem and which role each one fulfills. Once we understand who is active in the ecosystem, we can decide which roles to engage, and within a role, who are the most relevant actors to involve in an engagement initiative.

2.   Creating buy in and shared vision
After deciding which specific ecosystem actors to engage, the next step is getting them on board, aligning objectives and making sure each actor agrees with the process and intended outcomes.

2.   Implementation and maintaining engagement
The implementation phase starts with designing the engagement initiative, defining the types of intervention, and planning and executing them. As initiatives may last for multiple years, keeping actors engaged over the full duration is also important.

2.   Evaluation and defining success
To evaluate whether an intervention has worked, the first step is to define what a successful outcome looks like. The next step is to determine how to measure the actual outcome against the desired outcome. This step also includes evaluating remaining gaps, which can be used to help define objectives for the next round of interventions.

Appendix 3 includes in-depth findings from interviews conducted with international experts and thought leaders with a focus on the areas of cleantech, general startup innovation, and development.

Stakeholder mapping and prioritization
Mapping the ecosystem

An engagement process begins with mapping and categorizing the various actors who are active in the ecosystem. However, it may also be useful to repeat the mapping and prioritization procedure periodically as the program proceeds, especially if objectives evolve.

The main groups which are involved in a cleantech innovation and entrepreneurship ecosystem are described in the previous section. The mapping process aims to systematically catalogue all organizations or groups which are linked to cleantech innovation, mapping each organization to the relevant role that it plays in the ecosystem.

Case study #1

Climate Investment Fund's approach to stakeholder mapping
The World Bank suggests a holistic approach to stakeholder mapping, including the followin steps:

- Mapping and involving stakeholders in design of investment plans
- Mapping funding support requirements
- Mapping complimentary investment programs
- Recommending a mapping tool to enable development partners to map categories of stakeholders to work with

A mature ecosystem is likely to contain multiple actors in each stakeholder group; emerging or developing ecosystems may be less consistent. For example, a younger ecosystem may have many startups but lack a diverse set of investors. Or it may have one or more universities with a strong research output, but few startups because the research has not yet been commercialized.

Therefore, a mapping exercise may also identify gaps in the stakeholder landscape. The GCIP Cluster Development Framework, to be developed also as part of the GCIP Pillar 2 activities, will make recommendations for fostering a diverse set of ecosystem participants.

Prioritizing ecosystem actors

To maximize effectiveness, each engagement initiative should evaluate the most relevant ecosystem actors to involve. This will depend on the initiative's objectives.

The following table summarizes stakeholder mapping and prioritization best practice recommendations obtained from interviews carried out with leading global stakeholder engagement practitioners.

Best Practices and success factors: Stakeholder mapping and prioritization

Work from national objectives	Sweden identified an upcoming skills gap in cleantech-related professions. This led them to involve education institutions in workshops on decarbonizing industry.
Involve a wide group of actors in process design	Local and indigenous communities can provide expert input to process design as they are aware of conditions on the ground or hold important expertise about natural ecosystems. Community-based actors can also influence design or an initiative to ensure relevance for underserved communities.
Start small, expand later	It can be useful to start by recruiting a core steering committee of actors who can commit to driving the process for the duration of the engagement initiative. This core group can be expanded as the initiative progresses, building on initial successes to gain buy in with additional prospective participants.
Thematic working groups	If a larger stakeholder group becomes unwieldy, it can be more effective to divide into smaller working groups, for example around thematic interests.
Topic-based participation	Participants for individual events such as workshops should be selected according to the topic in question. For example, a discussion on solar energy might involve technical experts and installers.

Creating buy in and a shared vision

After determining which ecosystem actors are relevant, the next step is to convince them to join the engagement initiative. This can be easier in the cleantech sector, where many actors already have a strong common goal of striving for climate impact or solving an environmental problem.

Depending on their role in the ecosystem, different actors have different motivations, and gaining buy-in is often a case of explaining the benefits to each in terms of progress towards achieving their particular goals. Maintaining an ongoing dialogue with key ecosystem actors in order to understand their goals, needs and motivation helps to understand why they would join an initiative.

Case Study #2. GEN's approach to creating buy in

The Global Entrepreneurs Network (GEN) works to enhance local innovation ecosystems globally, by providing resources to ecosystem support organizations (ESOs) and organizing events which foster connections between different ecosystems at local, national and international level. GEN has produced a series of handbooks called audience guides, which explain the benefits of participation to different potential partner organizations. Audience groups include colleges and universities, policymakers, investors, rural entrepreneurs, makers and women entrepreneurs: GEN has a specific handbook for each of these groups.

The following table summarizes best practice for creating buying and shared vision obtained from interviews carried out with leading global stakeholder engagement practitioners.

Best Practices and success factors: Creating buy in and a shared vision

Explain benefits in a way which motivates each stakeholder	Maintaining an ongoing dialogue with ecosystem actors helps to understand their areas of interest and the challenges they are facing. This helps to articulate the benefits of the engagement initiative in a way that is relevant to them.
Set objectives at a level which speaks to all stakeholders	All actors could agree on the need to reduce emissions, even if they disagree on specific ways to achieve the reductions.
Have a strong thesis about what the initiative will achieve	Participants need to be convinced that if they give their time and resources, they will be used wisely.
Create a mission statement or manifesto	Synthesizing objectives can articulate a mission which unites the core group and can be referred to when communicating about the initiative
Flagship research to create a shared vision of change	Accessible research publications can create an imperative for change and identify priority cleantech sectors for a country or region

Implementing and maintaining engagement

Implementation

The implementation phase consists of running the interventions which have been specified during the design phase. These can include public or mass communications such as broadcasts, public consultations or citizen assemblies and hackathons, or closed-door roundtables or workshops, one on one meetings or conversations, and more informal social events or activities.

The objective here is to assemble different stakeholders in the same space so that they can understand each other's perspectives and work towards finding common ground.

Case Study #3. Cleantech for Europe's approach to maintaining engagement

Cleantech for Europe is an initiative powered by Cleantech Group and supported by Breakthrough Energy, which aims to raise the voice of cleantech innovation in the EU public debate. The initiative brings together 20 EU cleantech Venture Capital (VC) firms, united behind a common vision of bringing the cleantech community and policy makers closer together to scale EU cleantech. The VC group meets every 6-8 weeks to discuss policy topics and obstacles to scaling cleantech in the EU. In return for their time, the VC firms gain an understanding of upcoming policy topics, and the opportunity to raise issues their portfolio companies – cleantech startups – are facing, and to bring these issues to the attention of EU policy makers.

Maintaining engagement

Many engagement initiatives get off to a good start but find that interest and engagement levels wane over time. Participants in the engagement initiative will stay engaged if they see it as a valuable use of their time and resources, so this section focuses on how to maintain and communicate the value of an intervention as it proceeds.

It is useful to periodically reassess the value that the engagement initiative is providing. Is it achieving the objectives? Are the stakeholders still getting value from it? If stakeholders start to disengage, we need to act quickly to understand what is not working and recover the value. It could be a sign that the engagement initiative as a whole is not achieving the objectives (this process is linked to the evaluation stage).

Follow-up communication after an event is a good way to keep participants engaged. Ways to do this include surveying participants and circulating notes summarizing the discussion and next steps. Surveying participants fulfills a dual purpose of maintaining interest while providing input to the evaluation stage of the process.

Participants also appreciate being informed of any results which arise from the process, such as policy discussions or follow-up meetings. Celebrating successes, however small, creates enthusiasm for further progress and can help attract more stakeholders to the initiative.

Case Study #4. SEI's approach to maintaining engagement

The Stockholm Environment Institute (SEI) conducts multi-stakeholder programs focused on industrial decarbonization. They engage local media as a way of maintaining interest: participants are more likely to attend subsequent workshops if the first event gets media attention. A recent workshop in India was mentioned by over 20 local news outlets, which increased interest among participants.

The following table summarizes implementation and maintaining engagement best practice recommendations obtained from interviews carried out with leading global stakeholder engagement practitioners.

