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Mapping and stock taking of Scouts for Green Apprenticeship

Country Snapshot Finland

Developed by: Innoventum

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Introduction: definition of the landscape of SDGs and Green Deal implementation in Finland across the VET and business ecosystem

In 2021 Finland was ranked first in an international comparison of sustainable development by the United Nations. Finland has also been in the top three of the SDG index ranking in the previous years, along with other Nordic countries Sweden and Denmark. The SDG index assesses the country's progress in implementing the 2030 Agenda for Sustainable Development and the seventeen Sustainable Development Goals. According to the index, Finland is close to achieving the SDGs related to the alleviation of poverty, health, education, water, energy, reduction of inequality, peace and the rule of law. However, there are also challenges in Finland related especially to combating climate change, the need to develop ways for more sustainable consumption and production patterns, as well as biodiversity loss.¹

Finland's efforts to incorporate the SDGs into every part of the society have received international praise due to how the society as a whole participates in the implementation of the 2030 Agenda. In the spring of 2021 the Finnish National Commission on Sustainable Development received the international Catalyst 2030 Award for sustainable development.² It is also notable that Finland includes sustainability assessment to its annual cycle of policy planning, budgeting and reporting. For example, the Finnish Ministry of the Environment compiles an Annual Climate Change Report, which describes the emission reduction trends in Finland as well as the implementation of emission reduction measures, including their adequacy relative to the national and international targets. This report is submitted to the Finnish Parliament, and it serves as the basis for public discussion on climate change mitigation and adaptation.³ Finland also reports regularly to the European Commission and UNFCCC Secretariat on any achievements made in reducing greenhouse gas emission. The party responsible for the national monitoring of this date is the Statistics Finland, which also gathers the country reports on national climate policy measures.

The overall goal of Finland is to go further than the current European Union Green Deal; Finland is pursuing CO-neutrality in 2035 and after that CO-negativity. Finland aims to achieve this by investing in renewable energies, adding more flexibility to the energy sector, and investing in cross-sector energy solutions.⁴ Already Finland is considered as a pioneer of the energy storage-sector and will need more vocationally educated experts in that area in the coming years towards the 2035 CO-neutrality goal. Although Finland is close to achieving many of the SDGs related to social and economic sustainability, the key challenges lie in consumption and production patterns as mentioned below, which also contribute to other social and health challenges, such as increased obesity among the population, as well as gender equality challenges, such as gender-based violence and labour market disparities (i.e. gender paygap). Finland's social security system and high-quality educational opportunities, which are available widely to the Finnish population, have prevented a more wide ranging social exclusion of citizens.⁵

Among the benefits that assist Finland in achieving its SDGs is the fact that the nation is Europe's most forested country, with more than 70 % of its land covered with forests. About 17,000 km² of Finnish forests

¹ Press release by the government communications department: Finland Ranks First in International Sustainable Development Comparison. (2021, June 14). United Nations Sustainable Development Report, Voluntary National Review (2020).

² Ibid.

³ Finnish Ministry of the Environment.

⁴ Greiner (2022).

⁵ Finland: Voluntary Country Review (2020).



are strictly protected by environmental laws. However, the ecological footprint of an average Finn has been historically about 7,6 global hectares. This amounts to more than three times larger ecological footprint than the global average. In addition, the average Finn also consumes about 100 tonnes of resources every year, including the hidden material flows that lie behind the production of all goods and services.⁶ While these figures are high due to Finland's high standard of living, large-scale intensive metal and forest industries, and the high demand for energy due to the country's cold climate and long distances, there is also a continuous effort to lessen these figures through educating future professionals in the VET sector and cooperation with national and international businesses.

Altogether Finland has a climate change policy planning system based on the National Climate Change Act, which includes a Long-Term Climate Change Policy Plan, Medium-Term Climate Change Policy Plan, Adaptation Plan and a separate Energy and Climate Strategy. The Medium-Term Climate Change Policy Plan plans measures to mitigate greenhouse gas emissions cause by human activity in terms of building-specific heating and cooling, agriculture, transport and waste-management and in terms of industrial F-gases.⁷ These medium-term plans are adopted in Finland once per electoral term (every four years). For example, this planning and scheduling has allowed Finland to decrease emissions from the waste management sector by 61 % from 2005 to 2023. The aim also is to halve the amount of food waste in industrial kitchens between 2005 and 2023.

