MULTI-STAKEHOLDERS PARTNERSHIP TO ACHIEVE LONG-TERM SUSTAINABLE DEVELOPMENT GOALS

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Summary

At global level, there are megatrends impacting and accelerating the pace of change. These megatrends are divided in three categories: technological, social and techno-social (YBI and Accenture 2019). The techno-social trends such as globalization and environmentalism are taking center stage in the global agenda (YBI and Accenture 2019). The environmentalism trend has been guided by the 2030 Agenda for Sustainable Development which is an urgent call for action into a global partnership, this agenda underpinned 17 Sustainable Development Goals (SDGs) and 169 targets. The 17 SDGs are the goals where humanity wants to be in 2030, they promote economic growth, social inclusion and environmental protection. Moreover, they are a practical tool for governments, institutions, local communities, civil society organizations and businesses to work together towards a common and clear set of targets to increase social progress, improve people's lives and ensure 'leave no one behind' (UN n.d.).

The SDGs are an urgent call for action because countries are living a crisis in personal rights and inclusiveness. Quality education (SDG 4) and gender equality (SDG 5) are long-term goals included in the 2030 agenda that need to be top priority to stop this global crisis (Green 2018). These two goals have a well-recognized role of enabler other goals achievement and make easier the fulfilment of the entire Sustainable Development Agenda (International Council for Science 2017). Moreover, the inclusion of these two goals in the 2030 Agenda reflects their importance an continuing high priority as they were prominent in the MDGs, they are strongly connected with other SDGs and with the three Social Progress index categories; Basic human needs, Foundation of wellbeing and Opportunity to improve (The Social Progress Imperative 2018).

However, data shows that countries are moving too slowly in the effort to ensure education and create equal opportunities for girls and women in order to 'leave no one behind' (Catalyst 2020). Looking at the data, one of the fields where there are opportunities to accelerate progress and stop negative trends are the science, technology, engineering and mathematics (STEM) sectors. Special slow progress and even movement backwards can be seen on STEM education where girls and women remain underrepresented and unprepared for work in these fields (Pew Research Center 2018). Therefore, actions are required to encourage the inclusion of women into STEM education and to create equal opportunities in the most growing sectors in the world (Zuber 2018).

On the other hand, the globalization trend is guided by collaboration across borders and sectors, the hyper connectivity of people, organizations and objects and the creation of virtual teams that are geographically spread. All of this supported by technology and the internet that offer a variety of digital collaboration tools in order to do doing business today (YBI and Accenture 2019). Multi-stakeholder partnerships have been promoted by a chorus of companies, international agencies and NGOs as the most effective way of achieving the 2030 agenda (Rein 2009) such as SDG 4 and SDG 5, which are global problems that require global solutions. Nowadays, collaboration in form of partnerships are more important than ever as a mean to solve problems when no country or individual can resolve them in isolation (J. K. Kramer 2011). Multi-stakeholders' partnership can use approaches such as systems thinking and collective impact to tackle global complex problems, achieve large-scale impact, systemic change and drive transformation. These approaches play a crucial role to achieve the SDGs by enabling mobilizing and sharing knowledge, expertise, technologies and financial resources (UN 2020).

This report is focused on the process to build a multi-stakeholder partnership between business, NGOs, and academia in order to solve long-term sustainable development challenges, with a in particular focus on SDG 4 and SDG 5 to encourage girls to take up STEM degrees in elementary schools. Therefore, the following research question was formulated:

How to build a multi-stakeholders partnership between business, NGOs and academia to encourage girls to take up STEM degrees in elementary schools?

This report is a result of a collaboration between Siemens Gamesa Renewable Energy, SDSN Youth Global Schools Program and Aalborg University. Different roles were performed by the author in these three organizations to develop the thesis project:
- Student support in SGRE company working with three corporate areas such as: Social Commitment, Human Resources and Health, Safety & Environment with worldwide scope
- Inter in SDSN Youth organization in the Global Schools Program
- Student in Aalborg University in the MSc Urban Energy and Environmental Planning, Cities and Sustainability specialization.

This collaboration allowed the completion of this thesis project that gives the foundation to create a strategic plan to build a multi-stakeholders partnership between Siemens Gamesa Renewable Energy, SDSN Youth, and Aalborg University, to encourage girls to take up STEM degrees in elementary schools.

This report proposes a multi-stakeholders partnership lifecycle based on theoretical and practical models found on the literature such as: multi-stakeholders partnership, collective impact and system approach. Moreover, this report uses the multi-stakeholders partnership lifecycle as analytical framework to explore and analyze three case studies: SGRE, SDSN Youth and AAU. The analysis of these case studies was focus on understand how they work internally with their working groups and sustainable initiatives and with external partners and communities towards sustainable initiatives; and the methods they use to generate and implement interventions. The results from the analysis summarizes 11 best practices across SGRE, SDSN Youth and AAU. Five of the eleven practices are essential to lead a shift in the paradigm of partnerships and will be integrate in the final strategic plan:
1) The use of the PBL and megaprojects model
2) The use of digital collaboration tools
3) The inclusion of youth as core members in projects, programs and activities.
4) The presence of a "backbone organization" to coordinate partners working in collaboration
5) The use of the Design thinking methodology

Even though this report is focused on multi-stakeholders partnership to encourage girls to take up STEM degrees in elementary schools, this framework and the 5 best practices can be used to design and implement interventions to achieve short- and long-term sustainable development challenges and SDGs in different levels of collaboration such as: Cooperation between business partners along value chains; Project-level partnerships; Industry-level alliances; Coordination between different levels within a company (J. Nelson 2017).

This report is divided in four parts explained bellow:

Part I of this report is composed by two chapters: Introduction and State of the Art of Partnerships. The Introduction chapter describes the analysis of a series of research studies related to SDG 4 and SDG 5 and the participation of women in STEM fields. The State of the Art of Partnerships chapter starts by presenting the types of partnerships for sustainable development and portraits the increasing importance of multi-stakeholders partnership and collective impact to design and implement interventions to solve complex problems such as the SDGs. This part continues highlighting some examples of multi-stakeholders partnership at different levels.

Part II of this report is composed by three chapters: Research Design; Theoretical Framework; and Analytical Framework. The research design chapter outlines the project structure, theoretical approach, research question and data collection methods. This part presents the entire process of developing the thesis project, research strategy and validity and reliability of the report. The Theoretical Framework chapter outlines: theories and definitions; theoretical and practical models; and the proposed Multi-Stakeholders Partnership Lifecycle (MSPL) model. This part of the report explains in detail the theoretical and practical models taken as a based to develop the new MSPL proposed model. The Analytical Framework chapter outlines the process to analyze and understand how SGRE, SDSN Youth and AAU work internally and externally with stakeholders to generate and implement interventions aligned to the SDGs and how they scale and sustain impact using the theoretical MSPL model.

Part III of this report is composed by four chapters: Results, Discussion, Conclusion and Perspectives. The Results chapter presents the data collected from the three case studies -SGRE, SDSN Youth and AAU-. The Discussion chapter compares the theoretical model versus the practices used in SGRE, SDSN Youth and AAU. This section summarizes 11 best practices across the three case studies, five of the eleven practices are essential to lead a shift in the paradigm of partnerships they will be integrate in the multi-stakeholders partnership lifecycle and in the strategic plan presented in the conclusion section. The Conclusion chapter presents the strategic plan that integrates the theoretical framework and the five best practices to build a multi-stakeholders partnership between SGRE, SDSN Youth and AAU. The Perspectives chapter alternative uses of the multi-stakeholders partnership lifecycle and the five best practices in different levels of collaboration and to achieve short- and long-term SDGs.

Part IV of this report is composed by three chapters: Reflection on the internship and student work, Bibliography & Annex. The reflections include lessons learned, business as usual experiences (office, plant, meetings and presentations) and comparison between both SGRE and SDSN Youth work environment.

Table of Contents

Figures and Tables

1. Introduction

This part of the report portraits the background of the Sustainable Development Goals, the increasing importance and impact of quality education, gender equality and partnership to solve complex problems. The section narrows down to the importance of achieve gender equality in STEM education by pushing girls and young women in take up STEM degrees. The report shows the current figures of women in STEM education and workplaces and the slow progress along the past decades to achieve gender equality in this field. The section continues highlighting the importance to use multi-stakeholders partnership as a mean to achieve quality education and gender equality in STEM.

1.1. Mega trends

Globally, there are three megatrends impacting all sectors and the way we work. These trends are interlinked, and they are creating new challenges. These megatrends can be divided in three main groups; the technological, social and techno-social trends (YBI and Accenture 2019).

The Technological trends are; digitalization with the endless volume of digital information; automation of production processes and delivery of products and services with technologies such as robotics, artificial intelligence, machine learning and 3D printing; and hyper connectivity of people, organizations and objects resulting from the use of multiple means of communication such as mobile technology, the internet and the Internet of Things (YBI and Accenture 2019).

The Social trends are: demographic challenges with aging population and decrease in birth rates in developed countries and the increase of youth population in developing countries, rising the unemployment and underemployment rates around the world; unmatched between skills learned in schools and skills required in jobs and the fact that many jobs are being replaced by automation and digital technologies; and the network society based on virtual relationships between individuals, groups, and organizations with technologies that allow digital networks. Businesses are shifting towards remote working, distance learning, and task-platform work (YBI and Accenture 2019).

The Techno-social trends are; globalization where collaboration between multiple organizations in multiple nations is an integral part of doing business; environmental trend which currently is an integral part of the business strategy. Consumers are also shifting for sustainable lifestyle practices and technologies are also working on the same line in terms of renewable energy and electric vehicles. The workforce will be benefit with this trend with the creation of more than 40 million jobs by 2030 due to green economy policies (YBI and Accenture 2019).

Moreover, the environmentalism trend is taking center stage on the global agenda and is guided by the 2030 Agenda for Sustainable Development which is an urgent call for action by developed and developing countries in a global partnership (UN 2020). Sustainable development is defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development 1987). The United Nations 2030 Agenda for Sustainable Development was adopted by 193 world governments in September 2015. It underpinned 17 Sustainable Development Goals (SDGs) and 169 targets (UN n.d.). The SDGs are the goals where, humanity wants to be in 2030, they promote economic growth, social inclusion and environmental protection. They are a practical tool for

governments, institutions, local communities, civil society organizations and businesses to work together towards a common and clear set of targets to improve lives of people and ensure "leave no one behind". These goals are universal and apply to both rich and poor countries, cities and villages, young and old, male and female (International Council for Science 2017).

1.2. SDGs and Social Progress

Research demonstrate that we cannot achieve the SDGs with business as usual and just focused on economic growth. The 17 SDGs aim to catalyze a shift from business as usual to true sustainable development. Therefore, is required to do things different, we need to prioritize social progress to achieve the SDGs and ensure leave no one behind. Research shows that if countries prioritize education, health and wellbeing, they can make more progress in SDGs than the Gross Domestic Product (GDP) can do. Practice shown that is possible to overperform in social progress even when the GDP is not so great such as the case of Costa Rica (The Social Progress Imperative 2018).

The Social Progress Index measures all the topics that the SDGs want to achieve but in a different and traceable way. This index make the track of the social progress easier by measuring three fundamental categories in each country; Basic human needs, Foundation of wellbeing and Opportunity to improve (The Social Progress Imperative 2018).

Figure 1 The Social Progress Index (The Social Progress Imperative 2018)

The Social Progress Index scores the countries from 1 to 100 by answering the next 3 questions (The Social Progress Imperative 2018):

- Does everyone have the basic human needs to survival as food, water, shelter and safety?
- Does everyone have the foundation for a better life as education, information, health and sustainable environment?
- Does everyone have the opportunity to improve their lives as human rights, freedom of choice and freedom of discrimination?

1.3. Prioritize SDG 4 and SDG 5

"Education is a fundamental right and the basis for progress in every country" (Ki-moon 2015).
"We cannot succeed if half of the world is left behind" (Yousafzai 2013)

The Social Progress from 2015 to 2018 show that the world is struggling in personal rights and inclusiveness of minorities and Lesbian, Gay, Bisexual, and Transgender (LGBT), this means a gender equality issue. These aspects are critical in the agenda of leave no one left behind (Green 2018). Country scores are generally low and moving backwards, this means that the countries need to start focusing on long-term goals such as quality education (SDG 4) and gender equality (SDG 5), These goals need to be top priority to increase social progress and stop the global crisis in personal rights and inclusiveness (Green 2018).

Sustainable Development Goal 4 refers to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all".
Sustainable Development Goal 5 refers to "achieve gender equality and empower all women and girls" (UN n.d.).

The achievement of these priority goals has a well-recognized role of enabling other SDGs achievement and make easier the fulfilment of the entire Sustainable Development Agenda (International Council for Science 2017). These two goals have a continuing high priority as they were prominent in the MDGs (Green 2018). Also, they impact directly in the three categories of the social progress index; Basic human needs, Foundation of Wellbeing and Opportunity to improve (The Social Progress Imperative 2018).

Understand the range of positive and negative interactions among SDG 4, SDG 5 with the other SDGs and with the Social Progress Index's categories is key to unlocking their full potential.

1.4. Interactions between SDG 4, SDG 5, Social Progress Index and other SDGs

Figure 2 The 17 Sustainable Development Goals (UN n.d.)

Interactions between the "Basic Human Needs" category of the Social Progress Index, SDG 4, SDG 5 and:

- **SDG 1 and SDG 2**: Education reduces poverty and increases people's income (World Bank 2014). Educating girls prevents the transmission of poverty by generations, it breaks the early marriages, childbearing, health problems and other risks associated with these events (World Bank 2014).

  Figures: Globally women are 4% more likely than men to live in extreme poverty, that can be attributed to the performance of unpaid care and domestic work (Katia Vladimirova 2015). Additionally, In 2018, an estimated of 700 million people (9.2% of the world population) were exposed to severe levels of food insecurity and the prevalence was higher among women with 9.8% and 9.1% for men. The gender gaps are larger among those who are less educated, poor and living in urban areas (UN 2019).

- **SDG 16:** Education is perceived as a tool to promote justice, peace and equality. It promotes tolerance, trust and motivates people to participate in the society (UNESCO 2013). Educate girls and women empower them to make transformative changes in their lives by boosting their chances to get a job, stay, promote been healthy, participating in society, overcome discrimination and claim their rights (UNESCO 2013).

  Figures: Women represent three quarters of the human trafficking victims (UN 2019)

Interactions between the "Foundation of Wellbeing" category of the Social Progress Index, SDG 4, SDG 5 and:

- Getting quality education allow people to get out of poverty, therefore, reduce inequalities and thus is easier to reach gender equality. Education empowers people to live healthier and more sustainable, it also fosters tolerance and peace (UN 2019).

  Figures: Girls and young women are primarily excluded from education due to social and cultural norms in most of the countries (UNESCO 2010). One-third of developing countries have not achieved gender equality in primary and secondary education and this disadvantage also has an impact in the lack of access to skills and limited opportunities in the labor market (UN 2019). Data shows that investing in education for girls can return $5 dollars for every dollar spent (UN 2019). Additionally, facilitating work conditions for women and participation in society can return $7 dollars for every dollar spent (UN 2019).

- **SDG 3:** Education can improve people's health by being informed about diseases, recognize signs of illness in early stages, take preventative measures and use health care services (UNESCO 2013). Also, reproductive education programs for women shown improvements in women's health and for their children and stabilize population growth (UNESCO 2013).

  Figures: Data from 64 developing countries shows large inequalities in women living in rural areas to access care services during childbirth (UN 2019).

- **SDG 7:** Education in fuel sources, risks and opportunities is part of a package to achieve a sustaining energy transition (IIASA 2012). The lack of safe cooking fuels has serious health risks to women and children.

Figures: Worldwide, three billion people lack access to clean cooking fuels, more than half of the population relies on solid fuels such as wood, crop wastes, charcoal, coal or dung (UN 2019).

Interactions between the "Opportunity to Improve" category of the Social Progress Index, SDG 4, SDG 5 and:

- "Gender equality is a fundamental human right" (UN 2019). Gender equality is critical to achieve a healthy society, as it reduces poverty, promote health, education, protection and the well-being of people (UN 2019). Additionally, education leads to achieve gender equality by promoting positive attitudes between girls and boys (UNESCO 2013).

- **SDG 8:** Women's economic participation is "a part of the growth and stability equation" as they represent more than half of the population. Women have talent, human capital and productivity equal to men. The absence of women in leadership is against the strategy of boosting talent to promote business and performance (Duflo 2012). Gender equality and diversity have been recognized to have great beneficial effects on the entire global economy, more women in the labor market translates into a substantial increase in GDP (Elborgh-Woytek 2013). Moreover, when more women work, the demand for services increase, leading to the creation of more jobs (D. Del Boca 2008). Additionally, having men and women in decision-making opens the perspectives, diversifies the pool of talents and competences, increases creativity and innovation, improves the process and reduces conflicts (Rose 2007).

On the other hand, higher educational for women increases their access to information and senior level positions, also strengthen their capacity to question, reflect and act on their condition (UN Women 2012). Education empowers women to overcome discrimination and claim their rights and overcome barriers (UNESCO 2013). In particular, secondary education is critical for women to be able to claim their rights, have a decent work and participate in decision-making process (UN Women 2012). Education also expands opportunities for women to work outside the home and move out from agricultural production activities and enter wage work (World Bank 2007).

Figures: Women are often discriminated against the labor market and earn less than men (UNDP 2014). In 2019 the share of women in the labor force globally was 39%. Women in senior roles is low, only 33 women (representing 6.6%) were CEOs of the 500 Fortune companies in 2019 and with only 29% of senior roles globally (Catalyst 2020).

- **SDG 9:** Education influence the innovation capacity and provides the foundation for technology absorption processes (World Bank 2010). Specialized knowledge in science and engineering may matter more than general managerial capabilities and technical skills in increasing innovation (UNIDO 2013).

Figures: Girls representation in STEM (science, technology, engineering, mathematics) degrees is low, therefore, girls are unprepared for work in the most growing and best paid fields as technology and science (Catalyst 2020). On average, women comprise almost 29% of the world's researchers. Women representation decreased in computer occupations which is one of the highest-paying and fastest-growing STEM clusters (Catalyst 2020), in 1990, 32% of workers in computer occupations were women, today women's share has dropped to 25%. Engineering is the job cluster in which women have the lowest levels of representation on average with 14% in 2018 (Pew Research Center 2018).

All in all, the SDGs are universal and were created to 'leave no one behind'. As presented below, SDG 4 and SDG 5 are strongly connected with other SDGs and with the three categories of the Social Progress Index categories. Data shows that we are moving too slowly in our efforts to ensure education and create equal opportunities for girls and women. Looking at the data, STEM is one of the most growing and best paid fields but is also the field where girls and women remain underrepresented. Therefore, is essential to find opportunities to accelerate progress and stop negative trends.

1.5. STEM education

"The challenges of conquering poverty, combatting climate change and achieving truly sustainable development in the coming decades oblige us to work together. Using partnership, leadership and wise investments in education, we can transform individual lives, national economies and our world." (Ki-moon 2015)

The SDG 4, SDG 5 and the entire 2030 sustainable agenda includes global goals and challenges that require people capable to develop global solutions. STEM education prepares and empowers children and young people to seek the solutions required to achieve the 2030 agenda by promoting soft skills, creativity, innovation, problem solving, critical thinking, conscientious actions and make sustainable contributions to society that guarantees a livable future for everyone (Siemens Stiftung 2019).

Data shows that jobs in STEM related occupations are growing significantly faster than other occupations. Employment in STEM occupations grew 16.5% between 2013 and 2018, this means 1.6 times higher than non-STEM jobs (Department of Education, Skills and Employment 2019).

1.6. Women in STEM education

STEM sector has a notable imbalance in gender not only at education level but also in inclusive-work opportunities in one of the fastest growing fields. The imbalances need to be eradicated and women participation should be strengthened. All in all, women are underrepresented in research and innovation (29%) (Catalyst 2020), engineering (14%), computer (25%) and physical science (28%) occupations (Pew Research Center 2018).

Actions are required in STEM sector to reach gender equality and build the workforce of the future. Research on how to solve this problem suggest investing and develop student programs and projects to encourage girls and young women to take STEM degrees, this will significate an increase in women representation on the highest-paying and fastest-growing clusters that nowadays is dominated by men. (UN Women 2012). Scientific research suggests female brain matures faster than the male brain and girls tend to have stronger neural networks in the temporal lobe, leading to better memorization and listening abilities. Educators can take advantage of these differences between boys and girls and develop special STEM curriculums for girls at an early age. This could help bring STEM to girls across classrooms and encourage them to explore the field more deeply (Minevich 2019). Moreover, STEM awareness campaigns have the potential to deliver a new set of opportunities and benefits to the female workforce of tomorrow. For instance, Eastern Europe introduces "STEM awareness campaigns," which is a large-scale private-public initiative through which the government, academic and private institutions collaborate to educate the public about STEM. Another example of a STEM awareness initiative is "STEM Future", an

international non-profit organization that provides education and workshops for adolescents to encourage careers in technology, math and science (Minevich 2019).

Gender equality measures, such as; the removal of gender stereotypes in education; awareness raising and promotion of STEM subjects to girls and women; and career guidance to encourage girls to consider studying in fields dominated by men, are likely to result in higher number of women graduating from STEM subjects, therefore, more women are taking up jobs due to good employment prospects in the area of STEM at present and in the future (EIGE 2017).

All in all, women and girls represent half of the world's population and therefore also half of its potential (UN 2019). Nowadays, gender stereotypes and imbalance are still steering girls and women away from STEM education (Garcia Herreros 2020). Disadvantages in education for women are translated into lack of access to skills and limited opportunities in the labor market. Therefore, women and girl's empowerment are essential to expand economic growth and promote social development. The full participation of women in STEM labor forces would add percentage points to most national growth rates. Closing gender gaps in STEM education would have a positive impact on social progress and economic progress. For instance, EU GDP would increase from 0.7-0.9 % in 2030 per capita (EIGE 2017). On the other hand, fail in the inclusion of women into STEM education will be translated in lack of workforce in the future which will put pressure in the most growing sectors in the world. Nowadays in companies is required a vision to create STEM-capable workforce that includes women (Zuber 2018)

2. Partnership's State of the Art

"If you look around at what is going on in the world, the need for cross-generational cooperation is clear. Equally clear is that STEM education will form the foundation of the 21st century" said Dr. Nathalie von Siemens (Siemens Stiftung 2019).

Just as SDGs are interrelated, the solutions are also interlinked. The SDG 4 and SDG 5 are global challenges that require global solutions, no country or individual can resolve them in isolation. In other words, partnership is more important than ever (UN 2019) as it turns the potential for synergies into reality (International Council for Science 2017). The 2030 Sustainable Agenda requires cooperation and collaboration among all sectors and actors such as civil society, business, government, NGOs, foundations and others for their achievement (Darian Stibbe 2015) as is required their financial resources, knowledge and expertise. Partnership has become an essential paradigm in sustainable development (Darian Stibbe 2015).

Multi-stakeholder partnerships have been promoted by a chorus of companies, international agencies and NGOs as the most effective way of achieving sustainable development (Rein 2009). They will play a crucial role to achieve the SDGs by enabling mobilizing and sharing knowledge, expertise, technologies and financial resources (UN 2020). Partnership is a mean to achieve a shared vision that no one partner could achieve on its own (KPMG and IDAS 2016). The importance of partnership and collaboration across different sectors has been recognized fully by the UN, businesses and by all leading institutions in international development in the 21st century (Darian Stibbe 2015). In fact, multi-stakeholder partnerships is recognized as an important way to

achieve the SDGs, reflected in the SDG 17, which refers to "strengthen the means of implementation and revitalize the global partnership for sustainable development" (UN 2020).

In 2018, 51 of 114 countries reported overall progress towards strengthening multi-stakeholder partnerships in regard to the quality and use of public financial management (UN 2020). Apart from the progress, these is a need to increase a more inclusive dialogue between the public and private sectors and create space for civil society's contribution (UN n.d.).

2.1. Benefits and types of partnerships for sustainable development

Rio Earth Summit in 1992 was an active period of experimentation in the partnership area, specially business participating in partnerships for sustainable development. There is still no commonly agreed definition for the different collaborative models that have emerged since then, partnerships vary widely in terms of their scope, participants, governance models, purpose, and levels of activity (J. Nelson 2017).

Nowadays there is a need to increase not only the number of partnerships, but also their effectiveness, efficiency and legitimacy. Partnerships can play a vital role in helping to overcome some of the following obstacles (J. Nelson 2017):

- Improve the impact of all companies to support a more responsible, inclusive and sustainable growth. To achieve sustainable development in companies, they need to incorporated sustainability criteria into their corporate strategies, decision-making and operations. Also, they need to fully integrate responsible business practices and performance standards such as; respect for the human rights; environmental, social and governance standards (J. Nelson 2017).

  Partnership can help by becoming a vehicle to establish responsible business standards, address shared challenges and to drive better performance along value chains, entire industry and/or country. They can also help to ensure greater corporate transparency and accountability, both on an individual and collective basis (J. Nelson 2017).

- Increase private sector investment and innovation in sustainable development. It will be urgent to mobilize, catalyze and channel more private funding and investment in the SDGs. It also includes mobilizing expertise and scaling capabilities, ranging from science, technology and research skills to the innovation, implementation and operational capacities of private sector (J. Nelson 2017).

  Partnership can help by functioning as a tool for mobilize public and private financial resources, expertise and capabilities. They make possible the share of risks, costs of implementing and scaling new products, services, technologies and business models to address specific SDGs (J. Nelson 2017).

- Achieve systemic transformation of markets with a focus on people and environment. Transformational change is required to achieve the SDGs, but to achieve transformation, markets require numerous different interventions at different levels and from different actors. Also, is required intermediary organizations or partnership platforms that can help to support, align and coordinate these diverse efforts and collective impact. No company can do this alone, nor can any government (J. Nelson 2017).

Multi-stakeholder platforms can help by enabling the move from transactional partnerships to more transformative or systemic models. The benefits of Multi-stakeholder platforms are enabling collective advocacy; facilitate better data collection, analysis and benchmarking to improve performance and accountability; align and coordinate the diverse interventions; and enable the environment for achieving shared value and scale results (J. Nelson 2017).