Best Practices and success factors: Implementation and maintaining engagement

Implementation Phase	
Policymakers and civic organizations are well-placed to lead engagement initiatives	It can be beneficial to have the first round led by an external organization so that policymakers can learn best practices
Assess signals from stakeholders during implementation phase	If stakeholders start to disengage, move quickly to find out why and adjust the process to make it more valuable for them
Recruit champions to drive engagement	Seek out influential actors in different sectors who have a high personal interest and responsibility, to drive engagement. In small ecosystems, identify key players who are well connected and keep in touch with them
Local organization team	Workshops work best when organized by local people for local people, bringing in international expertise where needed
Use data to make a case for change	Relevant, well-researched data and solutions, presented in an accessible way, can give policymakers the tools they need to propose different solutions
Use success stories to inspire change	Showcasing startups who can solve the problem being discussed helps to show what is possible and inspire others

Follow up communication after events	Following up after an event by circulating a summary of the discussion, or surveying participants, helps to keep them engaged in the process. Communicating successes and other follow-up activities is also useful
Present results in public	Presenting the results of the workshop in public and helping them reach as wide an audience as possible helps to hold participants accountable if they have committed to making changes
Cultivate media relationships	If events are covered by local and national press outlets, this creates an expectation around the initiative and participants are more likely to join subsequent events

Planning group discussion events (such as workshops)	
Conduct individual meetings during the preparation phase	Individual meetings can help in preparation to update key stakeholders on the issues and understand their perspectives
Arrange seating so that different types of stakeholders are in contact with each other	During the workshop, arrange seating so that different types of stakeholders are in contact with each other: this will force them to work together and exchange viewpoints to imagine an alternative reality
Choose the right moderator	A strong moderator is very important: this person should be neutral, respected locally, on good terms with everybody and prepared to step in if the discussion gets heated
Conduct workshops in local language	Workshops must take place in the local language so that participants feel comfortable making contributions: if there is an international moderator, this person should use an interpreter
Include informal events	Including unstructured socializing activities in the agenda helps participants become more comfortable with each other and with sharing their opinions
Make funding available for proposed initiatives	Proposed projects need to be financially sustainable, and potential funding helps engagement. This is especially relevant in lower income countries or emerging ecosystems where funds are not abundant

Troubleshooting group discussions

There are conflicting views in the room:
Start with alternative scenarios, for example those which are less controversial. For example, a workshop aimed at tackling the issue of free allocation phase out could start with a discussion around Net Zero emissions targets. This gives participants an opportunity to engage with the process by contributing their perspectives and get comfortable debating with other participants. This process continues during lunch or other social activity. At this point more difficult topics can be approached. Through joint discussions and by sharing different perspectives, stakeholders can develop a shared understanding of what needs to happen.

The discussion reaches an impasse:
The facilitator must be prepared to de-risk potential conflict areas and stop the conversation and move on in case of insurmountable conflict. It's usually better not to continue a dialogue that is not working.

Evaluation and defining success

The final step in the process is evaluating the initiative's results, what has been achieved and what still needs to be done. Ideally progress checks will take place during the engagement initiative, in order to refocus efforts if needed. Final results can feed back into the beginning of the process for the next intervention. It can be helpful to engage an independent moderator to evaluate success, especially if the initiative has to report results to external donors.

Success metrics should be identified during the design phase and will be different for each initiative. Some definitions of success include:

- Getting key decision makers or those able to influence present in the workshop
- Seeing workshop recommendations become policy
- Developing a credible source of information that policymakers can refer to
- Commitments by workshop participants to align with objectives
- Gaining investment commitments from investors or corporates
- Obtaining a change in mindset
- Breaking down barriers between ecosystem actors to facilitate future collaboration

The next step is collecting feedback. This can be done by a written survey, a group lessons learned workshop, or individual follow up calls or meetings. These kinds of follow-up activities fulfill a dual purpose of keeping participants engaged, while incorporating their experience to improve the engagement initiative.

Case Study #5. SEI's approach to evaluation.

- **External evaluations:** SEI invites external critical observers to make recommendations on how SEI can strengthen delivery and impact over the longer term.
- **The SEI Science Advisory Council:** The Council regularly examines achievements and progress in key research areas.
- **Partner feedback:** SEI implements annual surveys of key partners, inviting them to evaluate their institutional engagement with SEI.
- **Feedback during projects:** SEI invites stakeholders to give feedback on an ongoing basis during project implementation.
- **End-of-project evaluation:** All programs, initiatives and large projects are required to carry out evaluations at their close.

The following table summarizes evaluation and defining success best practice recommendations obtained from interviews carried out with leading global stakeholder engagement practitioners.

Best Practices and success factors: Evaluation and defining success

Maintain flexibility around outcomes	An intervention might determine that the current structure is working well, and that policy change is not needed
Feed back into the beginning of the process	Lessons learned provide useful input to subsequent interventions, by identifying what worked, as well as what still needs to be done
Include evaluation and feedback loops into every process step	Keeping communication channels open throughout the process is a key method of creating and maintaining engagement. This is also an opportunity to collect feedback and implement continuous improvements as the engagement initiative proceeds – no need to wait until the end

Potential challenges and suggestions for tackling them

- **Reaching non-elite groups**

In many ecosystems, the majority of startup founders are college educated, whereas there is a need to foster entrepreneurship among underrepresented groups. These are best reached by local organizations that already have networks within the community. It is essential to involve representatives at the process design stage, both to gain buy-in and awareness and to design an engagement initiative which works for their reality.

- **Resistance to participatory engagement methods**

Initiatives that alter the power structure may face resistance from stakeholder groups that face loss of power. For example, citizen engagement and participatory decision making can take away some decision-making authority from other ecosystem roles. The best way to solve this is for high level leaders to drive and champion change.

- **Digital literacy and connectivity**

During the COVID pandemic, many activities could no longer take place in person. This meant that more ecosystem engagement events happened online. For small entrepreneurs, it meant they could no longer sell their wares in physical locations. Moving to online sales and communications channels is challenging for those who do not have a good internet connection, and those who have no experience in using online tools. Training can help SMEs move their business online – for example GEN produced a course entitled "Build your website in 100 days". Connectivity issues can only be solved by building the necessary infrastructure.

- **Coherence between different workstreams, events and initiatives**

Aligning behind a common set of objectives or a mission statement helps to maintain coherence as initiatives grow and more ecosystem actors become involved. It can be helpful to reassess the objectives or mission statement periodically to make sure it is still relevant for all the stakeholders.

- **Evaluation phase may be constrained by donors**

Donor-funded projects may have scope limits that prevent a full-scale evaluation phase. One way to tackle this is to build evaluation and feedback loops into every step of the process, for example by combining data collection with other activities and concentrating on continuous, incremental improvements. In this way the evaluation can be conducted with minimal additional cost to the project.

Considerations for building an inclusive process

Stakeholder mapping & prioritization	Choose partners who can help gain access to underrepresented groups and communities Ensure complementarity of different partners Consider social inclusion from the beginning of the engagement initiative
Creating buy in & shared vision	Integrate inclusivity goals into highest level objectives. It can also help to have a dedicated team to focus on inclusivity considerations Include under-represented groups from the start of the process, essential to get their input into process design Highlight success stories from communities outside the main innovation centers, make these part of the picture
Implementation & maintaining engagement	Think about format and timing of events; Some people may have difficulty attending events outside work hours, or lack connectivity for online meetings Where there are cultural issues or power imbalances, conduct separate events to increase participation from under-represented groups Use graphic recording tools in meetings that can help those who process information in different ways, and be helpful in locations with multiple languages Ensure that gender analysis shapes project design Women, youth and other under-represented groups should be treated separately as they all have different needs and require different solutions
Evaluation & defining success	Conduct independent evaluations from expert groups (e.g., youth committee) to get understanding through a different lens

III. How Other Actors Can Contribute to Ecosystem Connectedness

While governments often take the lead in developing young innovation ecosystems, as the ecosystem matures different actors can and should start to play more active roles, organizing events and cultivating relationships with other ecosystem actors.