On an individual level, Finnish people consume more meat than dietary guidelines recommend. Schools and places of employment have therefore begun to encourage people to lessen meat consumption. Businesses, on the other hand, also encourage their consumers to change their carbon footprint by offering more sustainable options. It should also be noted that more than half of the Finnish population live in municipalities that are actively engaged in climate action. These actions include climate strategies and energy efficiency agreements, as well as specific national and EU-level projects. There is also a sense of healthy competition between municipalities on who can be the "greenest".

In the midst of all this lies the need for future-thinking vocational education that takes into consideration the national challenges in reaching the SDGs. The creation of jobs within vocational education will depend largely on whether Finland is able to generate the needed high-level expertise to create new technologies associated with climate change negation. This technology needs not only find customers in the domestic market, but also in the international markets in order to be economically sustainable. At the centre of this shift is the need to provide employees further vocational education and training that they will require for innovative climate solutions. Finland's goal is to provide life-long learning, that is long-term education and training, and development, to ensure that the work-force has the skills needed to guarantee the functioning and competitiveness of Finnish society.⁸ Of all levels of the Finnish educational system, vocational education and training have the closest connection to business and industry and the society as a whole. It is no wonder then that the skills needed by the current and future Finnish labour market are first reflected in vocational education and that the vocational schools are at the forefront of developing learning and training content that suits the needs of businesses and other employers.

In 2022, Finland published a new sustainable development strategy that is meant to strengthen the work advancing sustainable development across government terms. The overall vision of the strategy is to create a prosperous and globally responsible Finland that protects the carrying capacity of nature. The strategy is

⁶ Lyytimäki (2007, 2014).

⁷ Reports of the Ministry of Environment (2017).

⁸ Ibid.



based on six areas where a systemic change is needed in order to achieve a sustainable future: 1) sustainable consumption and an economy with jobs that promote well-being 2) education, skills and sustainable lifestyles 3) well-being, health and social inclusion 4) a sustainable energy system 5) a food system that promotes well-being 6) use of forests, waters and land in a way that strengthens biodiversity and advances carbon neutrality.⁹ At the centre of these advancements is to secure the robustness and flexibility of the Finnish vocational education system and foster its links to businesses.

Interviews with local young adults and adults on SDGs and the Green Deal

As part of this report, the Finnish project partner Innoventum interviewed six (6) young adults and adults in relation to the development and deliverance of Sustainable Development Goals and the Green Deal. Four of the interviews were in Finnish and two in English. Four of the six respondents had not heard about the United Nations' Sustainable Development Goals. The two respondents who had, could name 1-2 of the SDGs; namely no poverty, zero hunger, and gender equality. However, four of the six respondents knew what the Green Deal is and could tell in detail what the Green Deal consists of.

The respondents' remarks about the Green Deal included:

- “As a student, I may not be very familiar with the Green Deal. However, based on my limited knowledge, the Green Deal is a policy initiative introduced by the European Union (EU) to address climate change and promote sustainable development. It aims to make Europe the world's first climate-neutral continent by 2050.”
- “Moving away from fossil fuels to more sustainable energy forms and decreasing the consumption of environmental resources by e.g. advancing recycling solutions.”
- “Green Deal is an international agreement as well as a series of national agreement, which help lessen the impact of climate change by encouraging the use of green solutions in different sectors, such as in technological industries.”
- “Green Deal means a shift in the (economic) system towards a more ecologically sustainable development that does not base itself to overconsumption of nature.”

Half of the respondents believe that information about the Sustainable Development Goals will be needed in their daily lives, work, or studies. Comparably, four of the six respondents think that the Green Deal will affect their daily lives. Also, the same number of respondents (approximately 66 % of total respondents) would like to know more about the Sustainable Development Goals and the Green Deal.

When asked what they were interested in learning more about in regard the SDGs and the Green Deal, the answers included:

- “How to utilize them in my everyday life and work.”
- “How we can tell people about them and market them in simple enough terms so that ordinary citizens will understand what they are about and consider them as threats or climate nonsense.”