- Build mutual trust, accountability and social contracts between business, government and civil society. Large numbers of people feel that governments and companies are not delivering for the public good and protecting its social and environmental rights. Thus, governments and companies are facing growing public discontent as citizens are struggling with rising inequality, job insecurity and uncertainty (J. Nelson 2017).

Partnership can improve the communication between public and private organizations to co-create a shared vision and agenda for change. Thus, build mutual respect and trust and strengthen the social contract between them (J. Nelson 2017).

The growing number of collaborative relationships over the past two decades, are both formally through established structures and informally through networks, to experiment, learn, adapt and scale or replicate what works. Based on the analysis of partnership's impact in (2017) there are five collaborative pathways of partnership towards sustainable development (J. Nelson 2017).

I. "Cooperation with business partners along value chains" includes suppliers, distributors, retailers, investors, investees, and joint venture partners.

II. "Project-level, financing and implementation partnerships" usually called public-private partnerships (PPPs), It involves one or a few companies partnering with NGOs, government entities, research organizations or each other to share risks or costs and/or to catalyze resources to develop new technologies, products, services or business models. This collaboration level is used in more than 134 developing countries for social and infrastructure projects.

III. "Industry-level, precompetitive business alliances" involves a group of companies working together on a precompetitive basis within or across industries to drive sector-wide change.

IV. "Multi-stakeholder institutions, platforms and networks" involves companies collaborating with governments, donors, investors, NGOs, trade unions, producer associations, academic, research institutions, and in some cases a combination of all these together. They have informal networks, technology that enables open collaboration platforms, their own formal governance and accountability structures and independent funds.

V. Coordination between different levels and types of partnership outlined above to drive systemic change (J. Nelson 2017).

2.2. Multi-stakeholders partnership in practice

Multi-stakeholders partnership involves collaboration among many actors across sectors that share a common goal and they want to combine their resources, capabilities and interests (Esben Rahbek 2013). Evidence suggest that Multi-stakeholders partnership offers ongoing potential to drive transformational or systemic change needed for sustainable development, although it faces

challenges in governance, accountability, alignment, mediation, communication and coordination of the diverse participants and levels of engagement.

Surveys carried out in different industries worldwide between 2014 and 2016 found that:
- 87% of CEOs from 100 different countries and 25 industries believe that "cross-sector partnerships is essential to accelerating transformation towards sustainable development" (J. Nelson 2017).
- 77% of 2,700 senior innovation executives across 23 countries believe that "the majority of businesses are seeing financial results from collaboration" (J. Nelson 2017).
- Hundreds of sustainability leaders in companies, NGOs, academic institutions and government highlight that there is a growing "need for multi-stakeholder partnerships and for shifting from transactional types of cooperation to more transformational collective action among many actors" (J. Nelson 2017).

There has been an increase in the number of multi-stakeholder initiatives (MSIs) since 2002 at global level. Many of these have country-level implementation scope. The primary goal of this global multi-stakeholder partnership is to mobilize financing, expertise and other resources to meet crucial sustainable development needs, such as improving the access to health, food, security, energy, education, training, technology and financial inclusion (Esben Rahbek 2013).

Multi-stakeholders initiatives at city level:
- 100 Resilient Cities: is a network of 100 cities worldwide with corporate partners to build economic, social and environmental resilience and share good practices (100 Resilient cities 2019).
- Smart Cities Council connect 20 companies leaders in construction, technology and industrial design and universities as advisors to support local governments. They give guidance and financing to improve livability and sustainability (Smart Cities Council 2019).
- The 100,000 Opportunities Initiative from US supported by 50 companies has the aim to connect 5.5 million young people who are not in education or work with jobs (100k Opportunities Initiative 2020).

Multi-stakeholders initiatives in terms of education:
- The Global Partnership for Education (Global Partnership for Education 2020).
- Strive partnership to improve education throughout Cincinnati and Kentucky (Strive Partnership 2020).
- "Design Thinking in STEM" is an education project that combines STEM education, design-based education and the challenges addressed by the SDGs (Siemens Stiftung 2019).

2.3. Stakeholders within a multi-stakeholder partnership

Each stakeholder within a partnership has its own way to embrace sustainability issues. For the purpose of this paper, we focus on multi-stakeholder partnership between business, NGOs, and academia for sustainable development.

Stakeholder's ways to embrace sustainability:

- **Business** leaders have recognized that sustainability can serve as a long-term competitive advantage for the future of the company and also are becoming aware of the dangers and risks if they do not integrate and implement sustainability (Magala 2012).

According to the literature, several companies integrate sustainability management using the strategic corporate sustainability or Corporate Social Responsibility (CSR) approach (Kramer 2006) and the three interrelated management levels of the company; the normative level; strategic level; and operational level (Baumgartner 2014). Moreover, companies are implementing sustainability management through "Sustainability implementation" or the "Sustainability integration". Sustainability implementation refers to the introduction of sustainability management activities, routines, and structures in a company to achieve social, environmental, and economic goals (Windolph 2014). On the other hand, sustainability integration is used to refer to the integration of sustainability into all activities and company's core business (Louche 2016).

- **NGOs** exist in the civil sector, working towards pursuing particular social or environmental missions. The distinctions between NGOs, the public and private sector are becoming increasingly blurred (Heap 2000). NGOs has been forced to apply new ways of thinking to fulfill their mission due to issues such as globalization, technological advances, and increased business power facing a reduction in the power of nations. Both issues, come as a result of NGOs willing to collaborate and engage with businesses in pursuit of common goals (Keshishian 2009), rather than confront firms (Googins 2000). This new collaborative and engagement approach with business have succeed with the result of businesses taking voluntary actions to address environmental and social issues (London, 2001).

- **Academia** is dealing with the integration of sustainability into curricula with topics of sustainable development, corporate sustainability, social responsibility, leadership, sustainable entrepreneurship, as well as soft-skills related such as mentorship program, personal development and team building (Osiemo 2012).Universities and business schools have taken the initiative to increase their research and teaching activities in SDGs (AAU 2020), CSR and sustainability management in the last few years and educated most effectively future managers to become change agents for corporate sustainability (Wu 2010).

Stakeholder's drivers and motivations for joining or initiating a multi-stakeholders partnership:

- **NGOs** in a partnership can provide expertise, general awareness on specific issues, monitor the implementation of the project, help to ensure transparency and promote community participation (BASD 2004). They also can provide legitimacy, evidence-based narrative and contribute market knowledge (Googins 2000). On the other hand, NGO partners are looking for resources and projects that are structured in socially and environmentally responsible ways (Esben Rahbek 2013).

- **Business** in a partnership can provide technical knowledge, technological innovations, skills and experience in a specific sector. They also can provide financial and human resources to address social and environmental problems (Marco Albani 2014). On the other hand, companies partners are looking for improve their reputation and legitimacy, impact their social and economic performance, strengthen their corporate images (Lehmann 2005), reduce their environmental footprint and improve their operational performance (Marco Albani 2014).

- **Academia** in a partnership can provide research, educational resources and know-how. They want to propose local solutions to the country's challenges on human rights, environment, labor and anti-corruption (UN Global Compact 2015). They can also provide innovative ideas with a new understanding of dynamic sustainability challenges and opportunities. Students can act as champions, change agents for sustainable development (Weybrecht 2015) and as an extended workforce for organizations with better prepared staff of students and researchers properly trained and equipped with the knowledge and skills to take on sustainability challenges. Moreover, academia can provide a neutral and solution-oriented environment to engage the various stakeholders, share information, move key resources and scale sustainability efforts (Weybrecht 2015). On the other hand, academia partners are looking for solve real problems, co-create solutions and learn from the process. They want to leverage and advance the core expertise areas of a university, understand the issues that organizations are facing and make curriculum adaption to prepare and educate more effectively students and future leaders (Weybrecht 2015).

Nowadays, universities are underused, they have a lot of capacity to generate new knowledge that can be used to solve real problems. In fact, universities are producing a lot of knowledge about climate change, but this knowledge rarely becomes practical. Moreover, universities are ideal HUBs to link theory with practice, educate future leaders and to give children and young people the skills and critical thinking needed to tackle complex problems such as the SDGs (Weybrecht 2015).

Moreover, young people and students are an important and untapped resource that can take roles and responsibilities within different sectors and stakeholders. Today, more than half of the world's population is currently under 30 years of age, this make millennials the biggest generation of young people the world has ever seen. This generation has the potential to change the course of history and lead the planet on a path to greater prosperity, peace and ultimately, sustainable development (SDSN Youth 2019). Research suggests that youth have the capacity to solve complex problems and lead the movement for change, advocate for social causes, volunteer and more readily able to adapt (Loni 2016). Therefore, in order to successfully achieve the Sustainable Development Goals, young people's imagination, creativity and idealism must be cultivated and used as a means. However, to harness the power of youth, firstly there is an urgent need to educate them about the importance of the SDGs and secondly to provide them with opportunities to implement these goals through local action (SDSN Youth 2019). Einstein said, "We cannot solve our problems with the same thinking used to create them" (SDSN Youth 2019). New knowledge and STEM education combined with the creative power and passions of youth, can be used to tackle the global challenges (SDSN Youth 2019).

Conclusion

All in all, STEM education is required to prepare children and youth to seek solutions to complex problems such as the challenges posed in the 2030 Sustainable Agenda and take sustainable actions at local and global level. STEM education in children and young people will form the foundation of the 21st century as it can guarantee a livable future for everyone by promoting problem solving, critical thinking, creativity, innovation, social skills and conscientious action (Siemens Stiftung 2019).

On the other hand, actions to achieve gender equality are required in STEM sector to build the necessary workforce of the future. Today gender inequality persists in STEM education sector, this disadvantages in education are translated into lack of access in the labor market for women.

Women and girls' empowerment are essential to expand economic growth and promote social and sustainable development (EIGE 2017). Fail in the inclusion of women in STEM education will be translated in lack of workforce in the future (Zuber 2018) as women and girls represent half of the world's population and therefore also half of its potential (UN 2019).

Equally important as STEM education and gender equality, is multi-stakeholders partnership and youth participation for the achievement of the internationally agreed development goals, included in the 2030 Agenda for Sustainable Development. Multi-stakeholders partnership, STEM education and youth will unleash the power required to make a system transformation. Youth has an untapped potential to change the course of history and to implement the Sustainable Development Goals using their capacity to solve complex problems, imagination, creativity and innovation (SDSN Youth 2019).

3. Research Design

This section presents the process of developing the thesis project. It reflects the goals, research design, theoretical approach, research strategy, data collection methods and validity and reliability of the study.

3.1　Thesis Goals

This report is a result of a collaboration between four stakeholders; Aalborg University (AAU), Siemens Gamesa Renewable Energy (SGRE), SDSN Youth and the author of this report. The report reflects the outcome of a collaborative process involving a wide range of programs, areas and levels within the AAU, SGRE company and SDSN Youth organization.

AAU areas involved: Urban Energy and Environmental Planning, Cities and Sustainability specialization
SGRE's areas involved: Health, Safety & Environment, Social Commitment and Human Resources.
SDSN Youth program and areas involved: Global Schools Program, Teachers Advocates Program, Communications area, Outreach area and Strategy area.

This collaboration allowed to gather data required to build a Multi-stakeholders partnership lifecycle to encourage girls and young women in take up STEM degrees, but also can be used to achieve other short- and long-term sustainable challenges.

The author of this report was part of the three organizations playing different roles in each of them:
Role in AAU: Master student in the MSc Urban, Energy and Environmental Planning, Cities and Sustainability specialization.
Role in SGRE: Working student in the HSE Corporate area.
Roles in SDSN Youth: Project Officer of the UN Sustainable Development Solutions Network, dedicated to the Global Schools Program.

A crucial part at the beginning of this thesis project was to align the goals of the different stakeholders involved in the development of this report. This report seeks to satisfy in the best way possible the requirements of the four stakeholders; Aalborg University, SGRE, SDSN Youth and the author of this report. Because stakeholders have different goals and ways to work, goals alignment was difficult, but prioritization of goals was essential to get a successful result. The next

section will outline the goals and desires of the four stakeholders and the "Reflection on the internship and student work" chapter reflects on the achieved goals.

Aalborg University Project Goals (Aalrbog University 2019)

Knowledge:
- Thorough knowledge of relevant theories and methods in relation to the chosen problem and can reflect on them
- Can describe the used theories so that the special characteristics of the theories are brought to light and in this way, document understanding of the possibilities and limitations of the used theories within the concerned field of problems
- Have knowledge of the scientific-theoretical and methodical embeddedness of the used theories and can reflect on them
- Have thorough knowledge of the research embeddedness of the chosen problem, including knowledge of the most important national and international research in the field

Skills:
- Can independently plan and carry through a project at a high professional level
- Can give an account of possible methods for solution of the problem formulation of the project, and describe and assess the suitability of the chosen method, including an account of chosen limitations and their importance to the results describe and assess the suitability of the chosen method, including an account of chosen limitations
- Can give an account of the relevance to the education of the chosen problem, including a precise account of the core of the problem and the professional context
- Can analyze and describe the chosen problem by using relevant concepts, theories and empirical investigations
- Can analyze and assess the results of empirical investigations, whether it is the student's own investigations or those of others, including an assessment of the importance of the investigation methods to the validity of the result
- Can point out relevant future strategies, possibilities of change and/or solution proposals
- Can impart knowledge of the problem to both professionals and non-professionals

Competences:
- Can form a synthesis between the professional problem, theoretical and empirical investigations and make a critical assessment of the synthesis formed and the other results of the project work
- Can independently, on the basis of the acquired problem, be part of interdisciplinary discussions and development work
- Can independently acquire the newest knowledge in the field and are on this background capable of continuously developing the professional skills and competences.

SGRE Project Goal
The initial thesis project plan was formulated based on the need for interventions aligned to the "Diversity & Work-Life Balance" strategic plan for the fiscal year 2019-2020 that has the objective of design and share a new and common concept of diversity, to truly embrace it through different specific and global initiatives focused especially on gender, culture, inclusion, and work-life balance in the first two years.

The "Diversity & Work-Life Balance" strategic plan has different programs, but this thesis project is particularly focus on the Program 5" Changing the face of engineering" that intends to encourage women to take up STEM degrees by partnering with elementary, middle and high schools to develop student programs and projects.

SDSN Youth Goals
The internship with SDSN Youth was formulated based on the idea to build a partnership between different sectors such as academia, business and NGOs that have a common goal of tackle long-term sustainable challenges, specifically SDG 4 – Quality Education.

The initial internship plan was formulated based on two main needs from SDSN Youth:
1. To onboard the teacher that are part of the Global Schools Program network.
2. To create a new strategy within the Global Schools Program to engage, guide and create a feedback loop with the teachers that are already part of the Global Schools Program network.

Both actions are aligned to the 2030 Sustainable Agenda. The Global Schools Program goals are:
- Increase the number of schools incorporated to the Global Schools Program network and include the SDGs on the school's curriculum.
- Increase the interaction between Global Schools Program staff, schools and teachers that are already part of the Global Schools Program network to understand their needs and develop materials to support them.
- Increase the interaction between the teachers that are already in the Educators forum of the Global Schools Program and encourage them to use his forum as a channel to share knowledge, experiences and ideas between them.
- Improve knowledge on methods, activities and materials that can be use by the teachers to teach SDGs and STEM topics and unleash the potential of children.
- Improve data collection methods to identify which activities work and which does not work.

Student Project Goals
- Perform action research in SGRE and SDSN Youth to understand how they work internally and in which way is feasible to build a partnership between them.
- Gain professional experience in a practical project related to multi-stakeholders partnership for sustainable development.
- Apply the theoretical knowledge from the 1st, 2nd and 3rd semester in a practical and complex context within two different organizations
- Master skills such as; time management, communication, teamwork, analysis, project management, critical thinking and problem solving.
- Gain an overview and compare the work scheme and environment in NGOs and business.
- Understand the link and common goals between companies and NGOs in terms of sustainability.
- Gain knowledge in terms of education, gender equality and partnership
- Add value to SGRE, SDSN Youth and AAU.
- Manage international and multi-stakeholders projects
- Apply the thesis report results to solve real complex problems

To understand how to build a multi-stakeholders partnership to push girls and young women in take up STEM degrees, the following research question was formulated:

How to build a multi- stakeholders partnership between business, NGOs and academia to encourage girls to take up STEM degrees in elementary and middle schools?

3.2   Project Structure

The thesis is divided in four parts, each part contains different chapters. Figure 1 outlines the parts and chapters of the report.
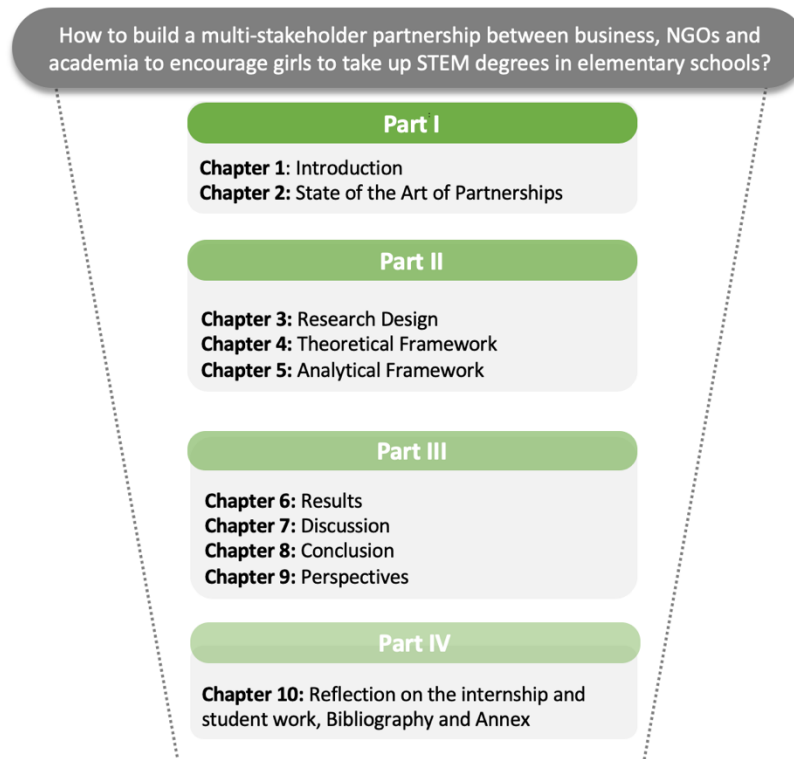
Figure 3 Project structure illustration (Own illustration)

3.3   Research Design

The following section contains a brief description of the parts (4) and chapters (10) that comprises this report. It also contains sub-questions, methods and sources of information used in each part.

Table 1 Overview of the parts, chapters, sub-questions and the data collection methods guiding the report.

Part	Chapter	Sub-questions	Data collection Methods/ Sources
Part I	**Chapter 1 – Introduction** - Outlines the background of the subject under study and relevant challenges - Identifies the core issue to be dealt with in the report	- What are the megatrends impacting the world? - Which SDGs need to be priority in the 2030 Agenda for Sustainable Development? - Why gender equality and STEM education are important to achieve the 2030 Agenda?	- Literature and Great literature review -Trainings - Interviews - Meetings
	Chapter 2- Partnerships for SDGs - State of the Art of partnership - Importance of partnerships in the sustainable development agenda - Types of partnerships	- What is the state of the art of partnerships and multi-stakeholders partnership? - What is the role of multi-stakeholder partnerships in the 2030 Sustainable Development Agenda?	

	- Multi-stakeholder partnership in practice - Stakeholders drivers and motivations	- What are the stakeholders drivers and motivations?	
Part II	**Chapter 3- Research Design** - Thesis objectives - Project structure - Research Design - Case studies - Data collection methods - Validity and reliability of the study	*Research Question:* How to build a multi-stakeholders partnership between business, NGOs and academia to encourage girls to take up STEM degrees in elementary and middle schools?	- Literature and Great literature review - International frameworks review -Trainings -Workshops -Interviews -Meetings
	Chapter 4- Theoretical Framework - Outline theories and definitions - Present the proposed theoretical framework to build a multi-stakeholder partnership model	-What are the available theories and practical models regarding partnerships, collective impact and system approach? - What are the principles to ensure a successful design and implementation of a partnership?	
	Chapter 5- Analytical Framework - Present the analytical framework that will be used to explore and analyze the three case studies	-What is the framework to analyze how stakeholders work internally and externally with partners and initiatives for sustainable development?	
Part III	**Chapter 6- Results** - Present the analysis of the three case studies (SGRE and SDSN Youth) - Presents data collected and sources - Explains empirical analysis of data collected using the analytical framework	- How organization work internally and externally with partners to develop initiatives aligned to the SDGs? - What are the methods and resources the organizations use to work towards the sustainable development agenda? - How they replicate, scale and sustain impact?	-Action research -Case studies -SGRE's internship -SGRE's internal documents review -SGRE'S interviews and meetings -SDSN's internship -SDSN's internal documents review -SDSN'S interviews and meetings
	Chapter 7, 8 & 9- Discussion, Conclusion and Perspectives - Discussion compare theories versus the empirical results from the three case studies. - Conclusion, answer the research question by presenting a strategic plan - Perspectives apply the multi-stakeholders partnership and best practices in a general partnership context for SDGs.	-What SGRE, SDSN Youth and AAU have in common talking about methods and resources to work on initiatives aligned to the SDGs? -What are the patterns between the three case studies and the best practices in each organization? -How the organizations are applying the theories reviewed in Chapter 4? -How the empirical results in Chapter 5 complement the multi-stakeholders partnership lifecycle developed? -What is the proposed strategic plan, based on the theories and best practices from the case studies, to build a multi-stakeholders partnership between SGRE, SDSN and AAU to encourage girls to take up STEM degrees in elementary schools??	

	Chapter 9- Perspectives - Perspectives apply the multi-stakeholders partnership and best practices in a general partnership context for SDGs.	-How this proposed multi-stakeholder partnership framework can be applied in different contexts?	
Part IV	Chapter 10- Reflection on the internship and student work, References and Annexes - Outline lessons learned, business as usual experiences, interaction with key employees from various areas, strategic thinking, data gathering process and interviews. - Limitations - Reflexions - Additional work performed during the thesis period that is not included in previews parts of this report - Annexes	-What are the lessons learned during the internships? -What is the additional work or documents that support this research?	- Author's reflections on the internship project experience

3.4 Case studies

This report explores how to build a multi-stakeholders partnership between business, NGOs and academia. Three case studies where selected to explore and analyze the patterns and best practices across them, each case represents a sector, SGRE represents the business sector, SDSN Youth represents the NGO sector and AAU represents the academia sector.

The three case studies were intensively examined using the proposed multi-stakeholders partnership lifecycle as analytical framework to evaluate and understand; how SGRE, SDSN Youth and AAU work internally with their working groups and sustainable initiatives; how they work and interact with external partners and communities towards sustainable initiatives; what are the methods they use to generate and implement interventions; how they manage and use their resources such as people, time and money in projects and interventions; and how they replicate, scale and sustain impact.

The data gathered from SGRE and SDSN Youth was obtained during the author's internship and student support in these organizations. As student support in SGRE from January to August 2020 and as intern in SDSN Youth from April to July 2020. Data gathered from AAU was obtained mainly during the master's degree from September 2018 to August 2020.The sources of the data gathered are from the business as usual operations and internal documents such as presentations, policies, procedures, strategic plans, action plans, onboarding trainings, toolkits, websites and internal communication platforms.

SGRE was selected as case study due to the internal programs and initiatives they want to develop towards the inclusion of women in STEM jobs. SDSN Youth was selected as case study, due to the relationship it has with the integration of the SDGs, especially SDG 4, in elementary and secondary schools. Additionally, because SDSN Youth work entirely with young people from 18 to 30 years old. AAU was selected due to the new megaprojects model they are using to connect young students with external partners in order to empower youth and solve real complex problems

using the PBL model. The author of this report was an integral part of the working groups of these organizations, thus information gathering was easily attainable.

Overall, the three organizations have common factors: they are using the SDGs as framework for their projects and interventions; they are interested in the SDG 4 and SDG 5; they are somehow related to the STEM field.

3.5   Data collection methods

This report was conducted using a mix of quantitative and qualitative methods the helped to shape the research and give answer to the research question but is mainly based on qualitative data. During the internship period with SGRE the author of this report was involved as a normal employee in SGRE with full access to internal platforms, documents and with the ability to contact relevant internal colleagues. During the internship period in SDSN Youth Global Schools Program, the author of this report was involved as a normal staff member with full access to internal platforms, documents, with the ability to contact relevant internal colleagues and act as a key member with full participation in the development of the new Teachers Advocates Handbook. During her period as student in Aalborg University, the author has the opportunity to learn: the PBL model; structure and deliverables during the semester project; relation with supervisors; develop projects in collaboration with external partners such as SGRE; use SDGs as framework; and use all the digital tools and platforms available.

Qualitative data was collected through literature reviews, internal documents, meetings, interviews, trainings, toolkits and workshops. On the other hand, quantitative data was collected through literature reviews, internal digital platforms and documents from the organizations. This section describes in more detail each of the qualitative and quantitative methods used.

Literature Review and Document Analysis: Various academic writings were taken into consideration in relation to the main concepts used in this report: SDGs, partnership, collaboration, gender equality, quality education, women in STEM, co-creation, complexity theory, multi-stakeholders, collective impact, system approach, corporate sustainability, design thinking, digitalization, STEM education, among others. The literature was found through various sources such as Aalborg University's online library, consultancy reports, websites and books.

On the other hand, data from the case studies was gathered from different sources from SGRE, SDSN Youth and AAU such as; internal websites, collaborative platforms, presentations, trainings, emails, meetings and interviews. Internal documents from the three organizations include: presentations, policies, procedures, strategic plans, action plans, toolkits, onboardings and annual reports. These documents were used to understand the current situation of the organizations and link their practices and motivations with the theoretical methods outlined in the literature.