Section 2 concentrated on ways government, civic society and research organizations can take the lead in stakeholder engagement activities. In this section we give some examples of where other cleantech innovation ecosystem actors have taken the lead, proactively engaging other participants in the ecosystem.

Appendix 4 lists different types of interaction that can contribute to ecosystem connectedness.

Networking events

A meeting point for the cleantech innovation ecosystem – Cleantech Forum

The Cleantech Forum is an annual regional event in Asia, Europe, and North America featuring start-ups, scale-ups, investors, public entities and multinationals from across the world. Each Cleantech Forum is organized around a theme, this year how to transform commitments into actions for the global sprint to net zero. Through a combination of panel discussions, innovator showcases and networking opportunities, each Forum connects the latest generation of start-ups with investors and corporates looking for new partners. Cleantech Forum Asia, held in October 2022, featured Asia's sustainable innovation ecosystem of leading companies at the forefront of innovation sharing learnings and investment trends in the region. Attendees commented that the true value of this event is Cleantech Group coming to Singapore and convening so many people who are intentional about sustainability. Bringing this community together is what will ultimately achieve impact.

Investor ecosystem days – Rockstart Venture Capital investor

Rockstart's investor days bring together investors, corporates and partners for an in-person meeting. This has built a reputation as a high-quality event with interesting content and an enjoyable dinner, so relevant participants are excited to attend. As well as showcasing startups, the event provides an opportunity for ecosystem actors to discover shared interest areas, synergies and opportunities for collaboration. Later stage investors also get involved in selecting promising startups for seed funding. This triggers interest and they are likely to follow the company as it grows and potentially provide follow-on funding. For the investors, it is a chance to gain advance visibility of upcoming technologies and innovations.

Events as a catalyst for new connections - GEN Global Entrepreneurship Week

GEN operates programs in 200 different countries. Their events aim to make local ecosystems hospitable to entrepreneurs of all backgrounds, as well as connecting ecosystems regionally and internationally. Global Entrepreneurship Week is a global event held once a year. During the week GEN's partner organizations host entrepreneurship-related events along the themes of ecosystems, policy, education and inclusion. Many different collaborations are born out of connections made during the week.

Competitions, Hackathons & Challenges

Smart Cities Hackathon - Plug and Play Morocco

A successful Hackathon needs a problem, potential solutions, a prize and a call to action. In partnership with Moroccan corporate OCP Group, Plug and Play Tech Center organizes Smart Cities Hackathons where they invite students and entrepreneurs from multiple backgrounds to join a two/three-day intensive idea generation competition. At the end of the event, teams present the solution they have developed during the hackathon.

Broadcast communications

Highlighting innovative cleantech solutions via podcast – Cleantech Estonia startup accelerator

Cleantech Estonia broadcasts an Estonian-language podcast on national radio. The hour-long podcast runs once a month and is divided into two parts. The first covers a current policy topic which concerns the cleantech sector, with participation from public sector officials and sometimes Members of the European Parliament (MEPs). The second part of the podcast showcases a specific solution from a cleantech startup operating in a sector affected by the policy topic. The podcast runs on a daily business station and reaches an audience of corporate CEOs and board members, who are target groups for adopting cleantech solutions.

Engaging young people through pop culture – SustyVibes Community Organization

SustyVibes uses pop culture to raise awareness of climate issues among young people, who make up 60% of Nigeria's population. Events such as movie screenings and sustainability-themed parties bring young people together to discuss sustainability issues and solutions in a relaxed environment. SustyVibes activities are youth-led, and this approach enables young people to come up with ideas for new businesses and environmental activities which they implement themselves.

Targeted Programs

Producing a diverse talent pipeline – Leeds Business School, University of Colorado Boulder

The "End the Gap" initiative was set up to inspire and educate underrepresented students to prepare for top leadership positions in startups and corporations. This starts with recruitment for MBA programs, by conducting outreach to young and early career women to show them the opportunities business education can provide. During the MBA program, the women receive extra-curricular development opportunities such as workshops on countering unconscious bias. There are similar programs in place for other underrepresented groups. Local startup participants contribute to the programs by mentoring diverse students, providing real-life case studies for classroom discussions, and hiring students as interns.

Increasing adoption of innovative solutions in the energy sector – Cleantech San Diego

Utilities play an essential role in the energy transition but may be wary of deploying innovative solutions or lack the internal capacity to develop them. Cleantech San Diego uses its industry connections and deep knowledge of the energy sector to forge connections between corporates (utilities) and innovative energy startups, to trial innovative solutions.

Appendix 1. UNIDO stakeholder groups and how they align

UNIDO's GCIP has identified key stakeholder groups for engagement and communication. The table below maps the correspondence between identified GCIP stakeholder groups and the CIEE roles discussed in this framework.

Cleantech ecosystem roles	UNIDO GCIP Stakeholder groups
Key CIEE roles	GCIP accelerator stakeholders, Potential investors and customers for GCIP alumni/private sector partners, Project implementation and execution partners Academia
Other ecosystem roles	Current and future partners active in the CIEE space, including UN agencies, General public Gender focal points in UNIDO and national project teams, gender experts and associations promoting gender equality and the empowerment of women (GEEW), Youth entrepreneurship programs and associations, UNIDO staff
Stakeholders specific to GCIP	Donors, partner countries, Global Advisory Board

Appendix 2. Resources for designing and conducting stakeholder engagement activities

Organization	Resource	Used for
CIF/World Bank	How to Implement Stakeholder Mapping into the Programmatic Approach of the Climate Investment Funds	Stakeholder Mapping
Global Entrepreneurs Network	Audience Guides	Creating buy in
Global Entrepreneurs Network	Activity Ideas Bank	Implementation: ecosystem events
SEI	Stakeholder engagement and the work of SEI: An empirical study	Implementation: participatory approach
UNIDO	UNIDO Guide to Gender Analysis and Gender Mainstreaming the Project Cycle	Integrating gender considerations into the process
UN Women	Handbook: How to manage gender-responsive evaluation	Evaluation
Danish Board of Technology	TAMI – Technology Assessment – Methods and Impact	Integration of stakeholder engagement into a technology selection process

Appendix 3.
Learnings from expert interviews

When compiling this framework, we interviewed international experts and thought leaders in stakeholder engagement practices with a focus on the areas of cleantech, general startup innovation, and development. The interview learnings are separated into two groups.

The first group are practitioners. These are organizations who lead stakeholder engagement initiatives and who have practical learnings on how to conduct a stakeholder engagement process from start to finish.

The second group are ecosystem actors. These organizations provided general observations about cleantech and innovation ecosystems, and ideas for how ecosystem actors can contribute to greater ecosystem connectedness.

a.   Practitioners

Ecosystem Role: Research Organization
Name and title of interviewee: Gökçe Mete, Head of secretariat, leadership group for industry transition **Organization:** Stockholm Environment Institute **Location:** Stockholm, Sweden
Key Learnings from interview LEARNING 1: Working backwards from national-level objectives can help identify new stakeholder groups to be engaged (e.g., identifying skills gaps -> involve education institutions). LEARNING 2: Where stakeholders have divergent views, approach is to start with a less controversial topic to gain confidence, then approach more difficult topics once participants become comfortable sharing their views. Social or physical activities are important to break the ice. LEARNING 3: Maintaining follow-up communication and local media engagement both help to maintain engagement along the course of a project.
About the organization Stockholm Environment Institute is an international non-profit research and policy organization that tackles environment and development challenges. Stakeholder involvement is an integral part of SEI's efforts to build capacity, strengthen institutions and equip partners for long-term change. The leadership group for industry transition (Leadit) secretariat gathers countries and companies that are committed to reaching net zero carbon emissions from industry by 2050.

This interview considers learnings from stakeholder engagement activities in Sweden, Norway the UK and India.

SEI's initiatives primarily target policy makers, corporates, civil society and increasingly education institutions.