⁹ Press release: Finland publishes a new sustainable development strategy (2022).

- “I would like to know how vocational education and future career may intersect with sustainability and the SDGs. Are there emerging job opportunities in green industries, renewable energy, sustainable agriculture, or other sectors aligned with these goals?”

All in all, most of the respondents are aware of the basics in regard to the Sustainable Development Goals, while their knowledge of the Green Deal is more precise. Most of the respondents also agreed that they need more information on the SDGs as it influences their lives already or will influence them in the future.

Quantitative indicators on indicators on SDGs and Green Deal implementation across the VET and business ecosystem in Finland

In Finland 250,000 people attend vocational learning each year, with 70,000 people attaining vocational degree each year.¹⁰ There are about 161 different vocational degrees in Finland and education for sustainable development is included in every one of these degrees. In practice this means educational content, such as finding out the carbon footprint of the school or a workplace, understanding the significance of recycling for the student's subject of study or future field of work, or the application of sustainable materials in the future profession. Moreover, the students are taught about resource efficiency widely.¹¹ All Finnish vocational degrees include shared learning, which is meant to strengthen the wider work-life skills necessary for future employment. The compulsory sustainable development learning in Finnish vocational schools focuses on the following topics: 1) understanding the need for sustainable development 2) systemic thinking and circular economy 3) ethical perspectives.

The comprehensive aim of Finnish vocational education is to teach life-long sustainable development skills.¹² From the viewpoint of vocational education and training, the sustainable development goals (SDGs) and the basics of a carbon-neutral circular economy must be offered to all VET students, regardless of the field they are studying. For example, circular economy solutions, i.e. the tools for performing the work in a new way, are considered an advanced competence. In practice, the studies show how circular economy can be implemented in workplaces such as construction sites, hairdressers, nursing care and sorts of primary production. Another aspect taught in the Finnish VET environment is the reflection of a global perspective to delivery chains. The students are trained to consider whether it is always necessary to choose the most cost-effective option, or whether to consider such issues as the employee rights in primary production and the environmental effects of industrial production.¹³

In the context of Finnish VET it is considered important to discuss on a field-specific basis of how the students' competence will be developed from the point of view of sustainability. This is a new type of educational thinking and it related to wide range of subjects, such as:

- business activities (how to procure things responsibly?)
- logistics (what are the environmental effects of transports?)
- manufacture of materials and products (waste, management of the product life cycle, recycling and re-use of material)
- trade (how to make responsible choices as the consumer?)
- competence in practical everyday tasks concerning society as a whole (everyday choices and actions).¹⁴

On a practical level the Finnish vocational degree consists of vocational studies (145 points) and shared subjects (35 points). These shared subjects are the same for all students on a national level and they consist of communication and interaction know-how, mathematics and nature-based learning, as well as societal

¹⁰ Sirene: interdisciplinary network of environmental and sustainability education research (2022).

¹¹ Finnish Department of Education, Kestävä kehitys ammatillisen koulutuksen tutkinnon perusteissa.

¹² Ibid.

¹³ Pajunen. Sustainable Development as Vocational Competence.

¹⁴ Ibid.

and work-life skills. Sustainable development has previously been an elective part of vocational studies in Finland, but as discussed above has become more ingrained in basic studies in the previous decade.¹⁵

In contrast to the VET sector's rapid adaptation of the sustainable development goals within their subject matters and competences, the Finnish business sector has been slower in its adjustment to the SDGs. By 2020, only 13,5 % of Finnish companies had integrated the SDGs into their business of sustainability strategies. According to Time to Act: Assessing Finnish Companies' Alignment with SDGs, Finnish companies rank SDG8 (decent work and economic growth), SDG12 (responsible consumption and production) and SDG13 (climate action) as the most important, relatable and achievable goals. Conversely, the report finds that Finnish companies find SDG5 (gender equality), SDG10 (reduced inequalities) and SDG16 (peace, justice and strong institutions) as the most insignificant.¹⁶