Internal meetings, interviews, workshops and emails shared with key people in order to understand current situation, future strategic plans, targets and objectives of the organizations. Meetings and interviews played a central role to identify key areas and key contacts to gather qualitative and quantitative data to perform the analysis of the internal operations of the organizations. During the SGRE student position, various meetings were performed virtually with three different areas such as; Social Commitment, Global HR and Corporate Health, Safety & Environment area. On the other hand, during the SDSN Youth internship, various workshops and

meetings were performed virtually with Global Schools Program team members to co-create the content of a handbook for teachers in elementary and secondary schools. Useful information about the ongoing initiatives in the three organizations was shared in presentations, PDF documents and emails such as the megaproject plan from AAU.

Digital communication platforms such as: SGRE SharePoint, Yammer, SDSN Youth Drive, Workplace Forums and AAU website served as source of valuable qualitative and quantitative information for this report. Documents such as policies, procedures, strategic plans, action plans, toolkits, onboardings, annual reports, developed initiatives, KPIs, and impact stories were gathered from these sources.

Onboarding, trainings, lessons and physical tours: The author was part of a plant tour organized by SGRE for external attendees. The plant tour gave an overview of the mission and vision of the company, structure of the business, company footprint worldwide, goals, strategies and ongoing projects in regards of sustainability. The presentation also enabled a discuss with students and researchers from other countries on the actions that SGRE is performing in regards of renewable energy technology and STEM field.

Additionally, the author of this report attended a two-weeks online onboarding process conducted by SDSN Youth, a three-days training on Global Schools Program and a two-days training on how to onboard teachers in the SDSN Youth digital workplace platform. The purpose of this onboarding process and trainings was to learn about SDSN Youth, Global Schools Program, get familiarized to the digital tools available and how to educate teachers that are part of the SDSN Youth Network.

Finally, the author attended lessons in Aalborg University as part of her study plan in the MSc UEEP program in the specialization of Cities and Sustainability. The author attended a PBL course the first semester and a bunch of lessons in regard to SDGs and sustainable development during the first and second semester.

3.6   Validity and reliability of the study

The proposed multi-stakeholders partnership lifecycle in this report is aligned to three main theoretical models and five best practices found across three case studies. This multi-stakeholder partnership lifecycle was used as a framework by SDSN Youth Global Schools Program to develop a handbook for teachers. This handbook has the objective of guide teachers on how to integrate the SDGs in their schools. The handbook contains guidelines, activities and projects than can be developed in the classrooms in order to encourage students to learn about the SDGs in a more dynamic way with experiments, how-to videos and workshops using the learning by doing method. The handbook roll out will start in September 2020 in more than 900 schools worldwide (SDSN Youth - GSP 2020).

On the other hand, the proposed multi-stakeholders partnership lifecycle will be used as a framework by SGRE to develop a digital collaboration platform (SGRE 2020). This platform has the objective to connect SGRE with different universities around the world in order develop research projects and co-create innovative solutions to solve complex problems in terms of society, economy and environment. The pilot project of the digital platform will start in 2021 Q1 to connect SGRE Aalborg manufacturing plant with Aalborg University and SGRE Basque country manufacturing plants with local universities. The digital platform will support SGRE in its

missions of educate and motivate the future STEM workforce; improve employability among students in universities where SGRE has signed agreements; support R&D initiatives for social progress; and demonstrate SGRE's commitment to changing the face of engineering by hiring and empowering more women (SGRE 2020).

4. Theoretical Framework

This research is focused on multi-stakeholders partnerships for sustainable development, particularly focused on SDG 4 - Quality Education, SDG 5 - Gender Equality and SDG 17 – Partnerships for the Goals. The aim of this research is to understand how to build a multi-stakeholders partnership between; business, NGOs and academia to encourage girls to take up STEM degrees in elementary schools. The partnership model also needs to serve as a basis to solve other systemic goals in the short- and long- term.

There is no singular theory dealing with all aspects of multi-stakeholders partnerships for sustainable development. Therefore, in this section are presented the definitions and theories that the researcher consider the foundations of the 'how's of multi-stakeholders partnerships, and then form a new partnership lifecycle model that give the foundation of the analytical framework to analyze and understand three case studies, how they work internally and externally with partners and how they develop initiatives for sustainable development.

This section will begin by looking at well-established theories including complexity theory, theory of change, partnerships, multi-stakeholders partnerships, stakeholders theory, co-creation, collective impact and system approach as they are important to the existing multi-stakeholders partnership literature. The relevance of these theories to the thesis report differ. The firsts bunch of theories can explain the growing interest and motivations of stakeholders for engaging in multi-stakeholders partnership, while the remain theories deal with practical approaches to establish and maintain relations and to work upon a problem.

4.1 Theories and Definitions

Complexity theory
The SDGs are undoubtedly complex problems or so called "wicked" problems as they cannot be achieved through single-sector goals and strategies. Complexity theory refers to the study of complexity in general, complex problems and/or complex systems (ACFID 2015).

Complex problems do not have a specific definition, but can be defined by the following characteristics (Cabaj 2006):
- They are everyone's problems; therefore, they have multiple responsibles
- There are different understandings of the problem, the reasons and solutions
- Everybody's knowledge is incomplete and interests from the responsible can be contradictory
- They have no boundaries and they affect a wide group or an entire sector
- They have no obvious single root cause or solution, and they have multiple possible approaches (Eggers 2015).

Research suggest that complex problems need:
- To be approached holistically. The most appropriate response is a system approach (Cabaj 2006).

- An integration and collaboration between the parts to see and understand different perspectives of the problem. Also, the working groups need to learn and adapt constantly. The solution to complex problems is not clear but the parts working upon have the expertise and knowledge to find it. The most appropriate response to this need is a partnership approach that convene, coordinate, manage and enables a continues learning process from multiple actors (Eggers 2015).
- To be approached by a "learn by doing" process, this means that interventions need to be tested. Experimentation and innovation are required to recognize patterns, test interventions and identify what works and what does not work to shift the patterns (Cabaj 2006).

Complex problems are within complex systems that have the characteristics of being open, influenced by external factor and always evolving and adapting. In complex systems big interventions can generate no change whereas little interventions can generate big change.

Partnership

The challenges posed in the Sustainable Development Goals (SDGs) require systemic changes and transformation that goes beyond the capabilities of individual actors, therefore, the best approach for organizations is to build partnerships. Transformation cannot be achieved through existing ways of working, thus new ways of working need to be explored, tested and adopted. There are four essential elements for transformational change (ACFID 2015):
- Working collaboratively
- Thinking systemically
- Reporting on impact
- Going beyond business as usual

Collaboration is often used interchangeably with concepts like partnership. (SKELCHER 2002). Partnership is "a collaborative relationship in which all participants agree to work together to achieve a common purpose or to undertake a specific task and to share risks, resources, competencies and benefits, with reciprocal obligations and mutual accountability for outcomes" (J. Nelson 2002). True partnership is about leveraging the combined strengths of each partner to achieve a level of impact that could not be accomplished independently (KPMG and IDAS 2016).

For the success of the partnership is required to set a clear objective from the beginning and define success as more than financial. This means that partnership need to emphasize transformation over transactional to achieve the ambitious visions of the SDGs and create the impact required for substantial change. Transformational goes from share risks and decisions-making power with the partners to the achievement of sustained impact, scale-up process and change across sectors and locations by addressing systemic issues (KPMG and IDAS 2016).

Partnership for sustainable development

Partnership is a general term, but in this paper the focus will be on partnership for sustainable development. Partnerships have been promoted by companies, international agencies and NGOs as the most effective way of achieving sustainable development (Scott. 2009). Today, multi-stakeholders are innovative organizational models with the potential to offer new solutions to complex social and environmental problems (Austin 2000).

Partnership for sustainable development is "defined as collaborative arrangements in which actors from two or more spheres of society (state, market and/or civil) are involved in a non-hierarchical

process, and through which these actors strive for a sustainability goal" (Van Huijstee MM 2007). In other words, partnerships for sustainable development is a process in which actors from various sectors build new relationships, either between public and private actors or by private actors exclusively to create a more sustainable management practice. They are self-organizing and coordinating alliances, their commitment is often directed to solve societal problems. Within partnerships, hierarchy is replaced by more horizontal relationships. The partners aim to develop an environmentally friendly and economically profitable opportunity to change the market's modus operandi in a more sustainable way through a new management practice.

Stakeholders theory

According to the stakeholder theory, collaborating with stakeholders through partnerships can be considered a beneficial approach for information and knowledge exchange (Freeman 1984). The stakeholder theory is an organizational management theory that explain the increased interest in collaboration in partnerships but falls short to explain what can be expected by entering in a partnership. According to Freeman, the success of the organization depends on the continued management of the organization's relationships with its stakeholders (Freeman 1984) and stakeholder engagement is considered a recurring an important component in addressing CSR issues (Dahlsrud 2008).

A stakeholder is defined as "any group or individual who can affect or is affected by the achievements of the company's objectives" (Freeman 1984). Stakeholders may include customers, employees, suppliers, competitors, regulators, companies, governments, donors, investors, NGOs, producer associations, academic and research institutions and other groups. Stakeholder power refers to the ability to use resources to make an event happen (Freeman 1984).

Multi-stakeholders partnership

As presented before, there are five collaborative pathways to scale levels of engagement and impact of partnership towards sustainable development. However, this research will be focused only in the multi-stakeholders partnership level.

"Multi-stakeholders partnership can be defined as collaboration among many actors across sectors to achieve more systemic change than any group could achieve on its own" (J. Nelson 2017). Actors can be companies, governments, donors, investors, non-governmental organizations (NGOs), trade unions, producer associations, academic and research institutions. They share a common goal of combining the resources, capabilities and interests. Also, they have informal networks, technology that enables open collaboration platforms, their own formal governance and accountability structures, and independent funds (J. Nelson 2017).

Sectors can be understood as "an array of actors and institutions linked by their formal, functional roles or area of work" (Kuruvilla 2018), the sectors can include public and private entities. Moreover, multisectoral collaboration is where multiple sectors and stakeholders intentionally collaborate to develop joint programs and achieve shared outcomes towards sustainable development (Kuruvilla 2018).

Co-creation

Sustainable Development represent a complex problem that has multiple stakeholders, a co-creation approach can be an effective way to unlock solutions (D. Eggers 2019). The co-creation

approach within a partnership is when stakeholders share responsibility for the problem and together develop a process for solving it (D. Eggers 2019).

Collective impact and system approach

Multi-stakeholders partnerships requires more than collaboration. It can be strengthened with approaches as systems thinking and collective impact to tackle the complex problems as the SDGs, achieve large-scale impact, systemic change and drive transformation (ACFID 2015). These approaches will help to identify the interactions between different parts of a system (a city, a society, a sector), understand the outcomes of different actions, decisions and allow informed choices. Also, they help to ensure that the outcome of the partnership is more than just the sum of the parts (ACFID 2015).

Collective impact, also known as community coalitions, is a practice-based framework focused on long term solutions and large-scale social change. Collective impact is defined as "the commitment of a group of important actors from different sectors to a common agenda, for solving a specific social problem, using a structured form of collaboration" (J. K. Kramer 2011). This approach is effective when the engagement and collaboration of various actors is required to achieve a common goal and tackle systematic barriers or challenges to solve a complex issue. Evidence of the effectiveness of this approach suggest progress in terms to solve complex social problems (Ridzi 2018).

The shift from isolated impact to collective impact requires a system approach that will provide a new set of skills and resources to assemble, coordinate and manage the relationships between actors and the progress toward shared objectives (Ridzi 2018). Also, system approach will help to identifies the root causes of the complex problems and interactions of the various actors involved in the collective impact (Ridzi 2018).

System change, system actions and system thinking theories fall into the system approach (Hassan 2014). A system is "a set of things—people, cells, molecules or whatever — interconnected in such a way that they produce their own pattern of behavior over time." (Meadows 2008). Systemic change is "any attempt at changing a system, no matter what it is". System actions are "responses attempting to address the causal drivers of a situations and not simply operating at the level of symptoms" (Hassan 2014). On the other hand, systems thinking approach helps to achieve system change by identifies the interactions between different parts of a system (a city, a society, a sector) and ensures they deliver more than the sum of the parts (Draper 2016). Systems thinking approach helps to start, design and sustain a strategic and structured collaborative response to achieve system change and transformation.

The most significant system change is a paradigm shift from one underpinning model to another, this means change the way people think and see things by changing the set of assumptions, perspectives or views about how the world works (ACFID 2015). Paradigms are the patterns with which we organize our thoughts and make sense of the world, which informs how we act and how structures, flows, rules, goals arise (ACFID 2015).

Thus, collective impact and system approach can enrich multi-stakeholders partnership framework in order to achieve a common goal, build long term solutions that addresses root causes to solve complex problems and achieve large-scale social change upon the sustainable agenda.

4.2   Theoretical and practical models

This section will present theoretical and practical frameworks of the theories presented above and the principles for the proper foundation and effective functioning all of them.

The three essential frameworks that are going to be presented are:
- Multi-stakeholders partnership lifecycle
- Collective impact
- System approach

Co-creation is embedded in some way or another along all of them.

The principles are divided in two sets of considerations:
- Consideration to build a partnership
- Considerations for a partnership's effective functioning

The three models and two set of principles were taken as a base to form a new multi-stakeholders partnership lifecycle model. This new model will be the base of the analytical framework in order to assess and understand the three case studies.

Multi-stakeholders partnership lifecycle framework

"Partnership is a process not a product, is an activity not an institution" (Darian Stibbe 2015).

Multi-stakeholders partnership lifecycle helps to understand how to select partners, how to make arrangements and how partnerships can be developed to ensure long-term impact and success (Seitanidi MM 2009). It is a process always evolving and needs to be flexible to manage the evolution of the social and environmental context circumstances to be successful (Darian Stibbe 2015).

The cross-sector collaboration framework developed by The Partnering Initiative and United Nations Department of Economic and Social Affairs in (2015) is divided into four main phases and twelve subphases:

  I.   "Scoping and Building" phase includes the scoping, identification building and planning subphases. The first phase includes a list of important actions to start a successful partnership such as understand and align interest of the partners; common vision, mission and objectives; agree roles and responsibilities; structure the partnership and sign of the partnership agreement.
 II.   "Managing and Maintaining" phase includes the structure; mobilize and deliver subphases.
III.   "Reviewing and Revising" phase includes measure, review, and revise subphases.
IV.   "Sustaining Outcomes" phase includes scaling up and moving on subphases.

The partnership lifecycle framework developed by KPMG and IDAS in (2016) involves a continue learning process with many feedback loops from all partners involved. The process has 4 major phases, each phase is composed by various actions as described below (KPMG and IDAS 2016):

  I. "Identify and Develop". This phase includes identify and select partners; create a map of the resources required and available; and communication channels.
 II. "Implementing and Managing". Sign a partnership Agreement; ensure common understanding of the objectives; co-design and co-create interventions; design a governance framework, document meetings and measure progress.
III. "Assessing and Revising". Monitor and evaluate progress and partners; develop and share progress reports; and make changes and correction based on results.
IV. "Sustaining impact". Invite new and remove old partners based on an assessment; share knowledge and lessons learned; scale up actions and interventions based on lessons learned.

Collective impact framework

To create collective impact is required to bringing together a broader net of stakeholders and institutions across various sectors including NGOs, business, academia and citizens to working together towards a common goal and solve complex social problems (Ridzi 2018).

Collective impact initiatives involve a centralized infrastructure, dedicated staff and a structured process that leads to achieve a successful collective impact to solve complex problems (J. K. Kramer 2011). The collective impact framework developed by John Kania and Mark Kramer in (2011) involves the following five components:

  I. "Build a common agenda". Define goals and measures, rather than activities. Define a shared vision for change, common understanding of the problem and a jointly approach to solve it through agreed actions by all participants in order to define cross-sector initiatives.
 II. "Define a shared measurement system": Agree on the ways of success, indicators to measure and report; gather all partners in workshops to analyze the results and share knowledge; and enable participants to learn from each other's. Share the results across multiple organizations enables to spot patterns, find solutions, and implement them.
III. "Mutually reinforcing activities". This component refers to have a continuous improvement process based on the learnings. Collective impact is a trial and error cycle, always prototyping and testing to see what functions and what does not. A key component is that partners support and encourage each other and they use their strengths to perform their roles and activities.
IV. "Continuous communication and engagement". This component refers to the development of trust among patterns by meeting regularly to recognize and appreciate their common motivations, to learn from each other's and solve problems together.
 V. "Backbone as the support organization". This component refers to the need of a separate organization dedicated to coordinate and support. The backbone organization functions as data manager, facilitator, balancing the tension, coordinating, establishing collective ownership, maintaining accountability and communication. It follows the principle of adaptive leadership to create a sense of urgency, focus people's attention, apply pressure to stakeholders, frame issues, opportunities and difficulties and mediate conflict among stakeholders.

System approach framework

Collective impact requires a system approach to understand the situation, experience and views from various organizations, identify the root causes of complex problems, identify key actors to develop interventions and their interactions (Rob Abercrombie 2015).

> "There is no single correct way to do systems change" (ACFID 2015).

System change approach do not have a hard and fast methodology as it need to keep flexible in order to deal with complex problems. System change approach consists of six key principles to guide change agents (Rob Abercrombie 2015):

I. "Understand needs and asses". This principle refers to understand the problems, who is affected and how the problem affects in a given context.
II. "Engage multiple actors." This principle refers to search for potential advocates and the engagement of various stakeholders, not only beneficiaries.
III. "Map the systems" to understand how a system operates, how to change it, define the boundary for the system, identify causes and effects, key actors and interaction between them. There is no right way of mapping a system, the map tells the story of why there needs to be change.
IV. "Work with others". Positive system change relies on multiple actors as they have different views and opinions that contribute to a more holistic understanding and system thinking.
V. "Distribute leadership". Power and responsibility need to be distributed throughout organizations and networks as suggested in the new models of leadership. Give more responsibility and power to frontline staff who understand the situation best, in this way they can take quick decisions in response to the needs. "Distributed leadership is necessary so the whole team becomes accountable for success or failure" (Hassan 2014).
VI. "Foster a learning culture". Learning means to understand what is working and what is not working and using that knowledge to adapt and improve. Learning process consist on plan, do, review and reflect. In a learning culture there is no failure, just learning.

Suggestions to foster a learning culture based on the literature (Rob Abercrombie 2015):
- Encourage ideas generation, experimentation, and problem-solving approach
- Learn from what others are doing to avoid invent something yourself
- Reflect on what can be learn and how to adapt
- Adapt based on what is learnt

Considerations to build a partnership
There are two preliminary steps that ensures a proper foundation and implementation of successful partnerships and both steps can be manage by the backbone organization (UN Global Compact 2013):

I. "Understand needs and asses". This principle refers to understand the problems, who is affected and how the problem affects in a given context.
II. "Creating an enabling environment". This principle refers to the development of a strategy and guidelines. Provide training to ensure that partners have the necessary expertise and knowledge for implement the strategy and a continues learning process from the results (UN Global Compact 2013). Define partnership's desired outcomes. Define the common goals that are intended to reach and how it can reach them. A partnership for sustainable development can aim to achieve one or more SDGs (UN Global Compact 2013).

Based on the handbook created by the United Nations Global Contact in (2013), each partnership is made up of the same seven building blocks that will determine the model of the partnership:

  I. "Composition": Choose a suitable sized organization for the partnership, such as multinational companies, small- and medium-sized enterprises, civil society organizations or governmental institution.
 II. "Roles": Each partner should take on a role in the partnership that reflects its comparative advantage and relates to its core competencies.
III. "Roadmap": Draft a roadmap for the partnership and define a timeframe for the partnership.
 IV. "Scope": Define a sphere of influence for the partnership such as local, regional or global.
  V. "Governance": Draft a formal or informal agreement to determine how the partnership will function. Choose management bodies, such as steering bodies and project teams. Multi-stakeholders partnership with regional or global scope addressing complex problems might create independent entities for governance such as the backbone organization.
 VI. "Financing": Decide how the costs of a partnership will be covered, for example by NGO's funds, funds from business partners or through external fundraising activities.
VII. "Monitoring & Evaluation": Ensure that performance of partners will be collected and analyzed, either internally or through external evaluations.

Considerations for partnership's effective functioning

According to a number of studies, the following set of key factors need to be considered for the proper functioning and effective multi-stakeholders partnership.

- Define the issue to work on and identify the goals in an early stage (KPMG and IDAS 2016).
- Build trust and mutual understanding, align participants expectations and create a shared vision, missions and goals (J. Nelson 2017). Set rules, define roles and responsibilities, assemble working groups and ensure effective communication and conflict resolution between the partners.
- Look for the support of the top-level leaders of an organization to demonstrate its alignment with the partnerships objective (KPMG and IDAS 2016) and to ensure resources and funding (J. Nelson 2017).
- Invest in a backbone organization with a dedicated and independent staff to support and coordinate the diverse partners and interventions (J. Nelson 2017).
- Design for sustainability and implement for success. Co-create a strategy and implement a plan to reach the objectives, ensure that interventions can be scalable and replicable (KPMG and IDAS 2016).
- Allocate the necessary resources (people, time and money) required to make the partnership successful. Ensure that all the partners have the resources to work (Weybrecht 2015), access to information, and that they are involved in the continue learning process, engagement and communication channels. Develop a network of people who are committed to the partnership's success (KPMG and IDAS 2016).
- Use the technology to set a communication strategy that ensures active communication between partners and across levels within organizations (Weybrecht 2015). The communication strategy needs include regular check-ins, meetings to evaluate progress, and scheduled follow-up. Ensure that the partners know the available communication channels to spread knowledge and lessons learnt (Weybrecht 2015). Provide to partners digital tools to open up opportunities such as teleworking, digital networking and e-learning (AXELOS 2018).
- Define common performance metrics and run periodical evaluations and reports that can be access by all partners so they can learn by doing (J. Nelson 2017).
- Engage, empower and recognize champions and agents within working groups (KPMG and IDAS 2016), celebrate success as a way to motivates and engage them (J. K. Kramer 2011).

All in all, two key components found across multi-stakeholders partnership, collective impact and system approach are the flow of information and the learn by doing culture. Both components will help the partnership to have a continuous communication and create feedback loops that will facilitate learn from other experiences, learn from results, exchange knowledge, understand the system, understand the needs and coordinate efforts. The continuous communication and feedback loops facilitate the conscious and integrative decision-making process to achieve the common goal and solve complex problems.

4.3   Proposed Multi-stakeholders Partnership Lifecycle Model

The next section will present the new Multi-Stakeholders Partnership Lifecycle (MSPL) model. The proposed model summarizes and synthesize higher level interpretive findings across the three essential models presented in the previous section (Multi-stakeholders partnerships; Collective impact; and System approach). This model is a combination of theoretical and practical methods that will function as a guideline to co-create and work in a partnership.
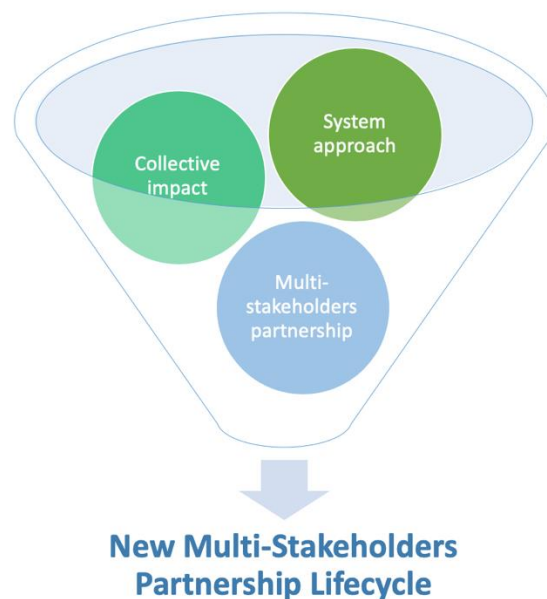
Figure 4 The three combined models that make up the New Multi-Stakeholders Partnership Lifecycle

This MSPL model leads to achieve specific sustainability goals by transformation pathways using collective impact and system approach and by designing and implementing interventions that will suit different contexts and SDGs. Also, this lifecycle model will serve as an analytical framework to evaluate what works and does not work in practice in the selected case studies that are presented in the Results part of this report.

The proposed lifecycle consists of six modules (Prepare; Design and Plan; Implement; Monitor and Report; Evaluate and Learn; and Sustain Impact) each of them includes different components. The modules are supported by three continuous processes that enables feedback loops (Trust; Educate and learn; and Communicate).
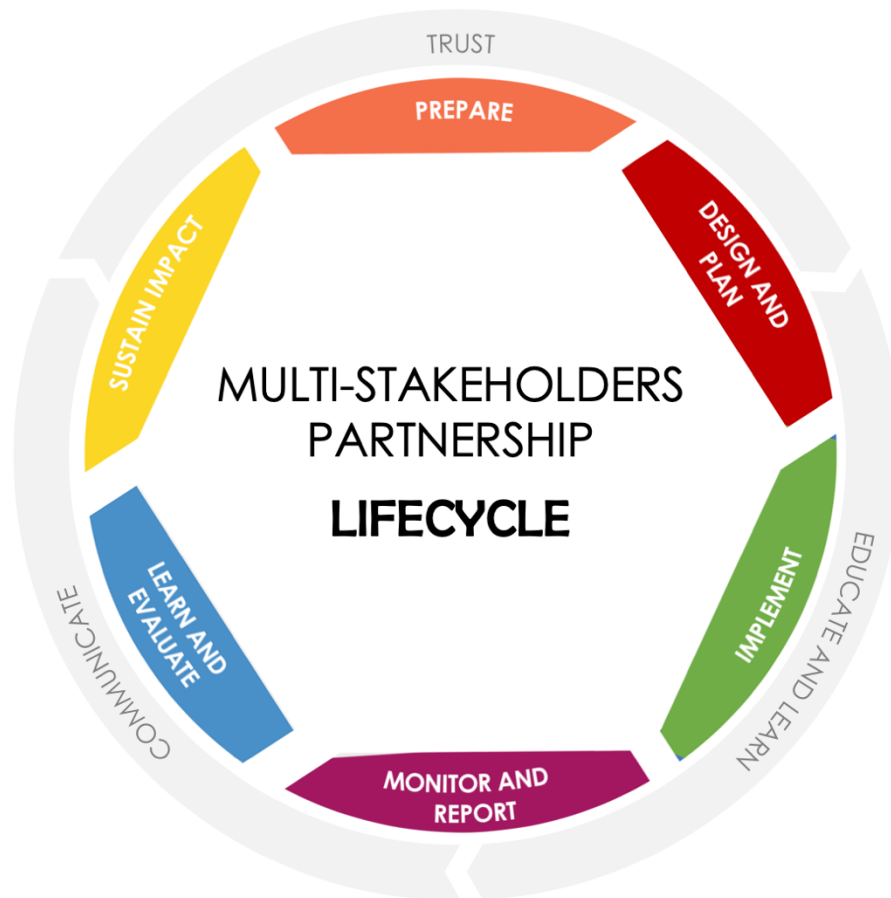
Figure 5 Proposed Multi-stakeholders partnership lifecycle model

The next section will explain each of the modules and components of the MSPL.