Best Practices for stakeholder engagement

Stakeholder mapping and prioritization:

In Sweden this was done according to industry roadmaps, working backwards from 2050 and 2030 targets, and working on what needs to happen when, and who needs to do what. For example, calculations show that Sweden does not have the right projected skills mix to fulfil 2030 plans. Therefore, SEI increasingly seeks to involve education institutions in stakeholder engagement initiatives.

Important to include policy makers from different departments, these may have little day to day contact with each other.

Social science stakeholders were included in these exercises because the just transition concept is new to engineers.

Creating buy in and shared vision:

Identify champions (influential actors in different sectors) and meet informally ahead of events, workshops etc., they can take ownership of the issues. Build trust before the workshop.

Implementation & maintaining engagement:

Workshops work best when organized by local people for local people, bringing in international expertise where needed.

Partners chosen according to independence, local reputation, industry connections. Partners who have already worked with SEI are preferred. If one partner does not cover all the bases, multiple local partners may be chosen. New partners may be recommended through UN, embassies, ministries.

Local media engagement is helpful to maintain engagement. One workshop run by SEI was covered in 20-30 local news outlets and this boosted return rates for the next event. Follow up is also important, this may be done via questionnaires or regular updates. Creating shared ownership by keeping stakeholders in the loop is important.

Evaluation & defining success:

If workshop recommendations are turned into policy, that is a success. Or if the ministry representative running the process is in the room (second in command more important than head of department). Or if the outcome is a credible source of information that politicians can refer to.

SEI's evaluation is structured around five main activities:

- External evaluations: SEI invites external critical observers to make recommendations on how SEI can strengthen delivery and impact over the longer term.

- The SEI Science Advisory Council: The Council regularly examines achievements and progress in key research areas.

- Partner feedback: SEI implements annual surveys of key partners, inviting them to evaluate their institutional engagement with SEI.

- Feedback during projects: SEI invites stakeholders to give feedback on an ongoing basis during project implementation.

- End-of-project evaluation: All programs, initiatives and large projects are required to carry out evaluations at their close.

Success Factors

- Moderated sessions: choice of moderator is important – SEI aims for locally known moderators who are neutral and charming.

- Local language: important that sessions are held in local language so that everybody feels comfortable in participating. This means that international partners are less directly involved and rely on translation through local partners.

- Graphic recording: this is helpful as it gives workshop participants something to focus on, helps cater for different ways of absorbing information, and can facilitate workshops in countries where there is more than one local language.

- Bringing in outside expertise: real life innovation examples and success stories, for example bringing innovative startups to talk to policy makers and industry, can help break resistance to change. They show it can be done and can answer objections.

Challenges

- Oil and gas: bringing in the social science perspective helped to understand the just transition narrative.
- How to deal with different opinions / perspectives:
  - Start with alternative scenarios, for example those which are less controversial. E.g., net zero emissions vs phase out of free allocations. Participants talk about what they know, start to engage with the process, get comfortable debating with other participants. Talk over lunch.
  - Approach more difficult topics once everyone has made friends. In this way stakeholders get to a joint understanding of what needs to happen.
- Social activities help to break down barriers – this could be lunch, yoga, other physical activities
- Seating is important – mix participants rather than separating according to stakeholder type

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Ecosystem Role: Research Organization

Name and title of interviewee: Lars Kluver, Director
Organization: Danish Board of Technology
Location: Denmark

Key Learnings from interview
LEARNING 1: Policy makers and citizen organizations are best placed to lead stakeholder engagement activities. It can be beneficial to have the first round led by an external organization so that policy makers can learn best practices. Training for public officials in regions and municipalities is also beneficial.
LEARNING 2: Initiatives that alter the power structure will often face resistance from those groups that face loss of power. This must be addressed to ensure success.

LEARNING 3: There are many tools and methodologies available, choosing the right one for the specific situation and objectives is important and for this you need a practitioner who has experience in using different tools in different situations. Beware of modern methodologies which are just adaptations of existing ones.

About the organization

The Danish Board of Technology is a not-for-profit corporate foundation and an international expert in technology assessment and foresight methodology, with special emphasis on developing collaborations between citizens, experts, stakeholders, and decision-makers and developing citizen engagement in the context of policy development. Thematic areas covered are democracy, technology and climate.

DBT has pioneered a cross-disciplinary approach to stakeholder engagement, considering stakeholders as experts and not just interested parties. The DBT developed the World Wide Views (WWViews) methodology for global citizen engagement and has coordinated three implementations of it to facilitate citizens' participation in UN decision-making on global warming, biodiversity, and climate and energy.

Best practices for stakeholder engagement

*Mapping and prioritization***:**

Participatory approach sees stakeholders as experts not just interested parties, develop ways of cocreating to respect that

Creating buy in and shared vision:

Ecosystem actors should be considered in design process. Trust that people want to contribute, give them the responsibility and they will normally respond to that.

Implementation & maintaining engagement:

Informal interactions are also useful.

Online tools have variable success – only Zoom and Webex have enough functionality to successfully work with breakout rooms, which are important.

Privacy-compliant conference systems are difficult to work with, especially if participants are located outside the country.

In Scandinavia, small groups of stakeholders can collaborate online without facilitation, but this varies by region.

Follow up processes are influenced by power structures – it can be useful to decide on follow up activities before planning the initial activity

Evaluation:

Success can also be determining that we are on the right course - cannot measure success purely in terms of implementing new legislation; Building strong network between actors and breaking down barriers is also success.

Success Factors

- Policy makers and citizen organizations are best placed to lead stakeholder engagement activities. It can be beneficial to have the first round led by an external organization so that policy makers can learn best practices. Training for public officials in regions and municipalities is also beneficial.

- Example projects, showcasing success stories, courses and knowledge centers are important for capacity building, but these need investment. Capacity needs to be transferred; it does not come by itself.

- There are many tools and methodologies available, choosing the right one for the specific situation and objectives is important and for this you need a practitioner who has experience in using different tools in different situations. Beware of modern methodologies which are just adaptations of existing ones.

Challenges

Initiatives that alter the power structure will often face resistance from stakeholder groups that face loss of power. In the case of citizen engagement and participatory decision making, this group is mid-level policy makers: giving citizens influence over policy development takes away some of their decision-making authority. The only way to solve this is for high level leaders to drive the change. Affected officials receive training, but those

who refuse to play the game should be removed or they will continue to obstruct progress. Strong leadership is key.

If the executive level in an organization keeps too much hold over the process, the political level doesn't get what they need.

Ecosystem Role: NGO/Foundation

Name and title of interviewee: Karin Jancykova, Programme Manager for Climate Policy, Energy and Global Environmental Governance

Organization: Konrad Adenauer Stiftung

Location: Brussels, previously working as ecosystem manager for Central and Eastern Europe, EIT Climate-KIC

Key Learnings from interview

LEARNING 1: To foster collaboration we need to transmit to stakeholders that it is not about competing but complementing each other (by working together, everybody gains)

LEARNING 2: Well-prepared data, presented in an accessible way, is needed to counter the influence of big industry who already have a lobbying channel and to build trust with citizens. Results, solutions and financial returns can convince when clearly articulated.

LEARNING 3: Creating an open, honest and friendly environment is key to motivating participants. Sometimes closed-door sessions are needed for a more honest dialogue

About the organization

The Konrad Adenauer Foundation is a German political party foundation with offices in around 120 countries; in their host countries they advocate for democracy, rule of law, freedom and a social market economy and promote exchange between Germany and the countries of assignment.

In the Czech Republic, beside its main role to strengthen Czech – German partnerships and collaboration, KAS acts as an ecosystem builder, focusing on how to connect top down with bottom up, grass roots approaches. Ability to engage political actors is a key strength. In Central and Eastern Europe, few political strategy consultations engage NGOs or citizens: KAS is one of the few organizations working to foster engagement between these stakeholder groups.