Questions arise on how prepared are Finnish VET teachers to teach education for sustainable development? Indeed, in order to imprint the students of the importance of environmental matters and of positive attitudes towards the environment, the VET teachers must be well-prepared to teach SDG-related issues for maximum impact and correct information. This type of education includes awareness, knowledge, attitudes, skill and participation, which are also listed as UNESCO's goals for environmental education. Environmental education is often included in Finland within the education for sustainable development, which offer the students further context on the significance of the SDGs in real life outside learning scenarios. It is therefore significant that knowledge of sustainable development is one of the aspects that a student is evaluated in their vocational education.¹⁷

Finnish vocational schools may also apply for an environmental certificate, which are given on the criteria of planning, organization and development of environmental preparedness, teaching, participation and cooperation in environmental matters, as well as structural means meant to lessen the environmental impact of education.¹⁸

Overall the teaching and learning of sustainable development in Finnish VET is divided into the following sections: ecological, social, economic and cultural sections. Furthermore, environment and sustainable development are considered on a subject-based level thus; 1) the environmental impact of produced goods and services 2) materials and ways of working that reduce environmental impact 3) the sorting of waste and by-products in an environmentally friendly manner 4) profession-based legislation and statutes.¹⁹

According to a thesis research from 2020, 67 % of Finnish VET students are evaluated to have good knowledge and skills of sustainable development.²⁰ Also, actionable knowledge was found to be stronger in vocational students than theoretical knowledge of sustainable development. The students' knowledge was strongest in the area of social sustainable development, and weakest in the area of ecological sustainable development.

¹⁵ Finnish Ministry of Education (2023).

¹⁶ Time to Act: Assessing Finnish Companies' Alignment with SDGs (2020).

¹⁷ Mustaniemi (2020).

¹⁸ Ibid.

¹⁹ Ibid.

²⁰ Ibid.

Those studying humanist subject areas also demonstrated stronger knowledge on sustainable development than those who studied natural sciences or technical and transportation -related degrees.²¹

Both the VET and the business sector in Finland have recognized that in the future working life there will be an increased and specialized need for workers whose education is based on the in-depth knowledge of the sustainable development goals. Research has shown that many Finnish VET teachers have both theoretical and practical work experience of incorporating the SDGs into their teaching and frequently demonstrate theory through practical examples.²² It is also notable that in the Finnish educational system the teachers have a lot of freedom regarding how they interpret the teaching content. Instead of contributing to a disparity in the quality of teaching, this fact actually strengthens the quality of Finnish educational institutions and allows a more diversified approach to teaching, learning and training.

The past decade has shown that the Finnish people's relationship with nature and the environment has changed. The Finns have always been close to nature and many people still live near agricultural centres. Finland is home to many national parks and every Finn knows the Jokamiehenoikeudet ("Freedom to Roam"), a set of rules instilled in every Finn as a child on how to treat nature with respect. However, more Finns are moving into cities, which means that they are becoming somewhat alienated from everyday access to nature and forests. This results in an increased need to teach youngsters the value of environment and the need for sustainability. Finnish VET learning has adapted transformative learning in order to instill to the VET learners the understanding of the value of our environment. Transformative learning means that the learner is profoundly changed by what they learn. Moreover, transformative learning emphasizes self-knowledge, future skills, life experiences, ways of thinking and self-motivation.²³ Especially the learners studying the vocational qualification in Natural and Environmental protection have benefitted from transformative learning.²⁴

In her thesis on sustainable development in Finnish vocational degrees, Satu Nygård emphasizes that the vocational teaching of sustainable development should take into consideration the following aspects:

- Transformative changes: learners should see the reality as it is and view how they can develop sustainable solutions for the future.
- Structural changes: attention needs to be paid to the structural reasons for sustainable development. Teaching should encourage the learners to seek alternatives to the current consumer-based society.
- Technological future: sustainable development must take into consideration the opportunities and challenges brought on by technology. Critical thinking and sustainable values are becoming more important in the teaching of sustainable development, because the illusion of technology as an answer to problems challenges the need for sustainable development.²⁵

Besides learning about the needs for sustainable development for their future working life, the learners should also grasp how their own choices inform sustainable development. Nygård further argues that there needs to be a shift in the operational culture so that sustainable development is seen as a citizen skill, as well

²¹ Rökköläinen (2017).