Continuous Processes of the multi-stakeholders partnership lifecycle:

Table 2 Continuous Process of the Multi-stakeholders Partnership Lifecycle

TRUST	EDUCATE & LEARN	COMMUNICATE
Build and maintain an atmosphere of mutual trust between the partners by ensuring the set of behaviors: - Talk straight - Demonstrate respect, loyalty - Transparency - Clarify and align expectations - Listen first - Keep commitments and deliver results	Continuous and active learning, engagement and motivation among the partners, Considering: a. Education for sustainability b. Skills and competences c. Learning by doing	Develop a clear communication and knowledge sharing strategy that ensures motivation among partners and a continuous flow of information internally and externally. Taking advantage of: - Digital platforms - Digital Collaboration Tools

b. Trust

Trust is "a function of the commitment expressed by one to another and the other's judgment of the likelihood of that commitment being upheld" (Iyer, 2003). Trust between the partners have various benefits such as facilitates learning and resolution process, increases information sharing,

and reduces the number of formal contracts and transaction costs. Thus, it significantly impacts the performance of partnerships (Weihe 2008).

Trust is an essential aspect for the prosperity of multi-stakeholders partnerships due to the need of commitment and interdependence between the partners (Googins 2000). Partners need to perceive that their own interests will be treated fairly, and that decisions will be made on the basis of objective evidence and the best possible solution to the problem, not to favor the priorities of one organization over another (KPMG and IDAS 2016).

Building trust is an enabling factor for successful partnering, it is continuous process that needs to be managed, maintained and supported by positive experiences, both internally and externally, throughout the whole partnering process (KPMG and IDAS 2016). To build trust in the complexity of multi-stakeholders partnership is required that partners feel comfortable and agrees to the rules of the game.

There is a set of behavior to build trust (Covey 2006):

- Talk straight	- Deliver results and get better
- Demonstrate respect and loyalty	- Clarify and align expectations
- Build diversity and dialogue	- Practice accountability
- Understand the drivers and motivations of each partner	- Listen first
	- Keep commitments
- Transparency	- Maintain trust

To maintain trust is necessary to have:
- Frequent meetings with honest conversations using shared language and listen to concerns (KPMG and IDAS 2016).
- Acknowledge and respect differences, listen actively to demonstrates genuine interest in a partner's concerns (KPMG and IDAS 2016).

c. Educate and Learn
Continuous learning and active learning process refers to the general and specific knowledge required along the partnership lifecycle. There are three key points within the active learning process in a partnership for sustainable development: Education for sustainability; Skills and competences; and Learning by doing.

i. Education for sustainability.
   The partnership requires in the first place educate champions, agents and leaders in sustainability topics to contribute to transforming unsustainable structures, processes and behavioral patterns into sustainable ones (Charlotte Hesselbarth 2013).

   Knowledge required (Charlotte Hesselbarth 2013):
   - Sustainable Development Agenda and principles of sustainable development
   - Sustainability terms, definitions, theories, concepts and tools
   - Principles and interconnectedness of social, environmental, and economic systems

- Best practices, standards, requirements and steps to implement, manage and scale sustainable systems
- Approaches to nature and sustainability
- Corporate sustainability
- Concepts of social global justice (e.g. Waddock, 2007)

ii. Soft skills and competences required (Charlotte Hesselbarth 2013):
Participants of multi-stakeholders partnership require new set of skills and competences to assemble, coordinate and manage relationships, interventions and progress toward shared objectives to achieve the common goal of the partnership and successfully contribute to sustainable development of organizations involved in partnership (Ridzi 2018).

Soft Skills: Can be described as a "set of competencies, behaviors, attitudes, personal qualities, motives and thought processes that enable people to perform well and achieve their goals, work well with others, and effectively navigate their environment." (YBI and Accenture 2019). Different studies suggest the following soft skills to thrive now and in the future:

- Systems thinking. The ability to analysis and understands the relationships within a complex system. Is a holistic process that requires to think systemically (YBI and Accenture 2019)
- Complex problem-solving. The ability to use various frameworks to solve complex sustainability problems and to promote and drive sustainable development (YBI and Accenture 2019)
- Co-design. Before named as creativity and innovation. Co-design is the ability to create solutions, products and services in collaboration with others while innovating. Co-create and innovation is to involve end users in the idea developing process using tools as online communities and workshops (YBI and Accenture 2019)
- Self-awareness. The ability to reflect on the personal role to contribute to the society, dealing with personal feelings and desires (YBI and Accenture 2019)
- Critical thinking and analysis. The ability to question their own view of the world, values, norms, practices and opinions (Charlotte Hesselbarth 2013).
- Reflective thinking. The ability to reflect of their own understanding and of complex and challenging issues (Charlotte Hesselbarth 2013).

Competences:
- Sustainability integration is the ability to integrate sustainability in the core business and core processes. This competence refers to the knowledge of the principles of sustainable development, methods and approaches to solve complex problems such as system thinking, and collaborative tools to create innovative solutions (Charlotte Hesselbarth 2013)
- Advanced communication. The ability to communicate in interdisciplinary and intercultural contexts. Also includes knowledge on digital tools (Charlotte Hesselbarth 2013).
- Design and direct a management system. Also include knowledge on project management and ability to build working groups (Charlotte Hesselbarth 2013).
- Anticipatory. The ability to understand and evaluate multiple future scenarios to co-create a vision for the future and assess risks and consequences of actions (SDSN Youth 2019).
- Normative. The ability to understand and reflect on the norms and values that underlie actions (SDSN Youth 2019).

- Strategic. The abilities to collectively develop and implement innovative actions that further afield (SDSN Youth 2019).
- Collaboration and Networking. The ability to identify partners and develop alliances, identify win-win scenarios, mediate and resolve conflicts using conflict solving and negotiation techniques. The ability to learn from others; to understand and respect the needs, perspectives and actions of others (empathy) (SDSN Youth 2019).
- Collaborative leadership. The ability to bring the appropriate people together to address the common objectives (Tamarack Institute 2020).
- Adaptive leadership - is the ability to create a sense of urgency and focus partners attention to navigate complex systems, develop strategies, presents opportunities as well as difficulties, and mediate conflict among stakeholders (Tamarack Institute 2020).

iii. Learning by doing

The continuous learning approach involves all partners to ensure learn from each other's strengths and learn from the outcomes of the work performed. Continuous learning strengthens the partnership as a whole, creating space to build a strong foundation based on trust (ANSA 2019). Continuous learning or Active Learning involves learning by doing, reflecting and anticipating by using learning loops to adjust strategies and transform paradigms (ANSA 2019).

d. Communicate

Siamak Sam Loni, the program director of the Sustainable Development Solutions Network (SDSN) says, "The most important thing to ensure that SDSN network is successful, is the effective flow of information" (SDSN Youth 2019).

Communication entails how the partners interact with each other, including the formality, frequency and level at which information exchange occurs (Iyer, 2003). Open and frequent communication is a key factor of success in a partnership (Googins 2000). Informal communication develops trust and cohesiveness and is more likely to foster relations within the partnership as it can convey more complete information quickly between partners (Iyer, 2003).

In the 21st century, collaboration have become much more global and traditional Face-to-Face Meetings are not always possible due to the different locations, travel costs and time. Nowadays, instead of having physical working groups located in one place, they are now more likely to be virtual teams that are geographically spread out (Stewart 2008). On the same way, partnership have become more global. Stakeholders are spread out in different locations and employees are working more and more from home (Resola 2020). This globalization brought the need for more technological advances for improving team collaboration in a virtual context (Stewart 2008).

Today, technology offers a variety of digital collaboration tools to help track virtual teams and activities, from the conceptualizing of an initial idea to the final results. Digital collaboration tools include email, digital calendar, file sharing, instant messaging, electronic data interchange (EDI), web conferencing, unified communication and enterprise project management software (Hildebrand 2007) which are critical for success with virtual teams.

Communication is vital to manage relationships, engage and motivate stakeholders. Timing is also critical, and communication often fails because it is actioned too late (Rowland 2018). Therefore, digital collaboration platforms that consolidate different digital tools become key for the success

of partnerships that have to communicate and collaborate with various partners and virtual teams in different locations and time zones (Finnegan 2020).

In order to make the most of the digital collaboration tools, is required to develop a clear communication and knowledge sharing strategy that ensures motivation among partners and a continuous flow of information internally and externally during the entire lifecycle of the partnership. The communication strategy needs to:
- Map the different communication tools and channels available and ensure everyone is familiarized with them to get the most out of the tools (J. K. Kramer 2011).
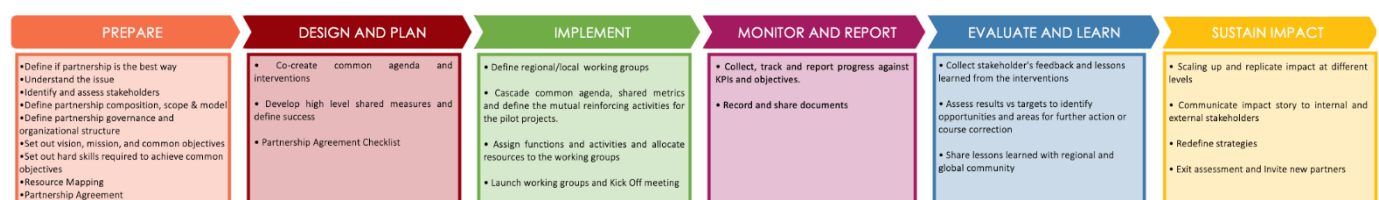- Set the point of contact that will clear questions and give feedback (UN Global Compact 2015).

In the early days of the partnership, face-to-face interaction is important. During the next phases, digital platforms can help to ensure the ongoing communication and flow of information (KPMG and IDAS 2016). Research in collective impact initiatives has shown that one of the best practices is to held monthly or even biweekly meetings among the Steering Committee and have an external facilitator to follow a structured agenda (J. K. Kramer 2011).

Successful partnerships that are focused on improve education such as the Higher Engineering Education Alliance Program (HEEAP) and Strive, meet and engage champions through a digital platform that gathers different web-based tools. The platform helps them to align resources for projects and track progress towards strategic objectives (KPMG and IDAS 2016). In particular, Strive partnership discovers that by using effectively the digital platform with web-based tools they can keep communication flowing among and within the partnership, learn and solve problems together.

The following section will describe the six modules of the proposed multi-stakeholders partnership lifecycle and their components.

The Six Modules of the Multi-stakeholders Partnership Lifecycle:

Table 3 Modules and Components of the Multi-stakeholders Partnership Lifecycle

PREPARE	DESIGN AND PLAN	IMPLEMENT	MONITOR AND REPORT	EVALUATE AND LEARN	SUSTAIN IMPACT
• Define if partnership is the best way • Understand the issue • Identify and assess stakeholders • Define partnership composition, scope & model • Define partnership governance and organizational structure • Set out vision, mission, and common objectives • Set out hard skills required to achieve common objectives • Resource Mapping • Partnership Agreement	• Co-create common agenda and interventions • Develop high level shared measures and define success • Partnership Agreement Checklist	• Define regional/local working groups • Cascade common agenda, shared metrics and define the mutual reinforcing activities for the pilot projects. • Assign functions and activities and allocate resources to the working groups • Launch working groups and Kick Off meeting	• Collect, track and report progress against KPIs and objectives. • Record and share documents	• Collect stakeholder's feedback and lessons learned from the interventions • Assess results vs targets to identify opportunities and areas for further action or course correction • Share lessons learned with regional and global community	• Scaling up and replicate impact at different levels • Communicate impact story to internal and external stakeholders • Redefine strategies • Exit assessment and Invite new partners

I. Prepare

a. Define if partnership is the best way
It is recommended that organization only consider a partnership approach if a particular goal cannot be achieved by one organization on its own and is necessary the engagement of partners (UN Global Compact 2013).

According to The Partnering Initiative and United Nations, partnerships should only happen whenever (Darian Stibbe 2015) there is an overlap of interest between organizations and/or there is a clear Collaborative Advantage.

Answer the question: Does partnership is the better way to achieve the goal?

b. Understand the issue

Use system approach tools to understand the issue and the context (KPMG and IDAS 2016).

Answer the questions: What is the partnership meant to achieve? Who are you trying to help?

c. Identify and assess stakeholders

Every organization brings a unique set of resources such as funding, technical expertise, credibility with government and access to intended beneficiaries. Acknowledging what each organization can and cannot achieve with its own resources is key to identifying gaps and selecting appropriate partners for the multi-stakeholder partnership (KPMG and IDAS 2016).

Answer the questions:
- How stakeholders embrace sustainability topics in their business as usual?
- What are the drivers that motivate stakeholders to engage in the partnering process?
- What is their internal mission, vision, strategy, projects and plans towards sustainable development?
- Investigate if partners have a history of unethical operations, poor performance, or limited leadership?
- What are the value proposition, strengths, weaknesses and resources that the organization can bring to the partnership? (FODA tool)

d. Define partnership composition, scope & model

Composition: Choose a suitable sized partner for the partnership, such as multinational companies, small-and medium-sized enterprises, civil society organizations, academia, start-ups, governmental institution and others (UN Global Compact 2013).

Scope: Define the sphere of influence of the partnership depending on the location of its target groups and beneficiaries, the scope can be local, regional or global (UN Global Compact 2013).

Model: The UN classify 6 different partnership models. Each model is described based on the seven UN building blocks (composition, roles, roadmap, scope, underlying agreements, financing, evaluation) described in the above section (UN Global Compact 2013).

i. Global implementation partnerships. Focus on implement actions to address global challenges and allows local implementation.
ii. Local implementation partnerships development projects in particular areas or regions.
iii. Corporate responsibility initiatives focus in changing business behavior, through leveraging their commitments to a specific development cause.
iv. Advocacy campaigns focus on behavioral changes of target groups by sensitizing individuals and encouraging them to engage in problem solving.
v. Resource mobilization partnerships focus exclusively on engaging companies to provide resources or to mobilize external resources.

vi. Innovation partnerships focus on utilize the expertise of business partners to develop and implement innovative products and services.

e. Define partnership governance and organizational structure

Partnership Governance refers to the regulations and guidelines defining rights and responsibilities of the partners and establishes management bodies, such as working groups and steering bodies. It determines how a partnership functions and how decisions are made (UN Global Compact 2013). Also, partners need to develop a flexible and adaptive governance that helps to deal with complexity, uncertainty and rapid change (ANSA 2019).

Principles of Adaptive governance (ANSA 2019):
- Clear governance and transparent equitable processes, responsibilities and accountabilities and a shared understanding of the needs for them.
- Feedback and reflective learning practices embedded in the decision-making process
- Trusted cooperation and mitigation of power imbalances in the entire lifecycle
- Flexibility and capacity to adapt and change while remaining accountable to goals and values

Partnership Structure refers to the location of roles and their hierarchy inside the partnership. It is composed by three groups; Steering Committee, Backbone organization and working groups.
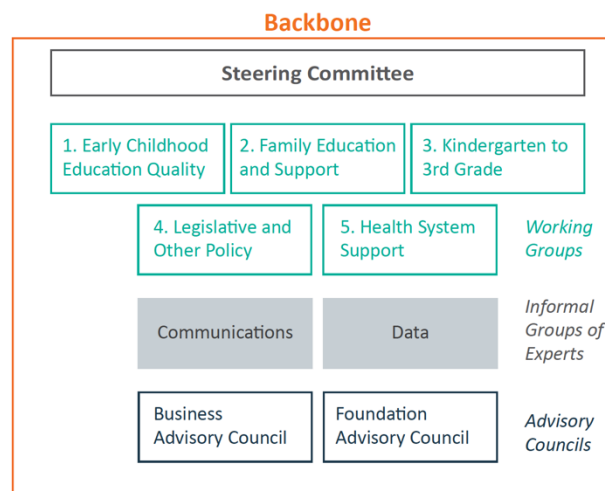
Figure 6 Example Structure of Collective Impact Effort (CIF 2014)

- **The Steering Committee** is at the highest level, is composed of higher-level representatives of all relevant partners, decision-makers, experts in the respective field and community members that can address tactical or strategic issues (CIF 2014).The Steering Committee gathers once or twice a year, to approve budgets, refine strategies, and to decide upon scaling-up or terminating partnerships (CIF 2014). Steering bodies usually meet more often if they have to deal with additional tactical or operational issues, especially to guide partnership implementation.

- **Working groups** are composed by members of the cross-sector partners and members representing affected populations. Together they design, align, and implement a set of interventions (CIF 2014).

- **The Backbone organization** is needed to foster the cross-sector communication, alignment and collaboration required to achieve a system change in the area of focus. The Backbone infrastructure needs to have knowledge in the sustainability field and its main roles are data manager, reporting, communications support, facilitator and manage administrative details needed (CIF 2014). A Backbone Organization can be a highly leveraged investment, with a modest annual budget can support a collective impact initiative of several hundred organizations, magnifying the impact of millions or even billions of dollars in existing funding (CIF 2014). They are not project management; backbones have six essential functions (CIF 2014):

- Guide vision and strategy. The Backbone works together with the Steering Committee to provide data, prioritize opportunities for action, and adapt to changing context (CIF 2014).
- Create a sense of urgency, build a common understanding of the problem and provide strategic guidance and support for the activities (CIF 2014).
- Convene partners to seek opportunities for alignment. Coordinate and facilitate communication and collaboration between partners and manage external communication (CIF 2014).
- Establish Shared Measurement and manage data collection among partners. Supports the learning and evaluation phase. Helps to collect, analyze, interpret, and report data (CIF 2014).
- Cultivating engagement and ownership between the Steering Committee, working groups and community members (CIF 2014).
- Mobilize and align funding for the initiative's sustainability, including recruiting volunteers or other non-monetary support for the initiative (CIF 2014).

The Steering Committee, Backbone organization and working groups are composed by members from each of the organizations that constitute the partnership. These members have different roles and responsibilities. Required roles within a multi-stakeholders partnership:

- **Champion or promotor**: Is anyone within an organization who acts as an advocate for the partnership and who believe in and want change. They promote the partnership using their personal and professional reputation (JSI 2016). Champions are deeply committed to the success of the partnership and often lead it from concept to implementation (KPMG and IDAS 2016).
- **Agents**: responsible for the change implementation activity including strategy, design, deployment, and evaluation of the change (Charlotte Hesselbarth 2013).
- **Donor:** If all partners are making a contribution to the partnership, all partners are 'donors'. There are situations where donors are entirely external to the partnership (Tennyson 2011).
- **Leaders/Managers:** Individuals appointed by the partnership to manage the partnership at the stage of project implementation or as relationship managers responsible for day-to-day management (Tennyson 2011).
- **Backbone/Facilitator:** A group of individuals, usually external to the partnership, appointed to manage a specific aspect of the partnering process (JSI 2016). The Backbone align the interests and expectations of partners and integrate all partners into the decision-making process (JSI 2016).
- **Steering Committee:** A group of individuals composed of cross sector leaders, decision-makers, and community members who provide senior management support, expert advice, strategic direction, champion the effort, and align their own organization's work to the common agenda. The Steering Committee approves budgets, refine strategies, and decide upon scaling-up or terminating partnerships (CIF 2014).

f. Set out vision, mission, and common objectives
The Steering Committee will define the vision and mission of the partnership. It will also define the collaborative advantage, agree on the definition of success and define the common objectives and desired outcomes (UN Global Compact 2013) that the partnership wants to achieve. Typically, partnerships for sustainable development aim to encourage change in behavior of individuals, businesses or policymakers.

Partners need to explore the mutual benefit of collaboration, how they can work together, and a collaborative advantage that captures the various parties opportunities and risks that they will take up. Collaborative advantage is "to gain real advantage from collaboration, something has to be achieved that could not have been achieved by any one of the partners acting alone but is in their interest." (Glasbergen 2010).

The partners assessment will present the drivers and motivations of each partner to participate in a partnership. This information will help the Steering Committee to define the collaborative advantage. To ensure that the interests of a partner are considered, the Steering Committee need to have representatives of each of the sectors. This will build trust and give a sense of fairness, which is the sense of balance in the distribution of risks, benefits and costs among the partners (Austin 2000).

g. Set out hard skills required to achieve common objectives
The Sustainable Development Agenda results in multitude of challenges to the workforce that must continually build new hard skills to meet the demands of the future. To be successful now and in the future is needed to identify and develop new skills according to the goal and issue that the partnership wants to address (YBI and Accenture 2019).

h. Resource Mapping
It is important to map the partners roles and responsibilities, financial and human resources, to detect the gaps that need to be fulfilled to successfully implement the plan or to consider options to strategically recruit new talent and new funding sources (JSI 2016). Human resources, roles and responsibilities were explained in the previous module. Financial resources are going to be explained below.

Financial Resources:
Creating a suitable partnership budget for the partnership is a key step. The budget needs to be reliable and should contain all costs that may arise over a partnership's lifecycle and to specify how these costs can be covered (UN Global Compact 2013). The partnership agreement needs to clarify what to do with the leftover funds once a partnership reaches the termination.

Financial resources need to meet the minimum requirements such as salaries for practitioners, travel expenses or administrative costs. In this way, the partnership may seek funding from different sources such as foundations, public and private sector. Each type of funder may provide multiple types of funding that partnerships can aim to access (UN Global Compact 2015). Diversification of funds is key to maintain a sustainable and stable financial model.
Types of funding for partnerships (UN Global Compact 2015):

Table 4 Funders and the types of funding (UN Global Compact 2015)

	Business	Foundation	Public Sector
Most likely types of funding	• Annual contributions • Memberships • Earned income • In-kind & Pro-bono • Event sponsorship	• Grants • Special project support	• Grants • Special project support

i. Partnership Agreement

The partnership agreement needs to consolidate all the agreements up to this point of the partnership lifecycle. The partnership agreement and the supplementary documents express:

- The common interest of the partners
- Outline how partnership is administered,
- How activities will be coordinated
- How partners will deal with decision-making processes, monitoring and enforcement
- How partners communicate internally and externally
- Rules for the exit of partners and inclusion of new ones
- Causes for the end of the partnership and how the remaining resources will be divided.
- Sanctions for failing to comply goals and targets (Glasbergen 2010).

Agreements can either be formal or informal. Formal agreement is recommended as they are official documents that are signed by all relevant partners. They are legally binding, promote compliance and trust among partners, increase credibility towards external stakeholders, promote transparent decision-making and increase accountability (UN Global Compact 2013).

II. Design and Plan

a. Co-create common agenda and interventions

A common agenda is a common understanding between the partners for what they have agreed to do together (Born 2017). It has three primary purposes (Born 2017):

- Is a document that forms a common understanding of the problem and a shared vision for change.
- It presents the key goals and strategies that a partnership has agreed to work on together.
- It is a road map that specifies how the partners will work together, including budget and the governance model.

The common agenda considers risks, benefits and best practices examples. In a common agenda is not required more planning, rather a collective strategic thinking and commitment from the partners (Born 2017). Strategic thinking is a creative process helping everyone to get into the same page about what partners are going to do together, and then documenting the common commitment. To move from strategic planning to strategic thinking is required to build a common commitment, involves everyone who cares, foster curiosity, and broad engagement (Born 2017).

To develop a common agenda, is required to convene partners to discover, debate, and deliberate about the issue they are trying to improve. This conversation will help to think together and co-create (Born 2017). It is important to create the space for thinking together in order to discover collectively the change that is required to be (Born 2017).

b. Develop high level shared measures and define success

Accountability is a key factor for long-term partnerships success. Monitor and Evaluation framework help to evaluate partner actions and enable accountability that help to evaluate progress (KPMG and IDAS 2016), make sure the partners are working in the right way and the partnership is achieving its goals.

The Steering Committee may identify indicators that will inform the progress on their journey towards the common goals. There are two different types of Key Performance Indicators (KPIs) (JSI 2016): quantitative and qualitative. It is required also to define success. They are different paradigms and definitions of success at play and "there is no one truth" about what constitutes success in multisectoral collaboration (Kuruvilla 2018). The collaboration may define their successes across their results. Three components of success are evident and highlight a common view that multisectoral action is valuable:
- Contribution to the sustainable development goals, including benefits perceived by users
- Success within the collaboration talking about innovation, strength of relationships and incentives
- The scaling up and sustain impact of the intervention (Kuruvilla 2018)

c. Partnership Agreement Checklist
Ensure that the partnership agreement clearly defines the seven building blocks stipulated by the UN Partnership handbook (2013). If not, make Annex in order to include the missing points.
Checklist of building blocks:
 i. Composition: Choose partners
 ii. Roles: Define and allocate roles and responsibilities
 iii. Roadmap: Draft a roadmap divided in stages and timeframe for the partnership.
 iv. Scope: Define if partnership will be local, regional or global.
 v. Governance: Define governance and organizational structure.
 vi. Financing: Decide how the costs of a partnership will be covered
 vii. Monitoring & Evaluation (UN Global Compact 2013).

III. Implement

a. Define regional/local working groups
Each working group is composed by one leader and various members of the cross-sector partners that also represent the affected populations (CIF 2014). The leaders are involved in the co-creation of solutions. Ensure that leaders have the skills and competences presented in the educate and learn continuous process to successfully mobilizes employees (CIF 2014).

b. Cascade common agenda, shared metrics and define the mutual reinforcing activities for the pilot projects.
Once the partnership's agreement and a common agenda has been completed, the leaders must cascade the common agenda and agreements with their regional and local working groups in order to define a suitable pilot project for achieving the desired outcomes in practice (UN Global Compact 2013). A pilot phase can considerably reduce risk of failure.