Best practices for stakeholder engagement

Stakeholder mapping and prioritization:

Need deep understanding of the local ecosystem – local partners are important for this

Ecosystem stakeholders who are willing to engage in dialogue and make connections outside their bubble can have more impact

Choose stakeholders according to topic – for example, solar panels: stakeholders include landowners, politicians, developers, technicians, scientists

Creating buy in and shared vision:

Spend time with the people in the room to get their perspective; show benefits of collaborative approach

Listen first, understand what is best for the country

Implementation and maintaining engagement:

Event preparation is super important: choice of (neutral) meeting space, choice of guests, topic, agenda

Find out who is the key player and stay in touch with that person; motivated, strong stakeholders identified from workshops can be used to bring others into the process – they should be brought into future touchpoints

Events must be held in the local language (especially important for deep dive discussions) – if you are bringing external people to transfer best practice, they must use an interpreter – participants must feel safe, and feel that the intervention has been planned for them and not somebody else's benefit

Important to have a strong facilitator

Funding component is vital, especially for lower income countries

Sometimes need closed doors sessions for a more honest dialogue

Creating open, honest and friendly environment is key to motivating participants.

Evaluation & defining success:

Alignment, understanding between stakeholders that it's not about competition, but about complementing each other. Definition of success is obtaining a change in mindsets

Success Factors

For energy transition, ministry level involvement is essential – need to involve the person responsible for implementing strategy (e.g., deputy minister)

For scaling solutions, useful to involve big industry, or a private company interested in going through the transition.

Well-prepared data, presented in an accessible way, is needed to counter the influence of big industry who already have a lobbying channel and to build trust with citizens. Results, solutions and financial returns can convince when clearly articulated.

Policy makers often don't have bandwidth to dive into the details so presenting relevant, well researched data and solutions can give them the tools they need to propose different solutions.

Innovation success stories motivate stakeholders to focus on the innovation and what is possible.

Challenges

At a recent hybrid English-language event in Brussels involving Czech stakeholders, 50% of participants did not confirm their participation because of the language barrier – important to hold events in the local language, use interpreters which helps to open-up the event to other local players, not to still the same (English speaking) participants, the same ´bubble´.

Facilitators must be prepared to de-risk potential conflict areas and stop the conversation and move on in case of insurmountable conflict. It's usually better not to continue a dialogue that is not working.

Ecosystem Role: Government and public institutions

Name and title of interviewee: Phil Anderson, Business Innovation Advisor and Cleantech lead

Organization: Callaghan Innovation

Location: Auckland, New Zealand

Key Learnings from interview

LEARNING 1: New Zealand climate tech report used to create a shared vision and convince stakeholders of the need to act

LEARNING 2: Managing a large stakeholder group became unwieldy, so stakeholders were split into smaller, thematic working groups

LEARNING 3: Māori inclusion is written into Callaghan Innovation's strategy, and a team is dedicated to Māori economy

About the organization

Callaghan Innovation is a government-funded innovation agency focused on the research to commercialization stage. Callaghan Innovation works to enhance New Zealand's innovation ecosystem by working with other government partners, trade organizations, universities, research organizations, funders and incubator/accelerators to increase private sector investment in R&D and innovation.

Callaghan Innovation's inhouse scientists focus on underserved R&D topics, including advanced manufacturing, advanced materials, data, IoT and biotechnology. Callaghan Innovation also works to identify early-stage ventures with potential, accelerate them through to growth stage and help them connect to global demand.

Best practices for stakeholder engagement

Stakeholder mapping and prioritization:

Stakeholders selected according to objectives. Some are loosely involved; others are key coalition members. One on one calls with each partner to discuss where they fit and how best to participate.

Some stakeholders may be aligned with the mission, but they don't have the organizational mandate to participate.

Creating buy in and shared vision:

New Zealand Climate Tech for the World report used to create shared vision, galvanize intention to act, helped to prioritize thematic areas.

Ecosystem actors recruited to coalition via one-to-one calls/conversations. Mission statement used to ensure all partners are signed up to what we are achieving

Implementation and maintaining engagement:

Zoom calls with all partner organizations felt unruly, so CI created smaller working groups, or 3-4 organizations aligned around key themes: larger groups of stakeholders were aligned around mission but became unwieldy to manage. Other stakeholders are more loosely involved, kept informed but not actively participating.

Wider stakeholders involved via large events, for example startup pitches, tech conferences, commercialization-related workshops for students and startups

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Success Factors

Include ecosystem actors who have played a role in previous startup/SME innovation successes

Call out inclusivity goals in high level strategic objectives and dedicate personnel to further objectives.

Dedicated support for underrepresented groups: for example, Aotearoa energy innovation center Ara Ake supports Māori applicants to the Women in Climate and Energy Fellowship program.

Challenges

Creating coherence between the different workstreams, events and initiatives which are ongoing. Possible solutions include an overarching set of objectives, and possibly a website for the initiative.

Ecosystem Role: Government and public institutions

Name and title of interviewee: Mikael Fjallstrom – Senior Business Developer

Organization: Swedish Energy Agency

Location: Eskilstuna, Sweden

Key Learnings from interview

LEARNING 1: Sweden is a small country, most small countries focus on international market from beginning, Swedish Energy Agency first involves Swedish investors and is currently working on a focused program for international investors.

LEARNING 2: Participation is often about money. Trend towards big companies downsizing R&D departments means they are keen to engage smaller startups. SEA supports these collaborations by financing the startups.

LEARNING 3: International trips were useful for creating connections between stakeholders within the Swedish ecosystem – the information conversations and interactions which happened during the trip led to collaborations such as co-investment.

About the organization

The Swedish Energy Agency (SEA) is a government agency subordinate to the Ministry of Infrastructure, responsible for matters of the supply and use of energy in Sweden.

Aside from coordinating the energy system, the SEA supports and funds national research on new energy technologies, identifies and supports startups with potential to scale for global sustainable development, and supports national business development to commercialize and export cleantech innovations.

Best practices for stakeholder engagement

Stakeholder mapping and prioritization:

Mainly engaging with investors; also influenced by activities set for the Agency by the Government.

Creating buy in and shared vision:

Helps small early-stage startups to grow as well as engages with universities on R&D activities; connect serial entrepreneurs with startups.

Provide grants to startups on ideation stage as well as work together with entrepreneurial schools to finance the ideas.

Implementation & maintaining engagement:

Takes investors on visits to fairs, meetings, study visits in California and Germany to understand investor environment.

International trips were useful for creating connections between stakeholders within the Swedish ecosystem – the information conversations and interactions which happened during the trip led to collaborations such as co-investment.

Participation is often about money. Trend towards big companies downsizing R&D departments means they are keen to engage smaller startups. SEA supports these collaborations by financing the startups.

Evaluation & defining success:

Evaluation is based on whether or no involved investors ended up providing financial support to startups.

Currently working on development of further KPIs to follow companies in groups.

Success Factors

SEA organized visits for investors to visit California and Japan to understand international investor environments. An additional benefit of these trips was creating an opportunity for the Swedish investors to interact with each other and find ways to co-invest.

Challenges

Nowadays, it's harder to get investors' time and attention

Hard to follow with all startups due to large portfolio of investments (300 companies)

European legislation is odd to manage due to its definition of startups (have to be under 5 years), and as a result it affects how they can finance different projects

Ecosystem Role: ESO

Name and title of interviewee: Jules Besnainou – Executive Director

Organization: Cleantech for Europe

Location: Brussels/EU

Key Learnings from interview

LEARNING 1: Depending on goals, there might be different types of engagement. For awareness purposes - media outreach and site visits; for growth – public private partnerships

LEARNING 2: Need to have a strong thesis for why you are doing the intervention, what are the stakeholders getting out of it and share confidence that if you take their time and resources, you will use it wisely

LEARNING 3: React quickly and recover the value in case of disengagement by re-evaluating relevance and assessing signals from stakeholders

About the organization

Cleantech for Europe is an initiative supported by Breakthrough Energy and 20 EU cleantech VCs, aiming to help the EU lead the race to net zero by building bridges between cleantech and policy leaders. Cleantech for Europe engages with VC and early growth investors and policy makers from the European Commission and Parliament.

Traditionally, the EU cleantech innovation community and the EU policy community do not talk to each other. Cleantech for Europe fills this gap by creating touchpoints and opportunities for dialogue between the two communities.