²² Mustaniemi (2020).

²³ Nygård (2021).

²⁴ Ibid.

²⁵ Ibid.

as a civilizing aspect included in all vocational degrees, which itself would strengthen vocational education and its role in Finnish society.²⁶

According to Nygård, the vocational teaching of sustainable development in Finland currently lacks hope for the future and the discussion of feelings that climate change causes in individuals. She explains that in many instances vocational learners learn about sustainable development in practice, but lack theoretical skills needed to understand the knowledge-based background of sustainable development.²⁷

In 2021 the Finnish government launched a 3,5 million euro funding opportunity for vocational education providers to develop a training programme for sustainable development and green transition in vocational education and training. This is called the Government funding programme for sustainable development green transition advancement and it runs from 2022 to 2023.²⁸

When discussing how Finland and its educational system corresponds to SDG4 (quality education), it can be determined that the Finnish government continuously assesses the recent reform of the vocational education and training, and has consequently found that the system has increased its flexibility in terms of access and completion.²⁹ In other words, students have more flexibility to plan and execute their studies, as well as how to complete their studies. Since the 2010s Finland has been at the forefront of hybrid and remote learning, competences, which made transition into pandemic-time teaching easier for Finland than for many other countries.

In the business sector, the SDGs offer 12 trillion US dollars in sustainable business opportunities concerning cities, food, health and energy alone.³⁰ Among the recognized barriers for businesses in the adoption of SDGs are the scope of many companies to understand the scale and interconnectedness of the SDGs, as well as the fact that there are currently no reporting standards or auditing procedures for the SDGs in the business sector.³¹ According to recent research, what encourages the adaptation of the SDGs in businesses include their company's commitment to values of sustainability and the employees' active participation. Furthermore, businesses have recommended the clarification of the basic concept of the SDGs in practice, which they see would help in their adaptation, engagement of employees, as well as establishing the clear benefits in relation to the adoption of SDGs.³²

All in all Finland has received 695 million euros for the implementation of the national Green Transition Plan.³³ The funding is considered elemental in the development of Finland's recovery and resilience plan in the aftermath of the pandemic and onset of the War in Ukraine. The goal of Finland is to be the leader in the hydrogen and circular economies, and in emission-free energy systems along with other climate and environmental solutions. Furthermore, the War in Ukraine has awakened Finland to consider its self-

²⁶ Ibid.

²⁷ Ibid.

²⁸ Ammatillisen koulutuksen kestävä kehityksen ja vihreän siirtymän kehittämisohjelma käynnistyy (2021).

²⁹ Prime Minister's Office: Progress on SDG's in Finland: Assessments by the Government and Civil Society Organizations (2020).

³⁰ Kouri (2022).

³¹ Ibid.

³² Ibid.

³³ Ministry of Finance: Green Transition – Recovery and Resilience Plan.

sustainment in the energy sector, although compared to other European countries, Finland has been among the most energy self-sustained for many years.

The Green Transition projects funded by the Finnish government cover areas such as:

- Clean energy production, including solar power, offshore wind energy, biogas and waste heat recovery.
- Industrial circular economy solutions and low-emission innovations, e.g. investments in hydrogen technology and circular economy demonstration plants.
- Adoption of new technologies, services and practices in the construction sector.
- Support for the public charging infrastructure for electric vehicles.
- Nature-based solutions, such as gypsum treatment of arable land to reduce the nutrient load in the Baltic Sea.³⁴

As the United Nations 2030 Agenda for Sustainable Development specifically calls on businesses to apply their creativity and innovation to solving sustainable development challenges, the Finnish government has provided local businesses funding and a roadmap for a series of solutions that would strengthen Finland's energy and environmental sustainability. Likewise, the vocational education sector has quickly adapted to teaching practical and theoretical skills needed by the future workforce to weather the challenges brought by Finland's tight schedule towards CO-neutrality in 2035. Although there are still significant areas of development in the VET sector regarding the teaching and learning of SDG-related skills, the structure of the Finnish vocational education, high quality teaching and increasing number of VET learners, is gearing towards the necessity of including the SDGs as core part of vocational learning.

³⁴ Ibid.