To define the mutual reinforcing activities its necessary to engage and motivate the working groups leaders so they can understand the problem and guide working groups into a dialogue to think together and co-create possible solutions and specific programs and activities they will undertake to ensure that they are achieving their intended impact (JSI 2016).

c. Assign functions and activities and allocate resources to the working groups

Allocate human and financial resources to the working groups. Ensure that working groups take on roles that reflect their core competencies. Ensure they have the resources needed in terms of people, budget and time to perform their functions and activities (UN Global Compact 2013).

d. Launch working groups and Kick Off meeting to start the development of the project

The previous phases lay the foundation to launch the pilot project and set the kickoff meeting (D. Eggers 2019) to start the development of the project or activities appointed in the common agenda. The Backbone organization need to convene the Steering Committee and working group leaders for Kick Off meeting.

IV. Monitor and Report

a. Collect, track and report progress against KPIs and objectives

Monitoring and Report (M&R) activities comprise the collection of information on a partnership's performance and its analysis especially in comparison to key performance indicators which measure the achievement of goals (UN Global Compact 2013). The KPIs and objectives were identified during the Design and Plan stages. Monitoring happens on an ongoing basis attending physical or virtual meetings and with the KPIs dashboard. Working groups usually undertake monitoring themselves. The reporting is conducted at regular intervals such as every six months, one year or when an intervention is completed (UN Global Compact 2014).

b. Record and share documents

Ensure the collection and sharing of documents with all the partners so they can use these documents in the future to learn and improve from the outcomes. Activity records, meeting minutes and other documents created during the partnership process will help to identify gaps and opportunities to improve and change (UN Global Compact 2014).

V. Evaluate and Learn

a. Collect stakeholder's feedback and lessons learned from the interventions

Design and send out a simple survey to the Backbone Organization, Steering Committee, working group leaders and a number of members from the working groups to gather their comments. The survey may include questions related to:
- Degree of efficiency and support from the Steering Committee, Backbone organization and working group leaders
- Clarity on the goals and activities they need to perform
- Satisfaction degree on the roles and responsibilities performed
- Resource availability during the entire process
- Motivation degree to keep working
- Proposal for improvements
- Lessons learned

Feedback and lessons learned from the interventions will support the learning by doing process to identify gaps and acquire new learning, new needs, new mindset, and new skills. Therefore, implement new attitudes, new behaviors and new habits (JLL 2020).

b. Assess results vs targets to identify opportunities and areas for further action or course correction

It is required to collect and analyze the quantitative results from KPIs and qualitative comments from the survey to create a final report that. It is required to submit the final report in a regular basis to present the progress of the interventions to working groups leaders and Steering Committee. The report will help partners to identify the success or impact of the activities developed so far, valuable interventions within the plan that encourage continuous positive change and identify necessary changes that aim to improve performance, sustain and scale impact (UN Global Compact 2014). The final report will also consolidate the key lessons learned.

Partnerships should present the final report regardless of whether they are ultimately successful or not. The final report is the base of the learning process to make a course-correct when expected objectives are not met, look at stumbling blocks as learning opportunities, and adapt by doing changes in responsibilities, vision and resource allocation. It is important to focus on impact and lessons learned than pure activity (KPMG and IDAS 2016).

c. Share lessons learned with regional and global community

Share the final report with all the partners at local, regional and global level (KPMG and IDAS 2016) using the digital tools available. Also, it can be shared to external stakeholders to provide good practices for future partnerships as well as lessons learned for future interventions.

VI. Sustain Impact

a. Scaling up and replicate impact at different levels

The Steering Committee needs to take the final report as a base to decide which interventions to scale up and replicate. If the local pilot intervention was successful is time to consider the potential for scaling up at regional and global level and replicate interventions in new local areas (Darian Stibbe 2015). The final report also serves to identify gaps and integrate more partners in order to bring together more resources (Apurv Gupta 2018).

b. Communicate impact story to internal and external stakeholders

It is key to communicate successful interventions and their impact story with internal and external stakeholders to build support. The impact stories can be communicated via the final report and illustrative anecdotes (Apurv Gupta 2018).

c. Redefine strategies

The partnership journey is supported by the learning by doing process. Therefore, roles, responsibilities and resources of each of the partners, and how it will be structured are subject to change. The redefinition is an iterative process based on the KPI analysis, lessons learned, opportunities of change identified, feedback from stakeholders surveys, regulations and new challenges (Kuruvilla 2018).

d. Exit assessment and Invite new partners

Partners need to learn the art of exit the partnership if the objectives or interventions are not aligned with their organizational vision anymore. It is also important to consider the inclusion of new partners (KPMG and IDAS 2016). Rules and process for the exit and the inclusion of new partners

need to be included in the Partnership Agreement. Both, the exit and the inclusion of a partners need to be supported by an assessment.

A successful multi-stakeholders partnership can have a designated end date in mind (KPMG and IDAS 2016). The end of a partnership will be supported by the results or by the mutual decision of the partners. If the partnership comes to an end, it is important to recognize the key achievements and positive impact of the partnership (Apurv Gupta 2018).

5. Analytical Framework

This report uses as Analytical Framework the proposed MSPL model. The analytical framework will serve as a guide to evaluate and understand; how SGRE, SDSN Youth and AAU work internally with their working groups and sustainable initiatives; how they work and interact with external partners and communities towards sustainable initiatives; what are the methods they use to generate and implement interventions; how they manage and use their resources such as people, time and money in projects and interventions; and how they replicate, scale and sustain impact.
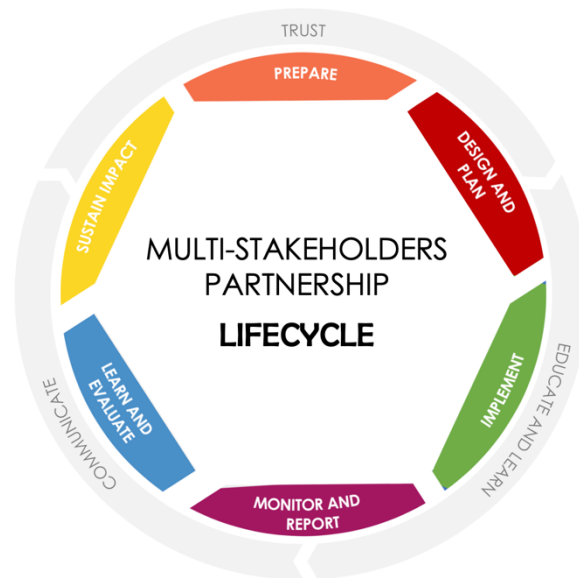
Figure 7 Proposed Multi-stakeholders partnership lifecycle model

The data gathered from the three case studies -SGRE, SDSN Youth and AAU- will help to clarify; if organizations use any of the approaches presented in the theoretical framework; if they apply the modules or components presented in the multi-stakeholders partnership lifecycle model; find out patterns between their practices; and how to improve the multi-stakeholders partnership lifecycle model with the methods used by the organizations in practice. The intention is to improve the MSPL model, which is based on theories, with methods and techniques used in practice.

The MSPL model consists of six modules (Prepare; Design and Plan; Implement; Monitor and Report; Learn and Evaluate; Sustain Impact) each of them includes different components. The modules are supported by three continuous processes with many feedback loops (Build and maintain trust; Educate and learn; Active communication).

Table 5 Continuous Processes, Modules and Components of the Multi-stakeholders Partnership Lifecycle

6. Results

This part of the report will present the main findings gathered from the three main stakeholders taken as case studies. The results will be presented in the following order; SGRE, SDSN Youth and AAU. This section follows the same structure of the analytical framework, this means that the information gathered from each stakeholder will be presented in the next order, three continuous processes (Trust, Educate and Learn and Communicate) and six modules (Prepare, Design & Plan, Implement, Monitor & Report, Evaluate & Learn and Sustain Impact).

6.1   Presentation of the organization

Siemens Gamesa Renewable Energy (SGRE)

Siemens Gamesa Renewable Energy (SGRE) was born in April 2017, with the merger of Gamesa Corporación Tecnológica and Siemens Wind Power. Nowadays, SGRE is a leading supplier of wind power solutions to customers all over the globe. It is committed to provide innovative and effective solutions for the energy challenges of tomorrow (Siemens Gamesa Renewable Energy 2018). The company is a key player in the renewable energy sector with installed products in more than 90 countries, with a total capacity base of over 98 GW and 24,453 employees (Siemens Gamesa Renewable Energy 2019). Siemens Gamesa has three business units;

Onshore wind power with 83 GW installed since 1980.
Offshore wind power with 15 GW installed since 1991.
Service with 60 GW maintained. SGRE offers maintenance and optimization of both SGRE wind turbines and third-party assets (Siemens Gamesa Renewable Energy 2019).
The company's mission and vision involve achieving commercial goals and meet sustainable obligations. The company perceive themselves as agents of change in the energy sector as they provide clean affordable energy and they want to keep seen as a model of change for customers and employees (Siemens Gamesa Renewable Energy 2018).

SGRE is aligned to the discourse about the active role that businesses need to take to address the SDGs. The company recognizes the SDGs as a global issue requiring urgent and collective action.

SGRE's commitment towards a responsible, diverse and inclusive sustainable development is embedded in their policies, master plans and strategies in the short- and long-term, such as;

SGRE Diversity and Inclusion Policy has the purpose of promote respect, equality and inclusion between the employees and ensure no discrimination by, gender, race, ideology, political opinions, marital status, nationality, religion or any other personal, physical or social condition (SGRE 2018). The policy reflects various principles, such as: Provide a work environment that promotes dignity and respect; Break down barriers to promote the professional development of women at the highest levels of the company; Develop a diversity and inclusion plan in order to ensure the implementation of this policy (SGRE 2018).

SGRE Global Diversity Strategy has the purpose of reflect the principles at the very basis of the employee cycle, from the attraction of new employees through the training process once they start their new job (SGRE 2019).

The Diversity & Work-Life Balance is a strategic plan for fiscal years 2019-20. The objective of this plan is to cultivate diversity as an impactful and competitive advantage SGRE, to truly embrace it through different specific and global initiatives focused especially on gender, culture, inclusion, and work-life balance (SGRE 2019). The plan has two phases:
- Phase 1 is about creating awareness
- Phase 2 is focused on taking action

The plan contains concrete programs and initiatives by Culture Change Makers (CCM), such as:
Program 5: Changing the face of engineering. "Not enough women become engineers and not enough of our engineers are women. Segregation narrows employment choices and reinforces gender stereotypes. Therefore, SGRE wants to attack women engineers" (SGRE 2019).
-Phase 1. Awareness: identify female engineers with potential to grow to a key expert position
-Phase 2. Action: Partnering with elementary and high schools to developed students programs and projects to encourage women to take up STEM degrees (SGRE 2019).

The Culture of Trust program is an important milestone to bring all employees together on the journey of creating a Culture of Trust. The program look for engage employees across the company to define and drive change. This program forms CCMs that function as ambassadors, located all over the world. They are responsible to create and implement the programs contained in the Diversity and Work-Life Balance strategic plan (SGRE 2019).

The SGRE case study will be focused on the Culture of Trust program that is composed by local ambassadors called Culture Change Makers. This program was selected because of its relationship with the Phase 2 of the Program 5: Changing the face of engineering. The CCMs that are located all over the world, are responsible to create and implement initiatives in order to partnering with elementary to developed students programs and projects to encourage women to take up STEM degrees.

6.2 Continuous Processes of the Multi-stakeholders Partnership Lifecycle – SGRE

TRUST	EDUCATE & LEARN	COMMUNICATE

Trust

SGRE looks for build and maintain an atmosphere of mutual trust between the employees with the Culture of Trust Program that has the objective of encourage and support the development of a shared company to create an atmosphere of trust, where everyone, feels that they can design the future, and can truly collaborate, make decisions, fail and learn together whilst enjoying ourselves. According to SGRE, trust generates a sense of belonging and sustainability in the future and should be the core of the company's culture (SGRE 2019).

SGRE Culture of Trust Program looks for "empowers people to lead the future" to give next generations the possibility of creating and building the future, thanks to green energy, by stopping climate change, and making energy more affordable (SGRE 2019).

Educate and Learn

Culture Change Makers (CCM) use a continuous learning or active learning process that starts once the new CCMs have been announced, there will be an onboarding period, where they will get a feeling of the role, before stepping into it on their own (SGRE 2019). The future CCM's will join the existing teams and therefore have an onboarding period of three months. But the learning process continues once the old CCMs pass on their knowledge and activities to the new Culture Change Makers. In this way the old CCMs share the lessons learnt and achievement to the new CCMs in order to sustain impact. that continues over the time they are assigned as CCM, this create space to build a strong foundation based on trust (SGRE 2019).

The onboarding training includes topics such as (SGRE 2019): Culture of Trust program objectives; The 4 pillars; Trust, Empowerment, Diversity and Continuous learning; and Role of being a Culture Change Maker.

Communicate

SGRE knows that communication is vital to manage relationships, engage and motivate CCMs around the globe, thus it has various digital communication channels available for employees. The Staying Connected is a knowledge sharing setup, established to ensure a strong communication and implementation of the Culture of Trust across the Business Units (BU) and to connect the Culture Change Makers with their organizational setup, at regional and global level (SGRE 2019).
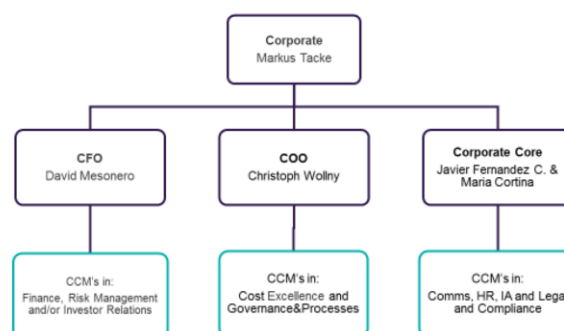

Figure 8 Overview of the Staying Connected setup - Corporate level (SGRE 2019)
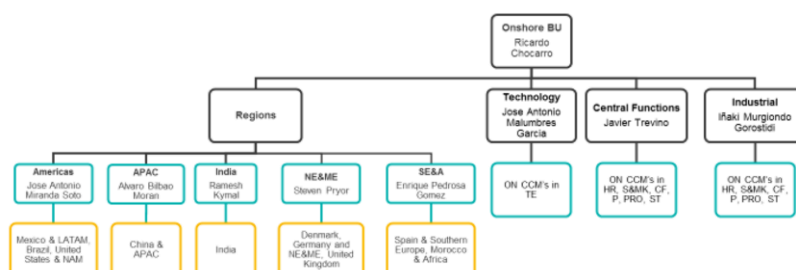
Communicate

Figure 9 Overview of the Staying Connected setup - Business Unit level (SGRE 2019)

Private communication channels are dedicated to the Culture Change Makers and the Core team.
- SharePoint site "Culture Change Makers" is a platform where the core team will provide updates, share tools & materials and information about ongoing activities to all CCMs. Flow of communication: from Core team to CCMs (SGRE 2019).
- Yammer "CCM" is a platform to share best practice and stay in touch across countries and regions. Flow of communication: 2-way communication between the CCMs and the Core team (SGRE 2019).

Public communication channels are dedicated to all SGRE employees, driven by the CCMs and the Core team.
- Sharepoint "Culture of Trust" is an informative site where all SGRE employees can find information and materials related to the Culture of Trust program. Information flow: from Core team to all SGRE employees (SGRE 2019).

- Yammer page "SGRE Culture Change Makers" is a platform for the CCMs to interact with all SGRE employees, to give updates about initiatives, events and everything that can contribute to get them involved in shaping a Culture of Trust (SGRE 2019).

6.3 The Six Modules of the Multi-stakeholders Partnership Lifecycle – SGRE

Prepare

Understand the issue
The framework used in the Culture of Trust program to generate and implement projects and initiatives are the 4 pillars and 14 global initiatives that in some way are aligned to the SDGs, mainly to the SDG 5 (SGRE 2019):

Figure 10 4 pillars and 14 global initiatives (SGRE 2019)

Define partnership composition, scope & model
The scope of the Culture of Trust program is global as the roll-out covered all SGRE facilities. This allows CCMs to generate and implement local initiatives to address complex problems at the global level (SGRE 2019). The model followed is "Local implementation", CCMs are arranged in local working groups focused on local target groups.

Prepare

Define partnership governance and organizational structure

The Culture of Trust program structure follows a regional / country approach, targeting all SGRE employees across all BU's and corporate functions. CCMs are arranged in local working groups per facility, then by country and ultimately by geographical area. Local working groups have the possibility of implement changes in their local context (SGRE 2019).

On the Culture of Trust global workshops, each working group within the country/region shall elect a Group lead and a Representative.
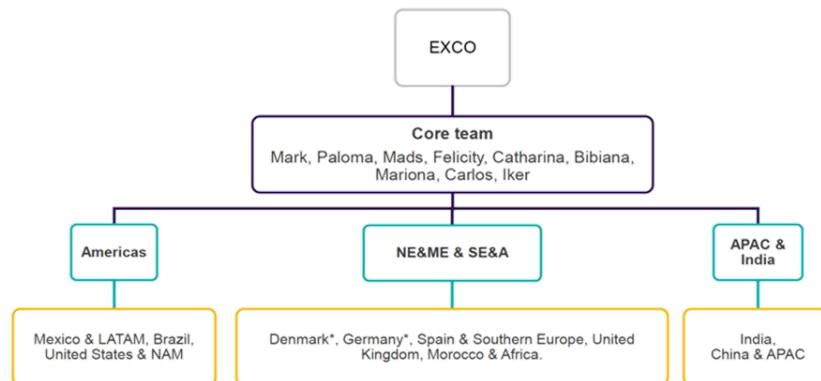
Figure 11 Country/Regional approach (SGRE 2019)

Set out vision, mission, and common objectives

SGRE Mission "We make real what matters - Clean energy for generations to come".
SGRE Vision "Be the global leader in the renewable energy industry driving the transition towards a sustainable world" (SGRE 2019).

Resource Mapping

Financial resources come from the EXCO that has approved a Culture of Trust budget and each BU will be supporting equally. The budget is to support the development of local initiatives and will be tracked by the country HR and will be equally spread across the working groups within the country/region. The monthly meetings, between CCM's and the assigned senior manager, is a good platform to discuss initiatives and request budget. There is no formal approval process of which types of initiatives that can be funded, but to track costs, all required budget should be requested to the Country HR head (SGRE 2019).

Design and Plan

Co-create common agenda and interventions

Each country/region have a plan for impact, that is developed during meetings/workshops where the working groups of CCMs brainstorm ideas for local and global initiatives (SGRE 2019).
- Local initiatives are concrete actions developed and implemented by the CCMs in their country/region.
- Global Initiatives are the local adaptation and implementation of the 14 global initiatives, mentioned earlier.

Develop high level shared measures and define success

The measures used in the program are two: highlights and lowlights. Highlights are the bright spots and the lowlights are the room for improvement (SGRE 2019). Successful activities become best practice.

Implement

Define regional/local working groups
- The group lead and the representative are elected on the Culture of Trust global workshops by the working groups (SGRE 2019).
- Culture Change Maker teams. The number of Culture Change Makers on each team may vary depending on the size of the country/region and is to be determined by the Country HR head. Generally, there will be around 20 Culture Change Makers on each team (SGRE 2019).
- Nomination of new Culture Change makers is done by the Country HR following the next criteria's: Someone that trusts and listens to others: Someone motivated, curious and inspiring; English speakers, to be able to join the workshops as they will be facilitated in English; Different levels and departments including middle layer managers, back office employees and site & manufacturing representatives; Diverse cultural background if possible; Someone proactive that shows dedication. Self-nominations for becoming a Culture Change Maker should be referred to the Country HR head (SGRE 2019).
- Rotation. A rotation will take place once a year, to give more employees the chance of joining the program and to maintain a high motivation among the teams (SGRE 2019). After his active period as former Culture Change Makers, it will then go into a more passive role as part of the alumni (SGRE 2019).

Cascade common agenda, shared metrics and define the mutual reinforcing activities for the pilot projects.
The flow of information was presented in the "Communicate" Continuous Processes. It has a top-down process.

Launch working groups and Kick Off meeting to start the development of the project
The launching of the working groups is at the beginning of each fiscal year, this means every October. It takes place after the nomination of the new Culture Change makers, group lead and the representatives and is coordinated by HR (SGRE 2019).

Monitor and Report

Collect, track and report progress against KPIs and objectives
Culture Change Maker teams will have regular meetings with senior management from their country/region. These meetings have the objective of give the Culture Change Makers feedback and support in their initiatives and ensure that their plan for impact is on track. The frequency needs to be agreed among the managers (SGRE 2019). Culture Change Maker team shall present on the monthly meetings with the senior manager two highlights and two lowlights (SGRE 2019).

Record and share documents
The CCMs also need to share the highlights, lowlights and best practices using the Yammer groups (SGRE 2019).

Evaluate and Learn

Collect and share stakeholder's feedback and lessons learned from the interventions
Valuable content such as best practices and lessons learnt need to be share with fellow CCMs using the Private Yammer groups (SGRE 2019).

Assess results vs targets to identify opportunities and areas for further action or course correction
The employee engagement survey will give a solid baseline to understand the status at the beginning. The following surveys will be to track the positive impact of both local and global initiatives and detect gaps for further action (SGRE 2019).

Scaling up and replicate impact at different levels
The CCMs strategy to scaling up is supported by the Staying Connected knowledge sharing setup, that has the objective of foster and support already existing initiatives to be replicated in other BUs and be scaled at different levels such as countries and regions (SGRE 2019).

The CCMs scaling up strategy has successful impact stories during 2019. Talking about the "Program 5: Changing the face of engineering", CCMs located in Brazil, US and Spain were involved in local initiatives such as "Girls Exploring STEM" and "Inspira STEAM". These are local mentoring programs that promotes and encourage girls to participate in STEM careers and breaking down the stereotypes that surround them. These programs teach girls the benefits of STEM, promote the study of scientific-technical careers in girls aged around 11 through awareness and guidance activities, taught by female professionals from the world of technology and science. In the 2019/2020 edition of the "Inspira STEAM" program, around 15 female CCMs from SGRE functioned as volunteers to talk about wind energy to girls, inspiring them to learn about STEM careers involving wind turbine design (SGRE 2020).

Communicate impact story to internal and external stakeholders
The Staying Connected knowledge sharing setup give Culture Change Makers the opportunity to share information internally in SGRE about ongoing initiatives from their country / regional teams and keep informed and involved the management level of their own BU (SGRE 2019).The initiatives developed during 2019/2020 were posted in the Sharepoint and Yammer platforms in order to communicate to internal stakeholders (SGRE 2020).

6.4   Presentation of the organization

Sustainable Development Solutions Network Youth (SDSN Youth)

The UN Sustainable Development Solutions Network, was launched in 2012 by the UN Secretary-General Ban Ki-moon to mobilize global scientific and technological expertise to promote practical problem solving for sustainable development, including the Sustainable Development Goals (SDGs). SDSN works with United Nations agencies, multilateral financing institutions, private sector and civil society. It reports to the UN Secretary General's office and is committed to support the implementation of the SDGs at local, national, and global level in its member institutions such as universities, research institutes, civil society organizations and knowledge centers around the world (SDSN Youth 2019).

SDSN Youth was launched in 2015 as an official youth initiative to empower youth globally to create sustainable development solutions. SDSN Youth educates young people about the SDGs and provide opportunities for them to create innovative solutions to address the world's biggest challenges (SDSN Youth 2019). SDSN Youth creates platforms for young people to connect, collaborate and integrate their ideas into projects for the implementation of the SDGs.

SDSN Youth's aims to "Empower youth globally to create sustainable solutions" with the following objectives (SDSN Youth 2019):
-   Educate young people about the SDGs and create pathways for achieving them.
-   Connect young people to exchange ideas, experiences and collaborate to achieve the SDGs.
-   Support young people in the creation and scaling of innovative solutions for the SDGs.

SDSN Youth has a variety of global programs that provides platforms to mobilize and educate young leaders on the SDGs. This program connect young change makers and leading practitioners

in sustainable development, the programs provide tools and resources to collaborate and contribute toward a more sustainable future (SDSN Youth 2019).

The SDG Students Program creates spaces on universities where students can learn, engage with, and take action on the SDGs. The program aims to encourage students to carry the importance of sustainability into their future work upon graduation. This is a semi-physical, semi-virtual HUB space hosted at local universities and using Facebook Workplace. HUB members can connect and interact with each other (SDSN Youth 2019).

Youth Solutions Program promotes and offers support to young professionals and students with innovative projects tackling the challenges around the SDGs. These projects range from educational programs, research, small businesses and advocacy campaigns. The program connects innovators with mentors to develop their solutions (SDSN Youth 2019).

The Local Pathways Fellowship is a 12-month training program and learning network that provides young innovators with the tools to design and implement local programs to sustainable development. The program brings together early career leaders, urban planners, researchers and activists from various cities around the world to exchange knowledge and ideas with leading urban development experts, organizers, and academics during this journey (SDSN Youth 2019).

The Global Schools Program (GPS) provides tools and resources for elementary and secondary teachers to educate their students on the SDGs. The program aims to transform learning environments globally and make schools the HUBs of education and leadership on the SDGs through educators. The program aims to enhance students to prioritize sustainable development in their daily life, education and professional careers (SDSN Youth 2019).

The SDSN Youth case study presented in this report will be focused on the Global Schools Program that encourage teachers, local young professionals and students to become SDGs advocates. This program was selected as case study due to the potential correlation that it has with the aim of this report to encourage girls to take up STEM degrees in elementary schools.

6.5 Continuous Processes of the Multi-stakeholders Partnership Lifecycle – SDSN Youth

TRUST	EDUCATE & LEARN	COMMUNICATE

Trust

SDSN Youth builds trust among their internal programs and external stakeholders through various aspects:

- With their recognition and legitimacy. SDSN is led by many global leaders, including Professor Jeffrey Sachs, Paul Polman, Professor Johan Rockström, Deputy Secretary-General Amina Mohammad, Laurence Tubiana and Dr. James Hansen, amongst many others (SDSN Youth 2019).
- Knowledge and expertise. SDSN is a network dedicated to mobilizing expertise, it is host to hundreds of leading global experts and academics in sustainable development and its projects are always informed by research and empirical evidence (SDSN Youth 2019).
- Networks and reach. SDSN is a global network of universities and campuses which span over 100 countries (SDSN Youth 2019).
- Multifaceted and holistic. Collaboration and partnerships is a core mandate for SDSN Youth but most important, SDSN Youth is action oriented with a focus on creating, supporting and scaling solutions (SDSN Youth 2019).