Best practices for stakeholder engagement

Stakeholder mapping and prioritization:

Cleantech for Europe maintains a tracker of EU policy makers and interest areas, this is used for targeted interventions depending on the topic and policy in question

Initial engagement with 7-8 investors allowed Cleantech for Europe to reach a large audience (~200 companies) in a short time

Creating buy in and shared vision:

Cleantech for Europe developed a manifesto with its founding members, after initial conversations to identify challenges and areas of interest.

Implementation & maintaining engagement:

Personalized engagement according to context and objectives: for awareness purposes, media outreach and site visits are important; for growth – public private partnerships

Success Factors

Need to have a strong thesis for why you are doing it, what are the stakeholders getting out of it and share confidence that if you take their time and resources, you will use it wisely

Be generous and thoughtful in designing interactions

React quickly and recover the value in case of disengagement by re-evaluating relevance and assessing signals from stakeholders

Drive people towards an outcome that everyone feels positive about

Investors like attention, like being identified as pioneers, want visibility and exits for their companies

Local parameters are exceptionally important

Choosing right people: small conversations might lead to big impact

Ecosystem Role: Think Tank

Name and title of interviewee: Joel Boehme, Public Affairs Consultant, Head of Partnerships
Organization: Σigma Think Tank
Location: Brussels, Belgium

Key Learnings from interview

LEARNING 1: If you have a concrete policy goal, need to involve the desk officer who is working on that policy.

LEARNING 2: When you are facing established lobby groups or powerful interests, it is essential to form a coalition and present a unified front

Activities

Political lobbying

Best practices

Some stakeholder mapping needs to take place as an input to setting objectives.

Having a clear goal in mind

If you have a concrete policy goal, need to involve the desk officer who is working on that policy

Timing: to raise awareness among (political) voter base publish articles on day of key debates (good journalist relationships are a prerequisite)

When you are facing established lobby groups or powerful interests, essential to present a unified front

What does success look like?

- Reach and productively work with hands-on desk officer of a given legislative file
- Building a united coalition with a specific set of coordinated demands

Challenges

Different coalition members have competing demands: if no agreement is reached, that item must be deprioritized. Coalition members must also agree not to pursue the competing agenda unilaterally

b. Ecosystem Actors

Ecosystem Role: Youth Association

Name and title of interviewee: Jennifer Uchendu, Founder, and Tunde Lukman, Projects and Partnership Director

Organization: SustyVibes

Location: Nigeria

Key Learnings from interview

LEARNING 1: Youth-led initiatives result in significantly more engagement; letting youth lead projects (with the organization's supervision and support) give youth ownership and responsibility

LEARNING 2: Engage with youth in different ways – relating key messages to them through pop-culture allows them to talk about serious issues in a more approachable way

LEARNING 3: Youth need to be involved in policy discussions to better address their needs and challenges

About the organization

SustyVibes is a community organization that supports young people passionate about climate and environmental protection. The organization supports the sustainable development agenda through a wide variety of advocacy and youth-led projects. Some activities include sustainability and climate change education, recycling awareness programs, tree planting, masterclasses, and movie screenings. SustyVibe's goal is to increase awareness of sustainability issues within Nigeria and empower actors, especially youth, to take steps towards building a more sustainable future.

Partnerships

SustyVibes has strong partnerships with various public sector entities because projects must be approved by relevant government agencies. SustyVibes has worked with the Lagos State Waste Management Authority and Lagos State Health Management Agency, as well as the Ministry of Environment amongst others. SustyVibes has also partnered with cleantech ecosystem actors including Cleantech Hub in Abuja, Climate Launchpad, and Nigeria Climate Innovation Centre. Finally, SustyVibes has worked with corporates on their CSR objectives, especially in relation to youth inclusion and environmental protection with support from the embassies, including British High Commission and the US Embassy.

Activities

SustyVibes champions many youth-initiated environmental sustainability projects in Nigeria. Some activities include:

- Street Dreams Project – trainings using art and storytelling to empower young women in championing profitable environmental projects in their communities
- Susty on the Streets – addresses the plastic pollution emergency by direct advocacy, including street clean-ups, recycling and upcycling advocacy
- Eco-anxiety in Africa Project (TEAP) – seeks to understand and validate the experiences of eco-anxiety and environmental-related emotions in Africans
- Communitrees – planting trees in Nigeria working with local communities

- Susty Parties – actual parties where young people come together to have conversations around the SDGs in a more relaxed and fun environment
- Susty Movies – uses movies for sustainability advocacy

Best Practices

SustyVibes has been able to capitalize on youth engagement by allowing youth to lead projects and initiatives (on SustyVibes terms). As a result, the organization is known for its work with pop-culture and sustainability, such as the use of art, music, and dance to get young people engaged in environmental stewardship.

What does success look like?

Success is measured in different ways, depending on the project. For some projects, success is measured on the number of participants engaged in a certain event as well as the level of awareness and knowledge acquired following participation. For other projects, there is a preestablished goal to reach (for example, with tree planting, a target can be the number of trees planted).

Challenges

Access to funding is always difficult with youth-led and youth-focused projects. There is often financial support from international organisations through grants. While internal organisations support via project approvals, technical assistance they rarely provide financial backing.

Secondly, there are often policy bottlenecks/misalignments between different government agencies. This has happened within tree planting (one government agency plant trees but reports of trees being cut down by another agency) and in trying to formalize waste collectors (formalizing collectors is beneficial in reducing informal work and providing social/health services, but the government couldn't formalize collectors for other reasons).

Finally, roughly 60% of Nigeria's population is made up of youth, creating tremendous potential, but these youth need to get the relevant knowledge and skills that will allow them to start sustainable businesses to empower them financially.

Ecosystem Role: Accelerator

Name and title of interviewee: Erki Ani, CEO, Co-Founder

Finally, roughly 60% of Nigeria's population is made up of youth, creating tremendous potential, but these youth need to get the relevant knowledge and skills that will allow them to start sustainable businesses to empower them financially.

Ecosystem Role: Accelerator
Name and title of interviewee: Erki Ani, CEO, Co-Founder
Organization: Cleantech Estonia & Beamline Accelerator **Location**: Estonia
Key Learnings from interview LEARNING 1: Involving activists in the ecosystem can be challenging, but giving people the tools and opportunity to bring change helps to build buy in among the community LEARNING 2: Podcast on national radio used to increase demand for cleantech solutions by showcasing what is possible, targeting CEOs and corporate board members (i.e., corporate demand owners) LEARNING 3: Collaboration between ecosystems provides opportunities for mutual learnings and to find new markets for local startups
About the organization Cleantech Estonia is a Tallinn-based business accelerator focused on the cleantech sector. It supports startups headquartered in Estonia, the wider Baltics and Central and Eastern Europe (CEE). As well as delivering high quality acceleration programs, Cleantech Estonia also contributes to policy development and works to raise awareness of the impact of new technologies.
Partnerships Cleantech Estonia has partnered with Climate-KIC since 2015 on various projects, including ClimateLaunchpad, a global community of impact startups. Other programs include Pioneers into Practice: Empowering participants through system innovation thinking and Climate-KIC Journey Summer School.
Activities *Cleantech Breeze:* monthly networking event with panel discussion involving academics, ministry representatives, sector experts and startups *Hackathon Climathon* happens simultaneously in 130+ cities *Podcast:* during COVID, Cleantech Estonia started a podcast which broadcasts on national Estonian radio. The podcast engages policy makers in discussions affecting cleantech and highlights innovative startup solutions. *Founders club:* yearly meetup including startup founders and other ecosystem actors. Keynote speech from Erki sharing key investment trends and policy updates, followed by open mic where founders can share success and failure stories. Cleantech Estonia provides snacks and

drinks; the event usually teams up with a larger event such as Latitude 69 (a high-profile Estonian tech & startup event - https://latitude59.ee/)

Study trips: Cleantech Estonia organizes trips abroad where Estonian ecosystem builders can meet VCs and local ecosystem developers to share and learn best practices. Trips are organized to coincide with a larger event such as London Tech Week. Participants must be selected to attend; successful applicants are fully funded for the trip.