Qualitative descriptions of SDGs and Green Deal implementation in Finland across the VET and business ecosystem

Approximately half of the students in Finland who complete their basic education continue to vocational education and training. The Finnish VET sector is known internationally for its qualified and competent teachers, as well as its robustness as a publicly funded system that covers all sectors of the economy. Finland is also ranked first in the Worldwide Educating for the Future Index (WEFFI), which assesses the extent to which education systems are equipping youngsters aged 15 to 24 with the skills needed for the future.³⁵

There is also a high demand outside of Finland to buy services from Finnish education technology providers that specialize in vocational education and training. It is notable that the Finnish education technology market is in the same range as the state budget and it grows 20 % annually in terms of corporate turnover. Altogether there are over 300 education technology companies in Finland aimed at solving global challenges related to education, including the teaching of the sustainable development goals. Through continuous investments into the VET ecosystem, Finland supports vocational education solutions that provide work life skills and qualifications needed for sustainable living and growth.³⁶

The Finnish educational technology sector focusing on the vocational education and training sector can be divided into two types of organizations; the educational institutes' export companies, that offer both formal and informal education and training, as well as to a series of content providers, such as digital teaching and learning providers.

In 2021 the consulting company FIBS produced The Sustainability in Finland Survey, which found that unprecedented and extensive changes have occurred in the sustainability efforts of Finnish companies since 2020. As of 2020, the sustainability activities of businesses can be seen as more strategic, goal-oriented and organized than before. However, the survey found that the business opportunities of sustainable development remain unexplored, while 93 % of Finnish companies do include sustainable development in their strategies.³⁷

Finland is also a part of the European Union Sustainable Growth Programme, which is part of the EU's one-off recovery package "Next Generation EU (NGEU)". The NGEU is divided into seven instruments, of which the Recovery and Resilience Facility (RRF) is the largest. In Finland, the Sustainable Growth Programme will focus on four key elements:

- 1) A green transition that will support structural adjustment of the economy and highlight carbon-neutral welfare society.
- 2) Digitalization and a digital economy that will increase productivity and make services available to all citizens.
- 3) Increase in the employment rate and skill levels that will in turn accelerate sustainable growth.
- 4) Access to health and social services will improve and they will become more cost-effective.³⁸

³⁵ Halonen, M. Laine A. Simanainen, M. Lummaa, M. Jonsson, H. (2022).

³⁶ Ibid.

³⁷ Press release: A Dramatic Change in the Sustainability Work of Finnish Companies (2021).

³⁸ Ministry of Finance Finland: Sustainable Growth Programme in Finland – Boosting reforms and investments.

On practical level, the Sustainable Growth programme aims to the following changes in Finland:

- Reduction of greenhouse gas emissions
- Increased productivity
- Raised employment rate
- Quicker access to care
- Promotion of regional, social and gender equality.³⁹

Already in 2017 the Finnish Business and Sustainable Development Commission found that changing consumer demands relate directly to sustainability. Small and medium sized enterprises also benefit from commercial activity in the field of environmental sustainability based on these consumer demands. Consumers pay more attention to carbon emission, energy use, recycling and waste, transportation of products, packaging, digital and environmental footprint and the effect on local ecosystems. While businesses will aim to reduce natural resources and the impact of operations as cost-cutting measures, as well as sustainability measures. Small and medium sized enterprises tend to act as agents of change as they can more easily adapt to changes than larger conglomerates. They also have a role in affecting lifestyle choices of consumers and have more flexibility to experiment and know how to quickly react to consumer trends.⁴⁰

The Green Transition will further the need for highly skilled vocationally educated workers. It is estimated that the greatest employment effect will be seen in the Finnish construction industry by the energy renovation wave, closely followed by the new battery production and recycling ecosystem in Finland.⁴¹ The need for skills that arise from the educational requirements brought on by the green transition are largely pre-existing, and taken into consideration by the VET sector in terms of increased funding, teaching resources and class sizes. There are, however, a set of emerging skills that may be divided into two skillsets; the technical skills, which represent more specialized abilities and knowledge that are needed to perform specific tasks, and meta-skills, that are dependent on particular industry-related skills, which can be utilized to a wide variety of situations.⁴²