Educate and Learn

The GSP has a continuous and learning process. Every new staff member needs to accomplish a 3-week online onboarding training. The online onboarding contains important information before starting a position within the organization, it will give the new members a feeling of the role, before stepping into it on their own (SDSN Youth 2019).

Onboarding guide content:
Chapter 1. Introduction to the concept of sustainable development, evolution from Millennium Development Goals to SDGs, and discusses the importance of goal-based planning (SDSN Youth 2019).
Chapter 2. Practical guidance on how to get started with implementing the 2030 Agenda, how to measure current performance, convene a multi-stakeholder and prepare a roadmap for the design of SDG strategies (SDSN Youth 2019).
Chapter 3. Provides a set of tools to support the design of goal-based strategies to achieve the SDGs (SDSN Youth 2019). This chapter also includes external courses or content to strength skills such as; Skills For Success, Skills To Strengthen Both Your Personal And Professional Development, Develop Your Emotional Intelligence, Global Teams That Work And Remote Working, Leadership Skills For Managing Virtual Teams.

GSP has additional resources for continuous learning (SDSN Youth - GPS 2019):
- **edX.** An online platform that has various courses in terms of sustainable development.
- **The SDG Academy.** Creates free massive open online courses and educational materials on sustainable development and the Sustainable Development Goals.
- **SDG Zone.** Free online courses to learn about the SDGs and engage with the SDGs
- **The Australian Council for International Development (ACFID).** Course about Implementing the SDGs through the application of systems thinking and collaborative responses
- **ZOOM and webinars** with external experts invited to talk about mainstream sustainable topics

Communicate

The Global Schools Program is a global team where much of the work is performed with the use of digital software and tools Therefore, GSP uses a digital platform that functions as a HUB, providing a global community where all working groups within the network will come together to share. The platform gathers all the tools required by the partners to facilitate their day to day activities and achieve their common goals (SDSN Youth 2019). Every new member of the staff is invited to join some of these tools during the onboarding process depending on their position. These tools will better equip the members to provide efficient and effective work on all projects, communication.

Internal communication channels and tools are dedicated to the internal communication between SDSN Youth programs and internal working teams. These channels allow cross-program and cross-engagement for SDSN Youth and built a sense of community across the organization:

These are the tools that are primarily used (SDSN Youth - GPS 2019):
- Canva - design posters, images, graphics.
- Google Alerts - set up keywords and have Google send alerts delivered to your inbox.
- Breezy HR - used for recruitment of candidates.
- Northpass – to create online short private courses such as tutorials, inductions, and trainings.
- Mobilize - used for community engagement with SDSN universities.
- Workplace - used for internal communications inside SDSN Youth and all stakeholders such as member organizations, networks and programs.
- Workplace Forum – is a digital space where schools that are part of the SDSN network, can communicate and share their experiences, ideas and knowledge related to SDGs with other teachers.
- Trello - used for task management.
- MailChimp - used for creating and sending newsletters.
- Mail Merge - used for sending personalized emails to a large number of people at once.
- SDG Zone - simplified information about the SDGs.
- Grammarly - spell-check and grammar in real time within emails.
- Google Maps - used for creating online maps of organizations or projects.
- Boomerang - used for scheduling emails to go out later automatically
- Noun Project - used for downloading many icons for designing presentations and posters.

Communicate

- Loom - great for creating video tutorials that shows screen and face at the same time.
- Google meet and Blue jeans for meetings
- Google drive is a free cloud to create, share and storage documents

External communication channels dedicated for external communication with stakeholders such as business, organizations and schools. These channels have the ability to reach out to other SDSN Youth stakeholders on a unified platform and share their work (SDSN Youth - GPS 2019).
- Wix - used for creating simple websites.
- Mobilize - used for community engagement with SDSN universities.
- Workplace - used for internal communications inside SDSN Youth and all stakeholders such as member organizations, networks and programs.
- MailChimp - used for creating and sending newsletters.
- Google meet and Blue jeans for meetings.

6.6   The Six Modules of the Multi-stakeholders Partnership Lifecycle – SDSN Youth

PREPARE   DESIGN AND PLAN   IMPLEMENT

MONITOR AND REPORT   EVALUATE AND LEARN   SUSTAIN IMPACT

Prepare

Understand the issue
SDGs give direction and help individuals to focus on the most urgent issues and what really matters for our future. GSP uses the SDGs as framework to work in schools, its mainly focus is SDG 4 – Quality Education. The program aim to include the SDGs in the curriculum of elementary and secondary schools around the globe to enhance students to prioritize sustainable development in their daily life (SDSN Youth 2019).

Identify and assess stakeholders
GSP main stakeholders are advocates, teachers and schools. Advocates are youth talent between 18 to 30 years old, that are recruited by GSP staff to function as advocates for the program. The advocates serve as official Global Schools Advocates for 5 months. Advocates lead the local implementation of the Global Schools Program in their city, reaching out to schools and community of educators to help the Global Schools Program extend its reach globally and increase local implementation and encourage schools to act. Additionally, GSP staff is also composed by youth talents, all of them work as volunteers in the various administrative areas of the program (SDSN Youth - GSP 2019).

Define partnership composition, scope & model
The scope of the GSP is global, advocates work in their local communities reaching local schools but aligned with a global objective. Therefore, the model followed is "Local implementation". Advocates are arranged by country and they need to focus on local schools (SDSN Youth - GSP 2019). Advocates persuade schools to sign the pledge (not legally binding). By doing so, schools commit to the incorporation of the SDGs education into schools in their local communities.

Define partnership governance and organizational structure
SDSN Youth has a variety of global programs that are governed and guided by the SDSN Youth Executive, its purpose is to facilitate discussions and exchange information between programs and teams within the SDSN Youth Network, give direction and assist with the leadership and general promotion of SDSN Youth and to support the individual programs mission and needs (SDSN Youth 2019).

Project Teams operate globally and consist of one Project Leader and several Project Officers, they are incredibly diverse, often consisting of team members based in different parts of the world, with different background and expertise. The Project Teams are directly responsible for administering the day-to-day activities of SDSN Youth while managing the official Projects at the global level. The Project Teams are split into two; Admin Team and the Program Teams. The Admin Teams focus on the internal operations of SDSN Youth, consisting of the Communications, Operations, Networks, Events, Fundraising teams. The Program Teams consist of the Project Leads who run programs or activities: Global Schools Program, Local Pathways Program, Youth Solutions Program and the SDG Students Program (SDSN Youth 2019).

Roles:
- **Advisors**. Each program has a pull of Advisors that support, advise and work closely with the Project Leaders regarding team management and strategy (SDSN Youth 2019).
- **Global Project Leaders**. Each program within the SDSN Youth umbrella has a Governance team composed by Global Project, they report to SDSN Youth Executive (SDSN Youth 2019). They must be capable of maintaining team structure, onboarding new recruits effectively and efficiency, while ensuring that tasks are done with the highest standards (SDSN Youth 2019).
- **Global Project Officers.** They are a part of the global team and are tasked with serving in a particular portfolio depending on their preference, experiences, capabilities and skill sets. Project Officers are ultimately responsible for managing and administrating tasks allocated to them by their Project Leader They are divided in the following teams; Communications, Content, Outreach, Monitoring and Evaluation, Teachers MOOC, Advocates Program, Pilot projects and Teachers Advocates Program. The Global Project Officers report to the Global Project Leaders (SDSN Youth 2019).
- **Advocates.** They are youth talent that report directly to the Global Project Officers. They are arranged by country and are responsible for the local implementation. Their primary responsibilities include: Increase the program's reach by reaching out to schools and educators to present the program to educators in schools; and provide information for Schools to sign the pledge and join the Global Schools Educators' network (SDSN Youth 2019).
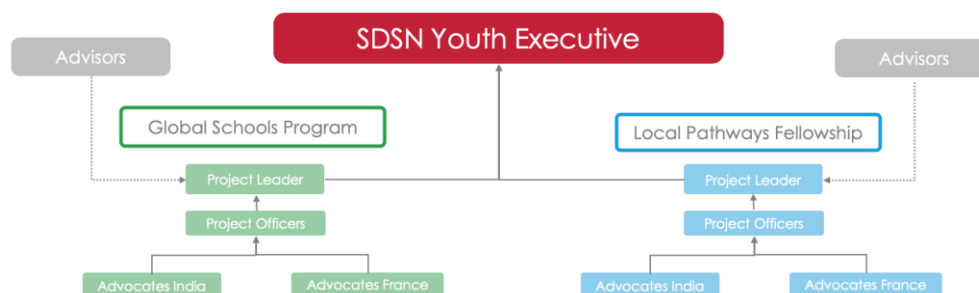

Figure 12 SDSN Youth Structure (Own Illustration)

Set out mission, and common objectives
Mission: GSP mission is to "provide the necessary tools and resources for schools and teachers to educate their students on the Sustainable Development Goals (SDGs). In working with educators, the program aims to transform learning environments globally and make schools the hubs of education and leadership on the SDGs, ultimately empowering students to prioritize sustainable development in their lifestyles, behaviors, education and professional careers" (SDSN Youth - GPS 2019).
Objective: GSP aims to incorporate SDGs into schools globally by training young volunteers to advocate in schools (SDSN Youth - GPS 2019).

Resource Mapping
GSP map their schools network, human and financial resources. The schools network reflects the number, location and data of each school that signed the GSP pledge. The human resources map reflects the number of active young advocates, GSP staff, roles and responsibilities and any feedback loops identified. The financial resources map reflects the active partnerships and fundraising between SDSN Youth GSP and other organizations. These maps are live documents that can be accessed by any member of the GSP structure except for the advocates (SDSN Youth - GSP 2020).

Multi-Stakeholders Partnership for SDGs

Design and Plan

Co-create common agenda and interventions
Each school that signed the GSP pledge is responsible for build a plan to incorporate the SDGs and global citizenship education into their schools and in their local communities. The plan for impact is developed during meetings/workshops where teachers brainstorm ideas on how to integrate the SDGs in their classrooms in form of activities and projects for the students. Teacher are responsible of share their impact in the Workplace Educators Forum, in this way teachers from other communities, schools and countries can replicate the activities and sustain impact (SDSN Youth - GPS 2019).

Develop high level shared measures and define success
GPS track advocates progress with KPIs defined by the Project Leaders and Project Officers (SDSN Youth - GSP 2019):
- Number of direct presentations in schools, including classroom activities
- Number of schools reached out to
- Number of schools already implementing the SDGs
- Number of rejections and why schools were resistant to signing the pledge
- Other types of collaborations, for example NGOs and teachers organizations
- Hours put into the outreach for the month to determine diligence against results
- Time or distance traveled
- Approximate number of teachers and students in each school, and total number of people reached by the GSP

Implement

Define regional/local working groups
GSP advocates are arranged by country and are responsible for the local implementation. They reach out schools and educators to present the GSP to educators in schools (SDSN Youth 2019).

Cascade common agenda, shared metrics & define the mutual reinforcing activities for the pilot projects.
The common agenda and shared metrics are cascaded from top to bottom starting with the Global Project Leaders to the Global Project Officers and finally to the Advocates (SDSN Youth 2019).

Assign functions and activities and allocate resources to the working groups
Global Project Officers responsible to assign activities to the advocates and to ask for resources and allocate them when needed. They are also responsible for the launch of the working groups and run the kickoff meetings to start their activities in their local communities (SDSN Youth 2019).

M&R

Collect, track and report progress against KPIs and objectives.
Project Officers track the journey of the advocates, their actions and impact in their local communities following the KPIs described above. Advocates are responsible to submit their progress by filling in the KPIs form each month (SDSN Youth 2019).

Record and share documents
GSP teams use Google Drive to create, share and store all the working documents created during the day-to-day activities. The documents can be accessed by any member of the GSP structure except for the advocates (SDSN Youth - GSP 2020).

Evaluate and Learn

Collect stakeholder's feedback and lessons learned from the interventions &
Share lessons learned with regional and global community
Advocates need to complete a survey after their time as advocate (5 months). The survey purpose is to gather qualitative information about their satisfaction level with the overall program experience, satisfaction for individual performance, challenges, frustrations, comments and perception received from schools and teachers (SDSN Youth - GSP 2020).

On the other hand, teachers use the Workplace Educator's Forum to share their experiences, ideas, knowledge and impact related to SDGs with GSP and other teachers from the SDSN Youth schools network (SDSN Youth - GSP 2020).

Assess results vs targets to identify opportunities and areas for further action or course correction
Project Officers and Project Leaders meet to discuss the data gathered from the KPI forms and surveys after the 5 months of the Advocates active period. The purpose of these meetings is to assess the results and identify opportunities to make improvement for the next Advocate campaign (SDSN Youth - GSP 2020).

Sustain Impact

Scaling up and replicate impact at different levels and Redefine strategies
GSP has a scale up strategy that looks for grow the number of advocates year by year in order to reach more schools at global level. The scale up strategy consist on increase the number of Project Officers dedicated to the Advocates campaign and take advantage of the digital tools to fully automate the onboarding process and thus increase the number of advocates recruited. The Project Officers are responsible to onboard advocates, train them in SDGs topics and guide them during their journey reaching schools. The scale up strategy has been successful as the advocates campaign has been growing in all the countries, the number of advocates recruited in the last campaign in 2019 was 400. Half of the advocates are interested in continuing be part of the GSP and function as a support in any activity required. The increase in number of advocates is reflected in the increase of schools that signed the GSP pledge. By the summer 2020, there are 914 schools worldwide that comprises the GSP network (SDSN Youth - GSP 2020).

Communicate impact story to internal and external stakeholders
Internal Communication.
- GSP staff members use Workplace chat, groups and HUBs to communicate impact stories and program accomplishments with the GSP network (SDSN Youth - GSP 2020).
- Teachers use the Workplace Educator's Forum to share their impact stories and accomplishments to other teachers (SDSN Youth - GSP 2020).
- Project Officers from the Communication area are responsible for create and deliver a GSP newsletter in a monthly basis that contains general information of the activities developed internally, it is sent by email to the GSP network (SDSN Youth - GSP 2020).

External Communication. Project Officers from the Communication area are responsible for publishing impact stories and accomplishments in the GSP social media such as web site, Instagram, Facebook and twitter. (SDSN Youth - GSP 2020).

6.7 Presentation of the organization

Aalborg University (AAU)

Aalborg University offers education and research in the fields of natural sciences, social sciences, humanities, engineering, technical and health sciences for students since 1974. Aalborg University focuses on strong national and international world class research groups representing the academic areas of the University (AAU 2020). AAU offers MSc programs and projects that takes sustainable development as its point of departure. Programs such as The MSc in Urban, Energy and Environmental Planning with Cities and Sustainability specialization and the Megaprojects cover various SDGs from gender equality, sustainable cities and communities, climate change, quality education, responsible consumption and production, among others (AAU 2020).

The MSc Urban, Energy and Environmental Planning is offered as one of the master programs at Aalborg University. It is an internationally program taught in English, focuses on address the future challenges in terms of urban planning such as climate changes, transportation, renewable energy, water and food supply to make cities and organizations environmentally responsible (AAU 2020). The MSc program has four option for specialization: Cities and Sustainability; Environmental Management and Sustainability Science; Sustainable Energy Planning and Management; and Urban Planning and Management.

The Cities and Sustainability specialization focuses on how to create a better urban environment to improve the life quality for the city's inhabitants and users by placing citizens at the center (AAU 2020). The specialization is framed on a strong cooperation between European and international universities and is in line with UN's ambition with the SDGs. It revolves around SDG 11 concerning safe, inclusive, resilient and sustainable cities. "Dynamically efficient and

productive cities are essential for economic growth (SDG8) and strong urban economies are vital for generating the resources needed for public and private investments in infrastructure (SDG9), education (SDG4) and health, improved living conditions (SDG3), and poverty alleviation (SDG1)" (AAU UEEP 2019).

The new Megaprojects began on 2020. A Megaproject consist of interdisciplinary projects that involves a large number of students across the AAU working together in collaboration with at least one external partner. The megaproject has a number of subprojects all of which contribute to solve the Megaproject challenges. All Megaprojects are in line with the SDGs and the idea of "Leaving no one behind". They are focus on the future labor market in terms of innovation and progress. They revolves around SDG 8 concerning Decent Work and Economic Growth, to promote inclusive, lasting and decent work for all. In the Megaprojects, students from different study programs at AAU will collaborate to work on the various challenges (AAU 2020).

The AAU Megaprojects are taken as case study as they look for encourage students from different backgrounds to create innovative solutions in collaboration with external partners to solve global issues such as the one framed on this report, increase girls participation in STEM education in elementary schools. The challenge presented in this report revolves around SDG 4 concerning quality education and SDG 5 concerning gender equality.

6.8 Continuous Processes of the Multi-stakeholders Partnership Lifecycle – AAU

TRUST   EDUCATE & LEARN   COMMUNICATE

Trust

Aalborg University is a historically trusted institution that offers education and research in various fields of sciences and engineering (AAU 2020). Trust in AAU is reflected in various ways:

- In the high rates of international and national applications that want to be enrolled in the university programs. In the last years, AAU has been turning programs to English in order to host more international students as a response to the market demand (AAU 2020).
- In the increasing amount of collaborations on research projects with public and private organizations (AAU 2020).
- Trust in AAU students and researchers is reflected in the high rate of hiring of their students in public and private organization around the globe. Students are acting as champions and change agents for sustainable development in the organizations (AAU Jobbank 2020).

The new Megaprojects look for build an atmosphere of mutual trust not only between students and teacher, but also with external partners to facilitates collaborative interaction, learning and resolution processes to increase information sharing. The internal trust between the participants is built and maintain by setting rules and processes that ensure continuous and effective communication between them, a fairly and objectively treatment and by ensuring alignment of participants expectations (AAU 2020).

AAU trust is strengthened by the use of the Problem-Based Learning model (PBL). The PBL project model is as a central and recurrent element in all educational activities at AAU (AAU 2015). This approach is internationally recognized by universities, researchers and students in Denmark and abroad.

Educate and Learn

Megaprojects at AAU use the problem-based learning (PBL) model. The PBL is a continuous learning process where students learn through the development of their projects during the semester (AAU 2020). The PBL projects include project work on real problems in self-governed group work with the opportunity to collaborate with external partners to solve a real problem (AAU 2015). Students need to take part of an obligatory PBL course in order to become familiar with the PBL method and the use of theories in their project work (AAU 2015).

With the megaprojects and the use of PBL, students improve their ability to collaborate and gain a deeper understanding of a topic through problem-solving using real-world challenges. They allow teams members to develop skills and competences such as (AAU 2015):

- Communication, collaboration and teamwork
- Project management
- Complex problem-solving
- Co-design in collaboration with others

- Critical thinking and analysis
- Critical self-reflection
- Designing and delivering presentations
- Public speaking

PBL can be done in person, online, or a combination of both, thus it encourage collaborative learning no matter where students and teachers are. Student of AAU have designated areas within the university where they can meet in person, also they have digital platforms such as Microsoft Teams for web conferencing and get feedback from supervisors by video conferencing.

Apart from the knowledge, skills and competences acquired from the PBL and the development of the megaproject during the semester, the continuous learning process includes:
- Lessons stipulated in the MSc programs curriculum.
- An online course on the SDGs (AAU 2020).
- A mid-term and end-term seminars where students share knowledge and experience with other students working on the same challenge (AAU 2020).
- The megaproject conference where students present the results from their semester projects. This presentation serves as a base for the next semester's megaprojects (AAU 2020).

Communicate

The objective of AAU megaproject is to strengthen collaboration and cooperation between students, supervisors and external partners. AAU has digital platforms and physical spaces to foster communication, manage relationships, engage and motivate participants (AAU 2020).

Internal communication channels and tools are dedicated to the internal communication between students, teachers and supervisors (AAU 2020):
- Outlook email
- Microsoft Teams for video conferencing and chat
- AAU Moodle is a virtual learning environment to provide course materials and activities
- AAU website for general information about programs, facilities and contacts
- AAU library to access digital material
- Digital exams platform to hand in digital projects and exams
- STADS Self-service to view grades, register exams, print academic documents and request other administrative stuff.

External communication channels dedicated for communication with external partners such as business, organizations and universities (AAU 2020):
- AAU website for general information about programs, facilities and contacts
- Microsoft Teams for video conferencing and chats

6.9   The Six Modules of the Multi-stakeholders Partnership Lifecycle – AAU

PREPARE	DESIGN AND PLAN	IMPLEMENT
MONITOR AND REPORT	EVALUATE AND LEARN	SUSTAIN IMPACT

Prepare

Define if partnership is the best way

AAU knows that major problems are often best solved in interaction between different disciplines and partners. Therefore, AAU is taking the PBL to a next level of collaboration with the megaprojects. A megaproject is a project performed during the semester that aims to provide solutions to current sustainability and societal problems in collaboration across campuses, as well as across universities, national borders and at least one external partner (AAU 2020).

Understand the issue

All megaprojects are problem oriented with a focus on the 17 SDGs. SDGs give direction and help individuals to focus on the most urgent issues and what really matters for our future (AAU 2020).

Identify and assess stakeholders

The problems and challenges to be addressed in the megaproject need to define in conjunction with one or more external partners. External partners may be public or private organizations that contributes with real problem ideas from their sector. The megaprojects can also involve other university partners interested (AAU 2020).

Define partnership composition, scope & model

The composition of the megaprojects is a multi-stakeholders project with students from the AAU, students from other universities, supervisors from AAU and external partners from public and private organizations (AAU 2020).

The scope of the megaprojects can be on Denmark or the rest of the world (AAU 2020).
The megaproject model can vary between:
-    Local implementation. Develop projects in particular areas or regions. They are often focused on local target groups.
-    Advocacy campaigns. Focus on behavioral changes of target groups by sensitizing individuals and encouraging them to engage in problem solving.

Define partnership governance and organizational structure

A megaproject is an overall theme with up to three focus areas. Each focus area with up to two challenges. Each challenge can have an unlimited number of clusters. The focus area need to be relevant for at least three faculties and challenges must be relevant for at least two faculties (AAU 2020).
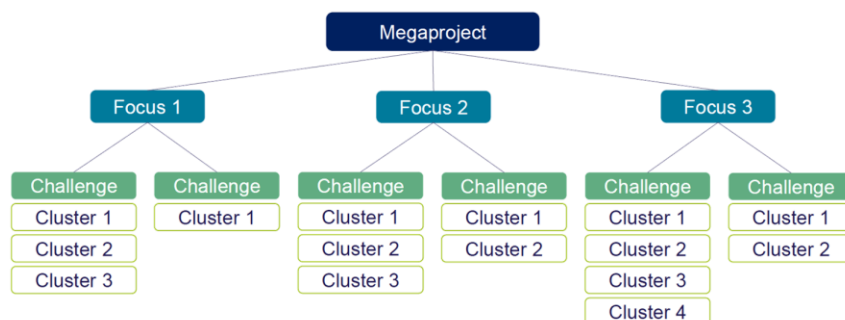

Figure 13 Megaproject Structure (AAU 2020)

Prepare

Each megaproject has a coordinator who is the primary contact person for the megaproject, a group of students working in their own disciplines as part of their curricular activities and at least one external partner (AAU 2020).

Set out vision, mission, and common objectives
The vision for the megaprojects is to provide solutions to current sustainability problems at national and international level (AAU 2020).

Set out hard skills required to achieve common objectives
The megaprojects give to students interdisciplinary competences, collaborative skills and an overall understanding and awareness of the 17 SDGs (AAU 2020). Additionally, they acquire all the skills developed using the PBL method such as (AAU 2015):

- Communication, collaboration and teamwork
- Project management
- Complex problem-solving
- Co-design in collaboration with others

- Critical thinking and analysis
- Critical self-reflection
- Designing and delivering presentations
- Public speaking

Design and Plan

Co-create common agenda and interventions
The creation of a common agenda in a megaproject starts with the definition of challenges and projects. The challenges can be proposed by supervisors, researchers or coordinators alone or in conjunction with external partners (AAU 2020). Project proposals are defined beforehand or can be submitted by individuals or groups of students (AAU 2020). Once students select or submit a project proposal, they will be matched with other groups interested in the same challenge. All these interested groups will form a cluster that will work interdisciplinary on the same challenge, but in different projects. At least two groups need to work on a given challenge (AAU 2020).