Collaboration with other ecosystems: in partnership with EIT Climate-KIC, Cleantech Estonia participates in a regional innovation scheme, sharing experiences with 11 other EU countries for mutual learning. This is also a way to share portfolio companies with other markets who may have demand for the technology.

Best Practices

- Coordinated approach: if a meeting takes place with a minister on a certain policy topic, try to bring that topic to a wider audience (public or civil society) by including it in a podcast.
- Building a long-term relationship   with ministerial advisors is crucial: whereas ministers move on, advisors stay in the field for a longer time and can progress topics.
- Build relationships with media: in general, they are hungry for innovation success stories
- On engaging local citizens: find people who are interested in sustainable development and work with them

What does success look like?

- Increased support for early-stage ideas and getting innovative solutions to market, including investment and business development. It can be measured by how many people are employed, revenues or investment attracted to the overall ecosystem.
- Securing government cleantech funding (for example Estonia's €100 million green fund)
- Opportunities for the ecosystem to participate in high level meetings and input to policy development or green innovation funding allocation decisions

Challenges

- Including activists: Activists care deeply and can help to provide solutions if engaged in the right way. Giving people the understanding that they have the tools and

opportunity to bring change can help with getting their buy in. If they feel that the local government is in their hands, they are more likely to engage.

- Finding funding, especially for base level innovation ecosystem development activities.
- Finding the right people and keeping them committed over time.

Ecosystem Role: Ecosystem Builder

Name and title of interviewee: Ellen Erickson, former Director for U.S. Ecosystems
Organization: Global Entrepreneurship Network (GEN)
Location: USA

Key Learnings from interview

LEARNING 1: SMEs need a different engagement approach from venture funded startups due to a lot of factors. One is that smaller startups have challenges with accessing capital, and a lot of resources are at the state level - sharing awareness about it and broadcasting it is important

LEARNING 2: Digital channels can exclude those who are not active online. Digital literacy can be overcome with training, but lack off connectivity must be resolved via infrastructure upgrades

LEARNING 3: To reach more communities and foster inclusive entrepreneurship, choose partners according to whether they can help to reach previously underserved groups

About the organization

GEN is an ecosystem builder, with the thesis that anyone anywhere should be able to start and scale a business. Working globally through entrepreneurial support organizations to make environments where entrepreneurship can thrive. Their focus is cross sector, with global themes of ecosystems, education, inclusion and policy.

Global reach: GEN operates programs in 200 different countries. Their events aim to make local ecosystems hospitable to entrepreneurs of all backgrounds, as well as connecting ecosystems regionally and internationally. In the USA GEN does a lot of work at state level

in smaller communities. There is a strong diversity focus. GEN also works to highlight entrepreneurial success stories, especially in smaller communities which do not get national coverage.

Partnerships

GEN primarily interacts with ESOs to create environments where entrepreneurship can thrive. Other interactions are with start-ups, policymakers, education players including community colleges and universities, business associations, diversity players including women's business centres. GEN emphasizes its role in engaging smaller stakeholders on state and city level.

Activities

GEN has identified key pain points as: capital, policies, access to talent, and this informs their stakeholder outreach approach

Global Entrepreneurship Week (GEW) is a global GEN event which helps kick of collaborations during the rest of the year.

Global Entrepreneurship Congress is a major activity where GEN convenes representatives from 180+ countries to discuss topics in entrepreneurship and learn from experts and peers about best practices and challenges in entrepreneurship in their respective ecosystems. The 2022 GEC was held in Saudi Arabia and the 2023 GEC will be held in Melbourn.

Community-led events include: workshops, pitch competitions, movie night

Best Practices

- Establishing national chapters
- Including smaller players on state and city level
- Providing a platform and Slack channel to connect all community organizers in different networks
- Sharing what has and what hasn't worked between different communities helps to replicate successes
- Highlight success stories from smaller communities and ecosystem, for example US heartland – lots of entrepreneurship happens outside the main innovation centers, important to make this part of the national picture

- GEN produces a series of targeted guides to explain to potential partner organizations in different segments why they should participate, and underline the benefits

What does success look like?

GEN's goal is to reach as many communities and partners as possible. Success measured by how many activities during the week are being held in each community, if they are getting other organizations in the ecosystem involved in GEW, and if they are reaching entrepreneurs in their community.

Challenges

- Silos between stakeholders: GEN tries to connect and foster communication among them, encouraging them to share best practices and lessons learned from failures.
- Fear of unfamiliar among stakeholders and as a result hesitation to engage: GEN's solution is using "Audience Guides" (see above) to help stakeholders better understand how to get involved and speaking directly to each stakeholder to explain the benefits of engaging.
- Digital literacy: the New Mexico community works with native American entrepreneurs, organizing a festival to sell their wares. During the pandemic this could not take place, so the community helped them to pivot to ecommerce with a "build your website in 100 days" program.

Ecosystem Role: Industry Association

Name and title of interviewee: Jason Anderson, President and CEO

Organization: Cleantech San Diego

Location: California, USA

Key Learnings from Interview

LEARNING 1: Engaging utilities is essential to drive change in the energy sector, forging connections between corporates and startups provides opportunities to trial innovative solutions.

LEARNING 2: Small players play equal part in ecosystem as well as big players. Being inclusive, paying attention to SMEs, speaking with entrepreneurs, and including them is part of the ecosystem development.

LEARNING 3: COVID impacts like virtual engagement didn't slow development, in reverse, it made it easier to engage stakeholders and interact, as well as include people from outside San Diego, made it more accessible.

About the Organization

Cleantech San Diego is a nonprofit, member-based business association focused on the energy sector. Its primary aim is to support startups driving the energy transition through leading advocacy efforts to promote cleantech priorities and encouraging more equitable investment across the San Diego region. All members of the association are headquartered in or have an office in the San Diego area.

Cleantech San Diego was founded 15 years ago, and its stakeholders include more than 120 businesses (entrepreneurs and utilities), universities, governments, and nonprofits. It also runs an accelerator for clean energy startups.

Activities

Cleantech San Diego carries out the following activities: Advocating for policies that help drive market growth, educating stakeholders, hosting networking events, running an accelerator program.

Main differentiator is its connections and deep knowledge of the clean energy ecosystem in San Diego. It uses these connections to organize high-value networking events and to forge connections between corporates and startups to trial innovative solutions.

Best Practices

- Important to engage universities since many founders come from university programs; utilities are essential to drive change in the energy sector
- Most stakeholders in this space already mission-driven by the idea of a cleaner environment and wanting to make a positive impact, this common overarching objective helps to align around a common vision
- Most utilities see the need for energy transition, California policy environment helps to incentivize change

What Does Success Look Like?

- Having common objective and collective mentality of cleaner environment and wanting to make a positive impact
- Involvement of academia: engaging universities and actively working with them is important because a lot of startups are coming out from universities and university incubators, and they bring first-hand talent and ideas

Challenges

Choosing right partners to foster more inclusion in the field: most startup founders are college educated, whereas there is a need to foster entrepreneurship in underserved communities. These are best reached by local community organizations who already have networks within the community. Essential to involve representatives at the program design stage, both to gain buy-in and create awareness and to design a program that works for their reality. Cleantech San Diego is still working on the best approach to identifying and selecting local community partners.

Ecosystem Role: Risk Capital Providers

Name and title of interviewee: Rune Thiell, CEO
Organization: Rockstart
Location: Netherlands

Key Learnings from interview

LEARNING 1: Involving later stage investors in early-stage startup selection helps to raise interest, they may follow startups as they scale and even provide follow on investment

LEARNING 2: Creating a high-quality event with interesting content and social aspects will get better ecosystem participation

About the organization

Rockstart is a venture capital fund investing in early-stage ventures in the energy, agrifood and emerging technology sectors. They also operate a six-month compact accelerator program.

The fund engages startups, follow on (growth) investors, startup mentors (sector or functional experts) in the EU and Latin America.

Rockstart provides startups with access to capital, market expertise and community. They have executed 260 early-stage investments so far with the long-term goal of building a $1 billion portfolio.

Rockstart considers itself an ecosystem builder, helping startups to find relevant market partners and investors.

Activities

Rockstart's investor days bring together relevant investors, corporates and partners from all over the EU or globally. The focus is on making a high-quality event with interesting content and a dinner so that people want to attend and are willing to spend time on it. Investors get excited about the same companies, identify synergies and collaboration opportunities

Later stage investors get involved in selecting promising startups: eg Series A and B investors sit in on seed rounds, this triggers their interest and they are likely to follow the company as it grows

Best Practices

- Weekly check ins with founders to check how financing is going, spot potential problems early and intervene before issues arise
- Connect startups with expert mentors who provide targeted coaching on sector-specific or functional topics
- Create external exposure through events and partnerships

Ecosystem Role: Universities & Research organizations

Name and title of interviewee: Phil Budden, Senior Lecturer, Technological Innovation, Entrepreneurship, and Strategy (TIES) Group
Organization: MIT Sloan Management School
Location: Boston, USA

Key Learnings from interview

LEARNING 1: MIT's model of the five core stakeholders in innovation-driven entrepreneurship ecosystems include: entrepreneur, risk capital, corporate, government, and university

LEARNING 2: Accelerators can be a tool of ecosystem-building, along with labs, incubators and workspaces. They may be funded by any one of the other stakeholders

LEARNING 3: Role of government is important, but not always what it (or others) expect: if that role is not fulfilled, entrepreneurship can be disincentivized

About the organization

MIT Sloan's Technological Innovation, Entrepreneurship and Strategy (TIES) group conducts research (among other things) into the organization, development and commercialization of

technology-based innovation in existing firms, and the formation, development and growth of technology-based new enterprises, especially in ecosystems.

The MIT Regional Entrepreneurship Acceleration Program (REAP) is MIT's global programme on accelerating innovation driven entrepreneurship through ecosystem development.

Success Factors

MIT's approach builds on Porterian cluster theory but takes the approach that clusters alone do not explain technology development: ecosystems are more organic and dynamic.

Place-based approach: ecosystems need to consider what they have to work with (systems analysis): which stakeholders can they bring? Which skills, knowledge, risk capital opportunities exist? This will determine what the growth possibilities are, and strategy.

Getting stakeholders together is essential and helps them to discover that they can play a role.

Challenges

Foundational institutions are important. Government must be a reliable partner, otherwise it can even disincentivize entrepreneurship. Where government is not fulfilling its role, in some cases other stakeholders can step in to fill the gap e.g., in public service provision.

Ecosystem Role: Ecosystem Support Organization

Name and title of interviewee: Aziz El Hachem, North Africa Director

Organization: Plug and Play Tech Center

Location: Morocco/Egypt

Key Learnings from interview

LEARNING 1: For international companies entering a new ecosystem, it is important to build relationships with local ecosystem actors to earn a place in the ecosystem.

LEARNING 2: For cleantech to thrive, the country first needs to develop the 'first layer' of foundation technology companies such as fintech and logistics.

About the organization

Plug and Play Tech Center is a general innovation platform, aiming to connect early-stage investors, startups, and corporations through industry-focused accelerator programs. The Center is focused on sustainability amongst other verticals and supports some startups in cleantech sectors.

Plug and Play Tech Center is active in more than 45 locations globally.

Partnerships

Key partners in Morocco are Moroccan state-owned phosphoric acid manufacturer and fertilizer producer OCP Group, and Mohammed VI Polytechnic University (UM6P).

Activities

Plug and Play Tech Center runs an equity free program for startups with investment, co-investment, mentorship and office space. Startups are also eligible for 'soft landing' support in any other country where Plug and Play is active.

Plug and Play Tech Center runs two acceleration programs yearly and ends each acceleration program with an EXPO or a graduation ceremony where they invite the different ecosystem players such as government representatives, investors, accelerators, startups and tech enthusiasts. These events showcase startups and include panel discussions on regulations and investment trends.

Plug and Play Tech Center also organizes Smart Cities Hackathons where they invite students and entrepreneurs from multiple backgrounds to join a two/three-day intensive idea generation competition.

Best Practices

- Study the culture before entering the ecosystem
- Build personal relationships to get the insight of the ecosystem and references to the right people
- Invite big name to events, this boosts attendance from other participants
- Mix and match mentoring between early-stage and more developed startups

- Each African region has a few key players – invite these to events to show them what the different ecosystems has to offer

A successful Hackathon needs a problem, potential solutions, a prize and a call to action

What does success look like?

Metrics to measure success include number of startups graduating from programs, amount of money raised, successful introductions to corporates, government entities, investors and job creation.

Challenges

Traditionally is has been difficult to be successful without personal connections. With merit-based selective programs, Plug and Play is trying to make the ecosystem more inclusive. Need to work to rebuild confidence with corporates reluctant to invest or engage with startups following previous bad experiences.

Appendix 4. Types of engagement activities to increase ecosystem connectedness

We can divide events into two groups according to their engagement type – open- and closed-door events. Events can address different objectives and involve different kinds of stakeholders. They can also be formal and informal, thus, show different level of engagement and interaction. Events can serve different purposes according to context and objectives: broadcast or site visits can be used for raising awareness; competitions and hackathons for growth. Other purposes include increasing visibility, engaging with stakeholders outside of the existing ecosystem or reach, finding new partners, investors, or mentors.

Networking events

Networking events allow to engage with different stakeholders in a more informal way, find new partners, promote the product or the company as well as meet potential customers and build recognition. Networking events include:

- **Talks** – an event organized to discuss a specific topic
- **Meetups** – an event organized to engage stakeholders for an informal meetup
- **Conferences** – more formal type of event organized to engage the ecosystem
- **Startup Weeks** – a series of events to showcase startups and connect them with risk capital
- **Webinars** – online events to discuss a particular topic
- **Community led events** – informal gatherings organized by ecosystem players.

Competitions, Hackathons & Challenges

Competitions are effective tool for showcasing early-stage startups and providing them with initial funding. Competitions also help with building investor and advisor networks, raising visibility in the marketplace, and iterating business models and plans.

Startup Challenges allow public and private organizations communicate their innovation needs to find innovative ideas and solutions outside the company.

Hackathons provide an opportunity to engage talent and create functioning product by the end of the event. For participants, it increases their knowledge and skill level, for organizers – it provides a solution to their problem in a short turnaround with low costs.

Competitions, Hackathons & Challenges all provide a room for networking, allow startups to connect with risk capital as well as find advisors and mentors.

Broadcast communications

Broadcast communications includes using radio, tv and internet tools to transmit information. It involves engaging with media to share information about the product or other news of the company. It's a one-way communication since only receptors aren't engaged in a conversation but only receiving it.

Workshops

A workshop can introduce a new concept and can demonstrate its practical use. It's a way to teach hands-on skills to participants. Workshops aim to provide new information and knowledge to participants and improve their competence.

One on one discussions

One on one discussions allow for private discussion on an individual level. Such type of interaction can be used to provide space for both participants to share feedback, discuss progress and identify challenges. One-on-one discussions can be used for discussing a new venture or partnership or providing feedback.

Citizen assemblies

Citizens' assemblies allow for more in-depth discussion of issues, expert knowledge, debate and personal exchange. Citizen assemblies are beneficial for getting honest feedback from first-hand users, as well as ideas for improvement.

Most citizens' assemblies are top-down, initiated by governments to listen to the people.

Site visits

Site visits are tours conducted to show the work process and physical place of a company. Site visits raise awareness and visibility of the company and its activities. In some cases, it is also a way to engage relevant stakeholders in the implementation activities.

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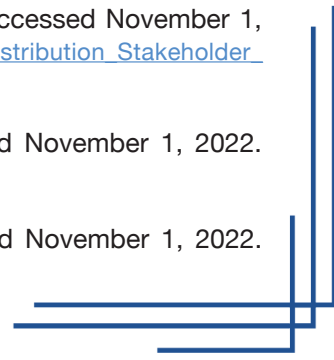
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