Develop high level shared measures and define success
Track of projects is done through deliverables, seminars at regular intervals throughout the semester and the final deliverable that provides an overall response to the challenge (AAU 2020).
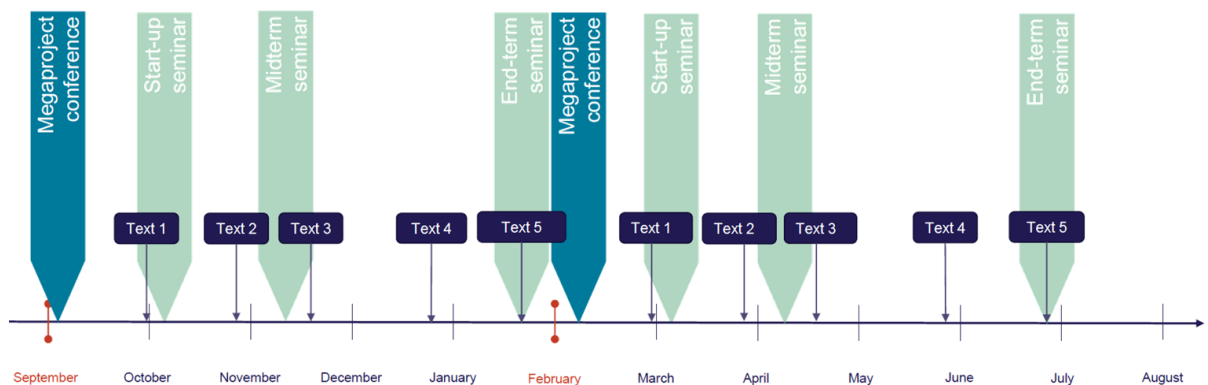

Figure 14 Predefined timeline (AAU 2020)

Implement

Define regional/local working groups & Assign functions and activities to the working groups
Students form their own project groups with colleagues from the same discipline. The project groups working in the same challenges form a cluster. Each cluster has up to 5 project groups (AAU 2020). Each project group has a supervisor and a group of students working in their own disciplines (AAU 2020).
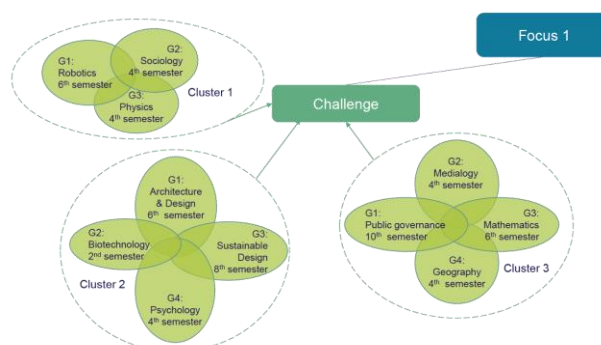

Figure 15 Structure within the Focus groups (AAU 2020)

Student's and supervisor's functions and activities in a megaproject are the same as in a normal semester project:

Supervisors need to:
- Ensure that the project group comply with deadlines for deliverables
- Attend the mid-term and end-term seminars
- Give input and feedback on the final product of the project
- Be part of the megaproject conference

Students will have additional activities related to the megaproject that takes 30 hours extra compared to an ordinary semester project. Additional activities are (AAU 2020):
- Online course on the 17 SDGs
- Prepare and present four deliverables that need to be shared with the groups working on the same challenge
- Attend the mid-term seminar and the end-term seminar
- Prepare a final deliverable with the other groups of the same challenge
- Share the project results in the megaproject conference

Cascade common agenda, shared metrics & define the mutual reinforcing activities for the pilot projects.
Students and supervisors are already familiarized on how megaprojects works as they follow the same structure as the semester projects, they just need to familiarize with the seminars, deliverables and final conference already predefined in the timeline. On the other hand, external partners need to be familiarized with the entire megaproject methodology that considers:
- Aalborg University PBL method
- Student and supervisor roles and responsibilities
- SDGs, challenges and projects proposals
- Seminar and deliverables dates
- Final megaproject conference

Launch working groups and Kick Off meeting to start the development of the project
The launching of the project groups of the megaprojects it is done at the same time all together. The specific date is presented in the predefined timeline as "Start-up seminar" (AAU 2020).

Monitor and Report	**Collect, track and report progress against KPIs and objectives.** Project tracking is performed according to the predefined timeline (AAU 2020): - Four small status deliverables that need to be shared with the groups working on the same challenge - Mid- and end- term seminar where students meet engage and share knowledge with other project groups working on the same challenge - Final deliverable in collaboration with the other groups to provide an overall response to the challenge - Megaproject conference to present final results **Record and share documents** The online platform Microsoft Teams allows students, supervisors and external partners to interact, work interdisciplinary, share feedback and to gain insight into each other's (AAU 2020).
E&L	**Collect stakeholder's feedback and lessons learned from the interventions &** **Share lessons learned with regional and global community** Megaprojects at AAU use the problem-based learning (PBL) model that serves as a continuous learning process with feedback loops. Also, the two seminars and the final megaproject conference serve to reinforce the feedback loops by facilitating the share of knowledge, lessons learned, get feedback and meet other groups working on the same challenge. (AAU 2020).
Sustain Impact	**Scaling up and replicate impact at different levels &** **Communicate impact story to internal and external stakeholders** The final megaproject conference serves as the start-up conference for the next projects under the megaproject umbrella. This conference allows to scale up or replicate previews projects by the next semester students. The seminar and final conference also allows communicate results and impact stories; knowledge sharing from one semester to another; avoid duplicating work; and give continuity to a project from previous semesters (AAU 2020)

7. Discussion

This part of the report provides the explanation and interpretation of the findings across the case studies in comparison with the theories presented in theoretical framework. The Results chapter of this report presents practical findings gathered from the three main stakeholders; these results are going to be compared with the theories presented in the Theoretical Framework chapter.

The intention of the Discussion chapter is to find out where the theory is being applied in practice, patterns between the behavior of organizations and highlight the best practice in each module analyzed. The best practices will be taken to improve the multi-stakeholders partnership lifecycle model (which is entirely based on theories) with methods and techniques used in practice by the three organizations. Therefore, the discussion will be mainly focused on the components where practice has been shown remarkable results.

The discussion will follow the next order and structure; comparison of the three continuous processes (Trust, Educate and Learn and Communicate) followed by the comparison of the six modules (Prepare, Design & Plan, Implement, Monitor & Report, Evaluate & Learn and Sustain Impact).

Trust	**Alignment to the theory**	SGRE ✔	SDSN Youth	AAU
	In practice, SGRE is the most aligned to the theory of build and maintain trust. SGRE builds and maintains an atmosphere of mutual trust between its employees with the Culture of Trust Program (SGRE 2019). The Culture of Trust Program set the rules of the game in order to build trust between the employees working in collaboration towards the four common goals of the program. The set of behaviors to build and maintain trust are in line with the theory, such as: Demonstrate respect; Build diversity and dialogue; Understand the drivers and motivations of each partner; Deliver results and get better; Clarify and align expectations; Practice accountability (Covey 2006); Keep commitments; Frequent meetings with honest conversations (KPMG and IDAS 2016).			
	Patterns identified	SGRE ✔	SDSN Youth ✔	AAU ✔
	The three organization try to build and maintain trust in different ways in projects and day-today operations. SGRE has a dedicated program to build trust, whereas AAU and SDSN Youth maintain trust with internal and external stakeholders with their day-to-day actions. AAU through the development of semester projects in collaboration with other partners and SDSN Youth through projects focus to solve specific social issues seeing in practice such as the Advocates programs.			
	Best practice identified	SGRE ✔	SDSN Youth	AAU
	The best practice identified is The Culture of Trust Program in SGRE that has the objective of encourage and support the development of a shared company to create an atmosphere of trust.			

Educate and Learn	**Alignment to the theory**	SGRE	SDSN Youth ✔	AAU ✔
	In practice, SDSN Youth and AAU are aligned to the theory of continuous educations and active learning. They have specific online course on the SDGs topics. Also, they have processes to encourage the continuous learning and the learning by doing process, SDSN Youth with the support of course in digital platforms such as edX, SDG Academy and SDG Zone and AAU with the PBL model where students learn through the development of their semester projects.			
	Patterns identified in practice	SGRE ✔	SDSN Youth ✔	AAU ✔
	The three organizations educate their team members at the beginning of the projects and have active learning processes during the entire implementation, but only SDSN Youth and AAU have dedicated courses for SDGs. The learning process starts with the onboarding of new members in a project, program or activity followed by courses in digital platforms, workshops or the use of the PBL model that encourage ideas and knowledge sharing between them and thus foster the learning by doing process. Another pattern identified between SDSN Youth and AAU is the mutual interest in teaching and strength certain skills among their young team members such as; communication, collaboration, teamwork; complex problem-solving; co-design; critical thinking and analysis; designing and delivering presentations; public speaking; remote working; and leadership skills for managing virtual teams.			
	Best practice identified	SGRE	SDSN Youth	AAU ✔
	The best practice identified is the use of the PBL model in AAU megaprojects. This model has international recognition and has received great interest from universities, researchers and student. PBL encourage collaborative learning, gain a deeper understanding of a topic through the entire semester project, and develop various skills and competences.			

Comm	**Alignment to the theory**	SGRE ✔	SDSN Youth ✔	AAU ✔
	In practice, SGRE, SDSN Youth and AAU are aligned to the theory of continuous communication as all of them have a variety of digital tools to enhance communication between internal working groups and external partners.			

Patterns identified	SGRE ✓	SDSN Youth ✓	AAU ✓

The three organization have digital communication channels for internal and external communication. The internal channels support the communication between members of the working groups and leaders, whereas external channels support communication with coworkers from different areas or external organizations. There is a clear pattern between the three organizations about the use of digital platforms to connect virtual teams to develop projects and foster the share of ideas, experiences and knowledge cross countries and regions.

Best practice identified	SGRE	SDSN Youth ✓	AAU

The best practice identified is the use of digital collaboration tools in SDSN Youth - Global Schools Program. GSP is a global team where much of the work is performed by virtual teams supported by digital software and tools that equip the members to provide efficient and effective work on all projects and communication. Therefore, the use of the digital tools is vital on a daily basis. SDSN Youth use more than 18 different digital tools for various purposes (SDSN Youth - GPS 2019).

Prepare

Alignment to the theory	SGRE ✓	SDSN Youth ✓	AAU ✓

In practice, SGRE, SDSN Youth and AAU are aligned to some theoretical components mentioned the "Prepare" module. All of them use the SDGs as framework to define the problem to work on. They also have a process to identify and select appropriate members and partners for the projects, programs or activities to be developed. SGRE has a selection process where leaders select the advocates that will conform the working groups of each project. SGRE also has a "Core Team" that functions as the "backbone organization" presented in the theory. SDSN Youth has a campaign every year to select advocates in different countries to reach local schools and rollout the program. Students working in the megaprojects at AAU can select freely their coworkers and reach external partners to develop their semester projects. On the other hand, SGRE, SDSN Youth and AAU have a specific governance and structure for their projects and programs.

Patterns identified	SGRE ✓	SDSN Youth ✓	AAU ✓

The three organization use the SDGs as a framework to understand and identify the problems to work on. The SDGs give direction and help them to focus on the most urgent issues and what really matters for our future.

A pattern identified between SGRE and SDSN Youth is the global scope of the programs and projects they implement and the "Local implementation" model. This means that the internal teams work in their local communities, but they are aligned with a global objective to address complex problems that has a higher potential for large-scale impact.

A pattern identified between SDSN Youth and AAU is the integration of young people as core members and leaders of projects, programs and activities. Both organizations, include youth in the decision-making and internal policy design processes. They recognize young people as a source of new ideas, innovation, and with the capacity to solve complex problems. SDSN Youth and AAU are focused on; educating young people about the challenges of sustainable development; creating opportunities for them to use their knowledge and creativity to pioneer solutions; setting up digital platforms to cooperate across borders and with external partners; and to have their ideas and perspectives integrated into reality.

Best practice identified	SGRE ✓	SDSN Youth ✓	AAU ✓

Two best practices were identified, the first one is the inclusion of youth as core members of the projects, programs and activities developed by SDSN Youth and AAU. SDSN Youth have a detailed process to identify and select young advocates between 18 and 30 years old that are responsible of lead the local implementation in their communities and develop the rollout of the Global Schools Program. On the other hand, AAU megaprojects look for connect young students working in their semester project with external partners to tackle real complex problems. The megaproject's working groups are led by young students that use the PBL model to find solutions and solve complex real problems with the support of supervisors and external partners.

The second-best practice is the presence of a "Core team" in the structure of SGRE's Culture of Trust program. The Core team functions as the "backbone organization" presented in the theory. The Core team functions are: be the point of contact

between the Steering Committee and the local working groups; ensures a strong communication and implementation of the initiatives at regional and global level; cascade and guide vision and strategy across levels and BUs; convene partners and external stakeholders to seek opportunities for alignment; and cultivate engagement and ownership between the Steering Committee and working groups.

Design and Plan

Alignment to the theory	SGRE ✓	SDSN Youth ✓	AAU ✓

SGRE and SDSN Youth go along with the theory of develop KPIs to track the progress of the projects, programs and activities.

Even though SDSN Youth and AAU internal working groups create common agendas, SGRE is the most aligned to the theory as each country/region team have a detailed plan for impact, that is developed during workshops where CCMs brainstorm ideas covering both local and global initiatives.

Patterns identified	SGRE ✓	SDSN Youth ✓	AAU

SGRE and SDSN Youth have predefined key performance indicators to track the progress of their projects, programs and activities. In SGRE, country leaders predefined the KPIs for each project that will be developed, whereas in SDSN Youth advocates progress is tracked with the KPIs forms defined by the Project Leaders and Project Officers.

Best practice identified	SGRE ✓	SDSN Youth	AAU

The best practice identified is the method applied by SGRE to create a common agenda. They perform workshops in order to gather all country/regional CCM teams to brainstorm ideas and co-create solutions to tackle the problems. The method used by SGRE is similar to the Design thinking methodology, which is an open process to understand the problem, brainstorm ideas and find solutions using multidisciplinary teams (D. Eggers 2019). The Design Thinking method is used by companies such as Roche, Lego, Bank of America, Starbucks, and Nike to solve complex problems (Collective Campus 2019).

Implementation

Alignment to the theory	SGRE ✓	SDSN Youth ✓	AAU ✓

In practice, SGRE and SDSN Youth are aligned to the theory of define regional/local working groups and assign a leader that is responsible of cascade common agenda and KPIs, assign functions and coordinate the kickoff of the projects. SGRE also define the rotation period of the working group members to give more employees the chance of joining the program, leading to a broader exposure and a further implementation of the program into the organization. SDSN Youth runs the advocates campaign to recruit advocated across the countries that will form the working groups. The leaders of the working groups are the Project Officer. SDSN Youth also define pilot projects as it can considerably reduce risk of failure.

AAU is aligned to the theory of define local working groups that are composed by students from different disciplines, a supervisor and at least one external partner. Additionally, students and supervisors are familiarized with the semester agenda that contains number of deliverables and deadlines; this agenda is communicated to the external partners.

Patterns identified	SGRE ✓	SDSN Youth ✓	AAU ✓

The three organization define regional or local working groups that are responsible for the implementation or development of the projects, programs and activities in the local level.

In SGRE and SDSN Youth each working group has a leader that functions as the point of contact and is responsible to cascade the common agenda with the working groups, assign functions and activities, allocate resources and coordinate the Kickoff meeting to start the implementation of the project, program or activity.

Best practice identified	SGRE ✓	SDSN Youth ✓	AAU

Two best practices were identified, the first one is the SGRE nomination process for members of the regional/local working groups that includes the nomination criteria, definition of the leader and rotation period. The second-best practice is the

SDSN Youth advocates campaign that is performed every year by the Project Officers. Advocates are young people between 18 and 30 years old with a genuine interest on the SDGs that will function as advocates for 5 months.

Monitor and Report

Alignment to the theory	SGRE ✓	SDSN Youth ✓	AAU ✓

In practice, SGRE, SDSN Youth and AAU are aligned to the theory of monitor and report progress of their working groups. In SGRE, CCM teams have regular meetings with senior management from their country/region to get feedback, support and track progress. In SDSN Youth, advocates are responsible to submit their progress by filling in the KPIs form each month, the progress is evaluated by the Project Officers. The progress of the AAU megaprojects during the semester are monitored with four deliverables and the mid- and end- term seminars where teams shared advances with the groups working on the same challenge.

Patterns identified	SGRE ✓	SDSN Youth ✓	AAU

SGRE and SDSN Youth collect, track and report progress against KPIs and/or objectives. SGRE monitor and report progress on meetings and SDSN Youth advocates need to fill in a KPIs form each month to report their progress.

The three organizations use digital platforms that allows participants to work simultaneously on documents, share, present and store files. SGRE use Microsoft Sharepoint, SDSN Youth use Google Drive and AAU use Microsoft Teams.

Best practice identified	SGRE	SDSN Youth ✓	AAU

The best practice identified is the process used by SDSN Youth to monitor and report progress. They set specific quantitative KPIs that applies to every advocate regardless of location. The KPI form need to be submitted every month by the advocates during their active period. Also, SDSN Youth has the best practice in terms of record and share documents with all members. GSP use Google Drive to create, share and storage all the working documents created during the day-to-day activities by the virtual teams. The documents can be accessed by any member of the GSP structure.

Evaluate and Learn

Alignment to the theory	SGRE ✓	SDSN Youth ✓	AAU ✓

In practice, SGRE, SDSN Youth and AAU are aligned to the theory of evaluate and learn during the implementation process. SGRE has a process to gather and share valuable content such as best practices and lessons learnt using the Private Yammer groups. Also, new CCMs need to fill in the engagement survey and the following surveys to track the positive impact of both local and global initiatives and feedback. SDSN Youth also perform a survey to collect advocates feedback, lessons learned, experiences and satisfaction level. The survey need to be completed after the 5 months of being an active advocate. Project Officers and Project Leaders meet to discuss the data gathered from the KPIs and the survey to assess the results and identify opportunities. On the other hand, AAU use the problem-based learning (PBL) model which is a continuous learning process where students from the same working group learn through the development of their projects during the semester. The mid- and end- term seminars serve to share the working groups knowledge, lessons learned and feedback with other groups working on the same challenge. The final megaproject conference serves to pass the knowledge to student for the next semester.

Patterns identified	SGRE ✓	SDSN Youth ✓	AAU ✓

The three organization collect feedback and lessons learned from their internal working groups. They use the data to compare results versus targets and identify opportunities and areas for further action, projects or course correction.

A pattern identified between SGRE and SDSN Youth is the way of gather and share lessons learned with other working groups using their internal communications channels. SGRE share lessons learned with fellow CCMs using the Private Yammer groups. SDSN Youth use the newsletters that are sent to the SDSN Youth network members and the Workplace Educator's Forum to share their experiences and lessons learned with GSP community and other teachers from the SDSN Youth schools network.

Best practice identified	SGRE	SDSN Youth	AAU ✓

The best practice identified is the use of the problem-based learning (PBL) model in AAU megaprojects, this encourage the continuous learning process where students learn through the development of their projects. It encourage collaborative learning, improves the ability of the participants to: gain a deeper understanding of a real-world challenges; acquire greater knowledge and awareness of sustainability topics; and to develop skills and competences required in this century. The PBL model can be use in physical and virtual teams or a combination of both supported by the digital platforms.

Sustain Impact

Alignment to the theory	SGRE ✓	SDSN Youth ✓	AAU ✓

In practice, SGRE, SDSN Youth and AAU are aligned to the theory of communicate impact stories to internal and external stakeholders. SGRE with the Staying Connected knowledge sharing setup give CCMs the opportunity to share information impact stories from their country / regional teams and keep informed and involved the management level. SDSN Youth use various digital platforms to communicate impact stories and program accomplishments with internal and external stakeholders such as workplace chat, groups, HUBs, forums, newsletter, GSP web site, Instagram and Facebook. AAU perform the final megaproject conference that serves to communicate impact result of the projects to other working groups and for students enrolled in the next projects.

Additionally, SGRE, SDSN Youth and AAU are aligned to the theory of replicate and/or scale up interventions. SGRE has a strategy that has the objective of foster and support already existing initiatives to be replicated in other BUs and be scaled at different levels such as countries and regions. SDSN Youth has a scale up strategy that looks for increase the number of advocates year by year and thus reach more schools at global level. AAU perform the final megaproject conference that serves as the start-up for the next projects under the megaproject umbrella. In this way projects can be scaled up or being replicated in other location.

Patterns identified	SGRE ✓	SDSN Youth ✓	AAU ✓

The three organization communicate results and impact stories using different methods and digital platforms to reach internal and external stakeholders.

A pattern identified between SGRE and SDSN Youth is the creation of a strategy that focuses in existing initiatives to be replicated in other locations and be scaled at different levels such as countries and regions.

Best practice identified	SGRE ✓	SDSN Youth	AAU

The best practice identified is the strategy designed by SGRE to replicate and scale up initiatives. The Staying Connected knowledge sharing setup has the objective of foster and support already existing initiatives to be replicated in other BUs and be scaled at different levels such as countries and regions.

The multi-stakeholders partnership lifecycle is a combination of theoretical and practical methods reviewed in the literature such as: Multi-stakeholders partnerships; Collective impact; and System approach. The lifecycle was used to analyze three case studies to find patterns and best practices across them.

This section summarizes 11 best practices across SGRE, SDSN Youth and AAU that will be integrate in the multi-stakeholders partnership lifecycle. Five of the eleven practices are essential to lead a shift in the paradigm of partnerships:
1) The use of the PBL and megaprojects model to link theory and practice to solve real complex problems and develop skills and competences. Universities are ideal HUBs to do this.

2) The use of digital collaboration tools that ensures the flow of information between the partners, foster the learn by doing culture and allow that operations work 100% in a virtual environment.
3) The inclusion of youth as core members in projects, programs and activities.
4) The presence of a "backbone organization" to coordinate partners working in collaboration
5) The use of the Design thinking methodology by inviting multidisciplinary teams to workshop where they can understand a problem, brainstorm ideas and co-create solutions.

These practices can lead to a shift in the parading as they are in some way related to the three megatrends that are impacting our world and accelerating the pace of change. The technological, social and techno-social trends are universal and carry huge challenges, some of these challenges can be addressed with the five best practices identified. The first and third practice can address the challenges associated with the social megatrend such as the growing youth population in developing countries that carries an increase in unemployment rates and the unmatched between skills learned in schools and skills required in jobs. The second practice is related to the technological megatrend that includes the digitalization and hyper connectivity of people, organizations and objects. Finally, the fourth and fifth practices are related to the techno-social megatrend where collaboration and networks between multiple organizations is an integral part of doing business and solve complex problems using available technologies that allows virtual relationships between individuals, groups, and organizations.

8. Conclusion

This part of the report provides a strategic plan that describes how to build a multi-stakeholders partnership between SGRE, SDSN Youth and AAU to achieve the common objective:

Encourage girls to take up STEM degrees in elementary schools.

The following strategic plan uses the multi-stakeholders partnership lifecycle as a framework and integrate the five best practices across the case studies to guide the co-creation process within the partnership to achieve the common objective. The strategic plan needs to be supported by a digital platform. A preview of the Digital Platform is presented in the Annex section. The digital platform contains 8 different sections 1) Chat, Meetings and Workshops 2) Tasks 3) Files 4) Education and Training 5) Governance and Structure 6) M&R 7) Results and Lessons Learnt 8) Impact Stories. These sections will serve as a support to guide the entire partnership process through the MSPL, since the partnership agreement to the scale up of a project. The 8 sections of the digital platform are explained in the Figure 16: Digital Platform Preview in Annex. The Digital Platform will serve as the communication channel between the various partners to bridge the gap between stakeholders, coordinate efforts, meet, run remote workshops, coordinate activities, assign tasks, share documents and track progress to accelerate the achievement of the common objective.

Partners of the "Girls into STEM" Megaproject		
Aalborg University AAU Sustainable HUB	SGRE Culture Change Makers from the Culture of Trust Program	SDSN Youth SDG Students Program

Roles
AAU Sustainable HUB (AAU HUB) is composed by AAU students working in the megaprojects interested in sustainable development topics and with the desire to work on research or hands-on projects as part of their semester projects (Agents).
The Backbone Organization (BO) is a group of advisors, usually external to the partnership, but it can contain appointed members from each of the organizations -SGRE, SDSN Youth and AAU HUB- that constitute the partnership (Champions). The Backbone Organization is responsible to foster the cross-sector communication and collaboration required in a partnership to achieve the common goal by integrating all partners into the decision-making process. The Backbone Organization members cannot be Focus Leaders or part of the Steering Committee.   The Backbone infrastructure needs to have knowledge in the sustainability field and its main roles are: facilitator, advisor in sustainability topics, data management, report, communicate, digital platform support, and administrative management.
The Steering Committee is composed of higher-level representatives and decision-makers from each of the organizations -SGRE, SDSN Youth and AAU HUB- (Manager and Champion) that are appointed during the first workshop. Steering bodies provide senior management support, contacts, expert advice, strategic direction, champion the effort, and align their own organization's work to the common objective of the partnership. The Steering Committee needs to have at least 1 and up to 3 representatives from each partner. There is one Steering Committee per megaproject.
The Focus Leader is required when the issue to work on is divided in two different focus areas and there are more than two working groups in each focus. The Focus Leader is appointed by the Steering Committee and needs to be strategically selected as they need to have a good understanding of the problem and solve questions form the working groups. They are responsible to gather information from the working groups to report directly to the Steering Committee and indirectly to the Backbone Organization. Focus leaders cannot be part of the Steering Committee nor Backbone Organization.
The Working Groups (WG) are composed by one leader, one deputy leader and various members from the participating organizations (Agent). The working groups are composed mainly by members of the AAU HUB and some members of the SDSN Youth and SGRE, they need to have at least one member of each organization. They are responsible of execute the project and the activities defined in the common agenda. They are evaluated on their ability to get the project execution. The working groups report to Working Group Leader or the deputy leader.
The Working Group Leader (WGL) and Deputy Leader (DL). The WGL is appointed by the Steering Committee and the DL is appointed by the members of the working groups. The leaders need to be strategically selected as they need to have a good understanding of the problem. They are responsible to report directly to the Focus Leaders or the Steering Committee, cascade agenda, assign tasks, coordinate, align, solve questions, facilitate information & contacts and guide their working groups through the project execution (Champion and Agent). Ensure that leaders have the skills and competences presented in the educate and learn continuous process to successfully mobilizes employees. The DP covers the WGL position when there is no one in the position.

ZERO	**Task:** Create a digital platform where different stakeholders can come together	
	Responsible: → SGRE	☐ Create a digital platform where SGRE, SDSN Youth and AAU come together to work in partnership, collaborate and co-create solutions to achieve the megaproject objectives.
	Tools: ♦ Digital Platform	The SGRE-SDSN Youth-AAU partnership can have multiple megaprojects. Each megaproject has up to three focus areas, each focus area can have any number of working groups. There is one Steering Committee per megaproject. Use the "Partnership Governance and Structure template" (Annex) to define the organizational chart and flow of information within the partnership.
		Name of the Megaproject: "Girls into STEM"

Task: Create a Sustainable HUB in AAU	
Responsible: → Backbone organization → SDSN Youth → AAU	☐ AAU staff is responsible to create a Sustainable HUB in AAU with the support of the backbone organization and the guidance of the SDSN Youth - SDG Students Program. This HUB will be integrated by students working in the megaprojects. The HUB has the objective of gather students interested in sustainable development where they can share ideas, knowledge, define issues or topics and form working group to work together on research or hands-on projects during their semester projects.
Tools: ♦ Digital Platform	☐ Students members of the AAU HUB need to attend 3 mandatory trainings during the semester: Sustainable Development Goals (SDGs); Education for Sustainable Development (ESD); and Project Base Learning (PBL) method.

3 Continuous Processes

Task: Build and maintain trust	
Responsible: → All partners	☐ Build trust between the partners using a common language and the same platform to meet, share and coordinate tasks towards the common objective.
Tools: ♦ Digital Platform	
Task: Continuous communication between the partners	
Responsible: → Backbone organization	☐ The backbone organization is responsible to create a digital module in the platform where AAU HUB, SGRE and SDSN Youth can collaborate and co-create solutions to achieve the megaproject objective, in this case: encourage girls to take up STEM degrees in elementary schools. The first name given to the module will be the name of the megaproject, for example, "Girls into STEM", the name can be changed later.
Tools: ♦ Digital Platform	☐ The backbone organization is responsible to grant access and onboard the members of SGRE, SDSN Youth and AAU HUB working in this partnership in the use of the various digital tools contained in the digital platform. The backbone organization needs to ensure that partners are familiar with the tools, sections and the attendance to the mandatory trainings. In this way, the flow of information between the partners is assured.
Task: Educate and train the members of the partnership	
Responsible: → Backbone organization → AAU HUB	☐ The backbone organization is responsible to assign and track the completion of the 3 mandatory trainings to the members of the AAU HUB and other participants from SGRE and SDSN Youth. The mandatory trainings are: Education for Sustainable Development (ESD), Soft Skills and Competences and Project Base Learning (PBL) method.
Digital Platform section: ♦ "Educate and Train"	☐ The AAU HUB members and the participants from SGRE and SDSN Youth assigned are responsible complete the mandatory trainings.

Prepare

Task: Select a point of contact from the AAU HUB and contact potential stakeholders interested in collaborating and co-create solutions towards the common objective	
Responsible: → AAU HUB	☐ AAU HUB needs to select the representatives that will function as point of contact to coordinate future projects in partnership with SGRE and SDSN Youth at local, regional and country level.
Tools: ♦ Digital Platform	☐ The representatives from AAU HUB will decide the "proper time" to start contacting the external partners —SGRE and SDSN Youth— in order to start the workshops where partners can collaborate and co-create solutions aligned to the objective. The "proper time" need to be the first month of the beginning of each semester, this means in February and September.

Task: Run the first series of workshops (face to face or remotely) with the potential partners

Facilitator: → Backbone organization **Participants:** → AAU HUB rep. → SGRE rep. → SDSN Youth rep. **Digital Platform section:** ◆ "Chats, Meetings & Workshops" ◆ "Files" ◆ "Tasks" ◆ "Governance, Structure and Organizational Chart"	☐ The backbone organization is responsible to coordinate the first series of workshops (face to face or remotely) with all potential partners representatives from AAU, SGRE and SDSN Youth. Activities to develop during the first series of workshops: - Present each other - Explain their motivations to build a partnership - Align and agree on the issue that will be addressed in the megaproject. *Megaproject Issue: A reality in the society and SGRE workforce is that not enough women become engineers. Increase the number* *Common Objective: Encourage girls to take up STEM degrees in elementary schools.* *Focus 1: Include Science and Technology topics in elementary schools* *Focus 2: Include Engineering and Mathematics topics in elementary schools* - Define the composition, scope and model of the partnership. *Scope: Global level partnership* *Model: Local implementation partnership* - Set out the mission and common objectives of the partnership *Mission: Rise awareness between girls in elementary schools about the STEM opportunities.* *Objective: Encourage girls to take up STEM degrees in elementary schools by developing students programs, campaigns, projects and activities related to this topic* - Map the available resources of each of the partners and define what can be used and how *SGRE resources: Knowledge about STEM in practice that can be translated into content for elementary students focus on wind energy generation; Human and financial resources.* *SDSN Youth resources: Knowledge on how to create HUBs in universities where students can learn, engage with, and take action on the SDGs; Network of +900 elementary and secondary schools; SDG lessons program for elementary schools to be implemented in the schools network.* *AAU resources: Sustainable HUB with students trained in the PBL method and megaproject structure; Students educated in SDGs, with creative minds, new innovative ideas, with the capacity and keen to solve complex problems.* - Decide how the costs of the partnership will be covered such as NGO's funds, SGRE funds or through external fundraising activities. - Define governance and structure of the megaproject. Use the "Megaproject Governance and Structure template" in the Annex section to define the organizational chart, the flow of information and the 3 levels of the structure based on the scope (global, regional and local). The BO and Steering Committee are the highest level, the Focus leaders are the second level and the working groups are the third level. Additionally, define the members of the Steering Committee per megaproject, the additional members of the Backbone organization and the Focus leaders if the issue has two focuses. - The BO is responsible to explain to the partners the megaprojects model: deliverables; mid- and end-term seminar; final deliverable; and final megaproject conference. Use the Timeline template (Annex). - Sign the minute of the workshop as the Partnership Agreement.

Design and Plan	**Task:** Run a second series of workshops (face to face or remotely) to design and plan the project.	
	Facilitator: → Backbone organization **Participants:** → Steering Committee → Focus Leaders **Digital Platform section:** ♦ "Chats, Meetings & Workshops" ♦ "Files" ♦ "Tasks" ♦ "Governance, Structure and Organizational Chart" ♦ "Monitor and Report"	☐ The BO is responsible to coordinate the second series of workshop (face to face or remotely) with the assigned Steering Committee and Focus leaders to co-create a common agenda. ☐ The Steering Committee is responsible of co-create the common agenda that: - Contains a common understanding of the topic and problems that will be addressed in the partnership during the semester. - Align and agree on the Focus Areas that will be addressed in the megaproject. *Focus Area 1: Include Science and Technology topics in elementary schools* *Focus Area 2: Include Engineering and Mathematics topics in elementary schools* - Define strategies and objectives of each megaproject focus for the next six months - Contains a road map that highlights the milestones and deliverables for the next six months. Use the "Megaproject timeline" template (Annex) to be familiarized with the milestones and deliverables. - Contains high level shared measures, key performance indicators (KPIs) form and the definition of success per Focus area. - Enlist digital tools available to ensure the flow of information across the partnership structure *This is an example of the responsibilities of each partner in the "Girls into STEM" megaproject. It shows options on how to use the available resources to reach the common objective:* - *Use AAU students creativity and research abilities to create a STEM handbook for teachers. This handbook will translate SGRE STEM practices into a full interactive content that teachers can use in class to encourage girls to connect with this topic. The content can be divided in SDGs topics and by category such as; audio, images, "how to" videos, experiments and virtual tours. Students can also coordinate physical tours to the wind farms or SGRE operation plants.* - *Use SGRE policies, procedures, processes and employees know-how to gather the data required to develop the STEM handbook. Additionally, use SGRE financial resources to roll out the handbook in schools.* - *Use SDSN Youth GSP know-how on the creation of handbooks and toolkits for teachers. Additionally, use SDSN Youth +900 schools network to roll out the STEM handbook.* - *Use AAU students, SDSN Youth GSP advocates and SGRE CCMs as advocates to reach schools and roll out the STEM handbook to start the implementation in schools. SGRE CCMs can act as advisors to give guidance and clear questions from AAU students and GSP advocates during the roll out in schools, as they have more seniority and experience in the field.* *KPIs form to track progress of the semester projects and handbook roll out:* - *Number of Science and Technology topics covered in the handbook* - *Number of Engineering and Mathematics topics covered in the handbook* - *Number of SDGs covered in the handbook* - *Number of schools reached out to present the handbook* - *Number of direct presentations in schools, including classroom activities* - *Number of schools already implementing the handbook* - *Number of rejections and why schools were resistant to use the handbook*

Multi-Stakeholders Partnership for SDGs

<table>
<tr><td rowspan="6">Implement</td><td colspan="2">Task: Define regional/local working groups and Megaproject run the conference</td></tr>
<tr>
<td>Facilitator:
→ Backbone organization

Participants:
→ Working groups
→ Focus Leaders
→ Steering Committee</td>
<td rowspan="2">☐ AAU HUB students choose their Focus area and form their own working groups with colleagues from the same discipline. They are also responsible to select the Deputy Leader.

☐ The BO is responsible to ensure that each working group has at least one member of each organization. Additionally, the BO is responsible to arrange the working groups per Focus area and coordinate the megaproject conference where the megaprojects and focus areas are explained to the students of the AAU HUB.

☐ The Steering Committee will appoint the Focus Leaders, the Working Group Leaders for each working group ones the groups are formed.</td>
</tr>
<tr>
<td>Digital Platform section:
♦ "Governance, Structure and Organizational Chart"
♦ "Chats, Meetings & Workshops"</td>
</tr>
<tr><td colspan="2">Task: Cascade common agenda, shared metrics and assign functions and activities to the working groups</td></tr>
<tr>
<td>Digital Platform section:
→ Working Groups Leaders
→ Working Groups
→ Backbone organization</td>
<td rowspan="2">☐ Working Group Leaders are responsible to cascade the common agenda and shared metrics of the megaproject to their working groups. Additionally, they will assign functions and activities and allocate human and financial resources to the working groups. Ensure that working groups take on roles that reflect their core competencies. Ensure they have the resources needed in terms of people, budget and time to perform their functions and activities

☐ Working group members are responsible for develop the project, create solutions to solve the problem and achieve the objectives defined in the common agenda. Additionally, they are responsible to working groups aligned to the timeline.

☐ Backbone organization is responsible to coordinate the Kickoff meeting or "Startup seminar" that convene the Steering Committee, focus leaders, working group leaders and deputies.</td>
</tr>
<tr>
<td>Digital Platform section:
♦ "Files"
♦ "Tasks"
♦ "Chats, Meetings & Workshops"</td>
</tr>
</table>

<table>
<tr><td rowspan="6">Monitor and Report</td><td colspan="2">Task: Track activities, collect data and report progress against KPIs and objectives</td></tr>
<tr>
<td>Responsible:
→ Working Group Leaders
→ Focus Leaders
→ Backbone organization</td>
<td rowspan="2">☐ Working Group Leaders are responsible to Monitor and Report (M&R) the activities developed by their working group during the project with 1:1 meetings or group meetings. They are responsible to ensure that working groups fill in the KPI forms and they deliver results on time aligned to the Timeline. "Monitor" means track the progress of the activities with the KPI form on an ongoing basis. "Report" comprises the KPI forms collection and upload of information in the digital platform.

☐ Focus leaders are responsible to gather, process and run analysis with the data reported by the WGL in order to develop a consolidated report to be presented directly to the Steering Committee and indirectly to the Backbone organization and in the mid- and end- term seminar.

☐ Backbone organization is responsible to coordinate the mid- term seminar where students meet with other working groups on the same focus to engage, share progress and knowledge.</td>
</tr>
<tr>
<td>Digital Platform section:
♦ "Tasks"
♦ "Monitor and Report"
♦ "Chats, Meetings & Workshops"</td>
</tr>
<tr><td colspan="2">Task: Record and share documents</td></tr>
<tr>
<td>Responsible:
→ All partners
→ Backbone organization</td>
<td>☐ All partners are responsible to upload the documents generated during the partnership process in the digital platform. In this way, partners can access to the documents and use them in the future to learn and improve from the outcomes.</td>
</tr>
</table>

Digital Platform section: ♦ "Files"	☐ All documents such as presentations, meeting minutes, deliverables and working documents created during the megaproject will be available for everyone and will help to identify gaps and opportunities to improve and change**.**

Evaluate and Learn

Task: Final project report	
Responsible: → Working Groups **Digital Platform section:** ♦ "Results and Lessons Learnt"	☐ Working groups are responsible to deliver their project's results as the four and final deliverable. The final project report need to be delivered to the university supervisors, Working Group Leader, Focus leaders, Steering Committee and Backbone organization involved in the megaproject. Additionally, working groups need to prepare a synthesis and presentation of their results for the end-term seminar where all groups working in the same focus will meet to share results, experiences, knowledge and lessons learnt. This short presentation can be used for the next megaproject conference.
Task: Collect stakeholder's feedback and lessons learned. Assess results to identify opportunities and areas for further action or course correction	
Responsible: → Backbone organization → Steering Committee → Working Group Leaders **Digital Platform section:** ♦ "Monitor and Report" ♦ "Results and Lessons Learnt"	☐ Ones the projects are finished and completed, the Backbone Organization is responsible to design and send out a simple survey to the Steering Committee, Focus Leaders, Working Group Leaders and a number of members from the working groups to collect valuable feedback and lessons learnt from all levels within the megaproject. The survey will be performed every three months or after the completion of a project. ☐ The backbone organization is responsible to collect and analyze the data from the final project reports, surveys and KPIs forms to develop a high-level Final Megaproject Report after the completion of a megaproject. The BO is also responsible to convene the Steering Committee, Focus Leaders and WGL to a third series of workshop to discuss the Final Megaproject Report and trigger the "Learning by doing process" for the next megaprojects. The "Learning by doing process" is an iterative process based on the KPI analysis, feedback from surveys, regulations and new challenges to get the lessons learned and opportunities of change to adjust and redefine goals and strategies to improve in the upcoming megaprojects. It also allows partners to learn from their own work performed and from each other's strengths.
Task: Share lessons learned with internal stakeholders	
Responsible: → Backbone organization **Digital Platform section:** ♦ "Results and Lessons Learnt"	☐ The backbone organization is responsible to share the Final Megaproject Report that contains megaprojects results, qualitative feedback and lessons learnt and quantitative achievements with all internal partners at local, regional and global level.

Sustain Impact	**Task:** Scaling up and replicate impact at different levels

Facilitator: → Backbone organization **Participants:** → Steering Committee → Focus Leaders → Working groups leaders	☐ The backbone organization is responsible to coordinate the third series of workshop (face to face or remotely) with the Steering Committee, Focus Leaders and WGL. ☐ The Steering Committee needs to identify opportunities to scale up and decide which interventions can be replicated taking into account the Final Megaproject Report that serves to decide what can be scaled up at regional and global level and/or replicated in a new location.
Digital Platform section: ♦ "Chats, Meetings & Workshops" ♦ "Results and Lessons Learnt"	

Task: Exit assessment and Invite new partners	

Responsible: → Steering Committee → Backbone organization	☐ The Steering Committee is responsible to decide which partners will continue and define a list of new organizations that can be new potential partners for the upcoming megaprojects. This discussion need to take place in the third series workshops. ☐ The backbone organization is responsible to communicate both, the exit and the inclusion of a new potential partners to all members of the megaproject and partnership
Digital Platform section: ♦ "Governance, Structure and Organizational Chart" ♦ "Chats, Meetings & Workshops"	

Task: End-term seminar and megaproject conference to communicate impact story to internal and external stakeholders	

Responsible: → Backbone organization → All partners	☐ Backbone organization is responsible to coordinate the end-term seminar and the megaproject conference where the previous megaproject's results and new megaprojects are presented to AAU HUB students. Therefore, the megaproject conference also serves as the start-up seminar for the next semester students involved in the megaprojects. ☐ Backbone organization is responsible to communicate successful interventions and impact stories with internal and external stakeholders to build support. The impact stories can be communicated with illustrative anecdotes and after the discussion of the Final Report. The impact stories content will be discussed in the third series of workshops. ☐ The backbone organization is responsible to coordinate the first series of workshop (face to face or remotely) with all new potential partners to start the multi-stakeholders partnership lifecycle again with new megaprojects.
Digital Platform section: ♦ "Chats, Meetings & Workshops" ♦ "Impact Stories"	

9. Perspectives

Even though in this report the multi-stakeholders partnership lifecycle model is used as a framework to guide a partnership of three organizations across sectors –SGRE from private sector, SDSN Youth from public sector and AAU from academic sector– this framework can also be used in any level of formal collaboration presented in the second chapter of this report –Cooperation between business partners along value chains; Project-level partnerships; Industry-level alliances;

Coordination between different levels within a company and types of partnership– or in any type of informal collaboration that involves more than one stakeholder. Collaboration examples include, but are not limited to:

- Areas in the same organization
- Between Universities
- Between Business

- Between NGOs
- Business – University
- NGO – University

Likewise, the multi-stakeholders partnership lifecycle model can be used to co-create solutions to solve other systemic goals in the short- and long- term and to tackle divers SDGs not only quality education (SDG 4) and gender equality (SDG 5).

The validity and reliability section of this report presented two cases where the proposed multi-stakeholders partnership lifecycle was used as a framework by SDSN Youth Global Schools Program to develop a handbook for teachers that will be rolled out in hundreds of schools all over the world. This handbook has the objective to strength the partnership with teachers from the GSP network and guide them on how to integrate the SDGs in their schools. The handbook contains guidelines, activities and projects than can be developed in the classrooms in order to encourage students to learn about the SDGs in a more dynamic way. The handbook roll out will start in September 2020.

Additionally, the proposed multi-stakeholders partnership lifecycle will be used as a framework by SGRE to develop a digital collaboration platform. This platform has the objective to connect SGRE with different universities around the world in order develop research projects and co-create innovative solutions to solve complex problems in terms of society, economy and environment. The first stage of this digital platform will start by connecting SGRE Aalborg manufacturing plant with Aalborg University to co-create solutions aligned to the Circular Region Megaproject of AAU. The megaproject goal is to transform Northern Jutland in the first circular region in the world. At this moment, the megaproject is collaborating with the municipality of Aalborg (AAU 2020). The author of this report developed a strategic plan using the multi-stakeholders partnership lifecycle and the five best practices presented in this report guide SGRE and AAU in the process to form a partnership between business and academia in order to develop projects aligned to the Circular Region Megaproject. The detailed strategic plan can be found in the following **link** (Rodriguez 2020).

10. Reflection on the internship and student work, Bibliography and Annexes

10.1   Reflection on the internship and student work

The internship at SDSN Youth and the student work at SGRE have significantly improved my knowledge and overview on how corporate and the non- governmental sector address SDGs and the critical role each of them plays to trigger an mobilize resources to achieve the 2030 sustainable agenda.

During the thesis project, all the goals stipulated with each of the organizations were accomplished such as: knowledge and use of relevant theories and methods in relation to partnership using scientific methods. Additionally, the proposed solution will enable to create interventions aligned to the "Diversity & Work-Life Balance" in SGRE particularly on the Program 5" Changing the face of engineering" that intends to encourage women to take up STEM degrees by partnering with elementary and high schools to develop student programs and projects. It also fulfils SDSN Youth goals such as: to build a partnership between different sectors such as academia, business and NGOs that have a common goals of tackle long-term sustainable challenges, specifically SDG 4 – Quality Education; and to increase the number of schools that include the SDGs on their curriculums.

Additionally, during the thesis project I developed high skills such as multitasking, communication, remote working, collaboration in virtual teams, project management, critical thinking, real problem solving, system thinking and holistic approach. All of these skills give me the basis to understand from different perspectives the problem posed in this report: encourage girls in STEM education. Additional, I developed specific skills required by AAU such as: plan the thesis project at a high professional level by coordinating three different organizations that participate through the entire project; support the proposed solution with theories and empirical findings; present the validity and reliability of the solution proposed; present the urgency and relevance of the problem formulated and the impact of proposed solution at worldwide level but also focused on business, NGO, and academia; and present the solution as an strategic plan that synthesize and critically assess theoretical and empirical findings. The solution includes interdisciplinary discussions between the three sectors to acquire the newest knowledge and develop the strategic plan as a solution.

Developing the internship and the student job in both organizations -SGRE and SDSN Youth- at the same time gave me the opportunity to compare various aspects such as: their working processes, average time for the decision-making process to carry out activities and develop initiatives. What surprises me about SDSN Youth is that they are faster to carry out projects and implement initiatives, perhaps this is because the teams are made up of young people, by contrast in SGRE the processes are more time consuming and the decision-making process must go through several levels at the organization. On the other hand, it is clear that SGRE has more economic resources to carry out initiatives that require economical budget but having economical budget does not necessarily mean that initiative will have a greater impact, actually SDSN Youth develop initiatives with great impact with little budget.
SDSN Youth teams are made up of young people, this can be a trigger to feel more dynamism in the working teams, more motivation and greater speed in the implementation of actions in comparison with SGRE. I also visualize that in SDSN Youth it is very easy to attract external partners and make more informal collaborations that do not require financial transactions either to obtain knowledge, guidance, trainings, conferences or make content for schools such as toolkits or handbooks. On the other hand, in SGRE takes more time to collaborate with external partners since more formal contracts are needed.

Another great surprise was the level of organization and structure in both organizations. SGRE is a very structured organizations with more than 24,000 employees worldwide. It has well-structured programs and teams across the world. On the other hand, SDSN Youth GSP has a global footprint in more than 900 schools worldwide but with a smaller staff of 400 members, only 15 are fixed staff the remaining are volunteer advocates. On the other hand, the onboarding process was much

more efficient and standardized in SDSN Youth than in SGRE as it was 100% digitally, clear and complete. Due to the structured onboarding process, it was easier to understand the structure, programs, action plans and my role and responsibilities with SDSN Youth rather than in SGRE. Moreover, both organizations are familiarized with virtual teams, in that sense they were not heavily affected by the pandemic. Both organizations are prepared and have clear procedures for doing home office and managing virtual teams with the help of digital tools.

This semester in particular had a major challenge, the COVID-19 pandemic that has had a great impact not only on the global social dynamics but also on the entire global economy and organizational environments. The virus impacted the entire population all over the world and unleash a series of challenges, it forced us to move to a completely virtual work environment. On the other hand, the pandemic encourages the entire population to act in partnership at different levels in order to overcome the difficulties presented by the virus. Collaboration and partnerships were developed in different levels and between different stakeholders, among the clearest is the collaboration between the health sector, the private sector and research sector for the development of the acclaimed vaccine against COVID-19. Additionally, the pandemic rise awareness about social, environment and economic threats that the world is facing and poses the urgency to take action in favor of a more sustainable development to put an end to these threats. Moreover, many companies were affected since they were not prepared for the transition from physical working teams to virtual teams working through digital platforms. Organizations need to adapt to this new virtual way of working if they want to survive.

The pandemic impacted my and everybody. In the most direct scenario, it prevented me from doing the internship physically on the SDSN Youth facilities in New York City as planned at the beginning of the semester, instead the internship was carried out remotely. This change slowed down my integration process with the team. Additionally, it prevented me from going to SGRE facilities and it forced me to stay at home for more than 3 months. The pandemic also poses pressure and additional challenges in the Global Schools Program as schools were closed, most of the school cycles were stopped or in the best case they continued remotely. But just as there were challenges there were also great opportunities for improvement, these opportunities were implemented to stay for the long-term such as remote school and virtual working groups.

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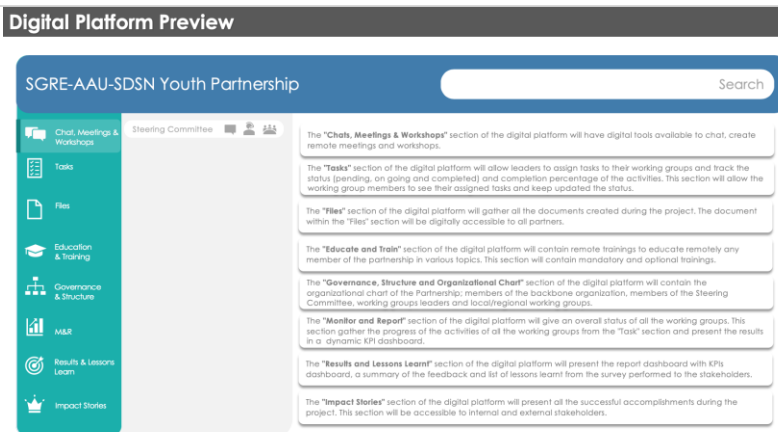
10.3 Annexes

Figure 16 Digital Platform Preview and detail of the 8 sections
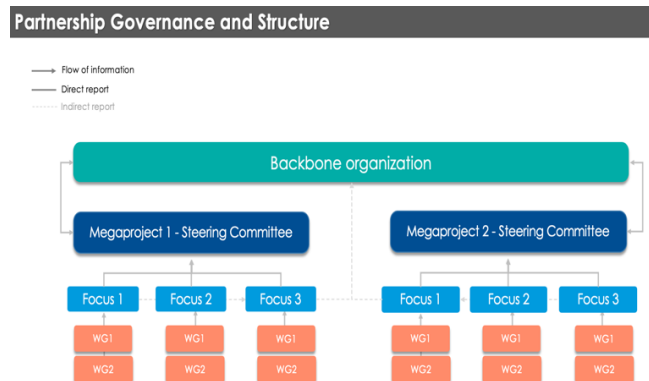

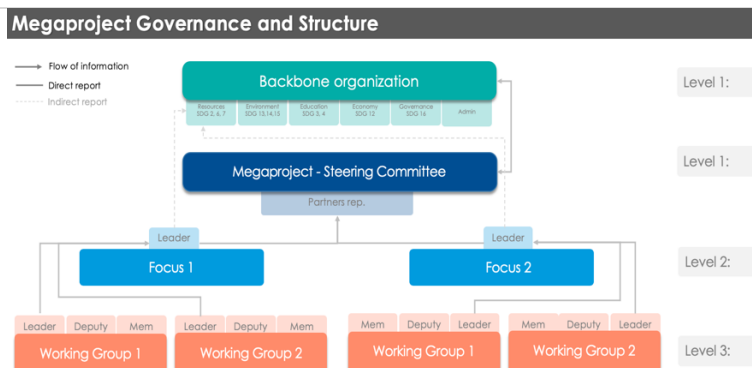Figure 17 Partnership Governance and Structure template (own illustration)

Figure 18 Megaproject Governance and Structure template (own illustration)
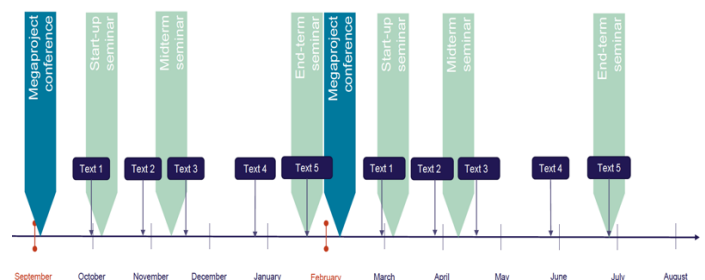

Figure 19 Megaproject timeline (AAU 2020)

Link to high-resolution images (Rodriguez, Microsoft Teams 2020)