A report on the Effects of the Green Transition to the Employment and Educational Requirements of Engineers in Finland, identify a growing need in particular towards the meta-skills. These include continuous learning, teamwork and resilience, which are overall seen as more important than technical skills. The report also recommends considering a faster pace for curriculum update cycles and providing targeted short cycle education modules to match the needs identified in the green transition.⁴³

Finland has also carried out a large-scale national project called Developing Finland's Sustainable Finance Ecosystems. The project has developed and piloted an SDG finance toolkit that provides structure and guidance in four ecosystems:

- 1) Sustainable protein production in Finland
- 2) Carbon neutral society (focus on offshore wind power)

³⁹ Ibid.

⁴⁰ Business Finland/ Experience Commerce Finland: Sustainability Playbook for Digital Commerce SMEs.

⁴¹ Wikman, M. Nyrhilä, L. Roschier, S. (2022).

⁴² Ibid.

⁴³ Ibid.

- 3) Climate smart water solutions in emerging markets
- 4) Technical and vocational education and training in emerging markets⁴⁴

The successful exportation of Finnish vocational education via the education technology markets is therefore largely based on the exemplary adaptation of the SDGs and green transition goals based on identified international needs. Finland also needs to demonstrate that they are not only successful in the theoretical implementation of the SDGs and green transition goals to VET learners and among the businesses, but that there are practical ways of implementing the advancements. However, even in Finland, obstacles remain. Labour shortage in particular has been identified as the main reason why there are not enough professionals entering emerging markets, such as wind power. Vocational education and training are in a key position in providing the necessary skills and attracting the learners that can swiftly move to specialize in these emerging and necessary industries.

Another important factor, besides jobs and workers meeting in equal terms, include the location of living and working. As discussed in the introduction, the Finnish population continues to move into cities, creating growth centres, although significant portion of the population continues to live near agricultural centres. In order for cities to attract more residents they need to prove their “green credentials” as opposed to the more environmentally friendly perceived countryside. The capital city Helsinki has started to publish a voluntary review of their own implementation of the UN’s Sustainable Development Goals. They were the second city world-wide to do so. They argue that a sustainable city strengthens equality, well-being and opportunities to participate in concrete “green actions”. In the review, Helsinki emphasizes its green area and promises to double its nature conservation areas.⁴⁵ These actions are aimed to attract more skilled workers to move and work in the capital region.

Finland has positioned itself as a leading expert in the adaption of sustainable development goals and green transition. It has done so by strengthening its VET sector and including the business sector to identify its future labour needs and strategize on how to become more environmentally sustainable in production. A key part of Finland’s strategy to be exemplary is to occupy a significant place in the education technology market. By exporting its VET programmes to other countries and continents, Finland is also creating an opening for Finnish businesses to export their professionals, know-how and products. This education diplomacy has long roots in Finland, as it emerged in the post-war years as a way to exert soft diplomatic skills abroad. Centering itself as an early adapter of the SDGs Finland continues to highlight its role as a forward-thinking, easily adaptable nation.

⁴⁴ Halonen, M. Laine, A. Simanainen, M. van der Laan, J. Holmes, N. (2022).

⁴⁵ From Agenda to Implementation: Implementation of the UN Sustainable Development Goals in Helsinki (2021).

Opportunities: training available and operational tools

Stadi Vocational School - Tihkuna

The Stadi Vocational School in Helsinki held a student entrepreneurship competition. One of the entrees was a student-created company called “Tihkuna”, which creates raincoats by using recycled umbrellas.

Climate responsibility has been taught in Finnish vocational education and training since the 1990s. Nowadays sustainable development is included in the basic structure of the Finnish vocational education both as a subject matter in theory and practice, as well as into other subject studies as part of environmental education and green transition. Finnish vocational education is based

on the needs of the working and business sector and emphasizes strong cooperation between the education and business sector. In Finland vocational schools may also apply for status as sustainable institutions. In addition, the Finnish education technology market spearheads its capability in teaching and learning about sustainable development and green transition.

This chapter lists a series of projects and strategies that deal with the SDGs, green transition and vocational learning.

MAKER OF SUSTAINABLE FUTURE -STRATEGY AND OKKA-CERTIFICATE

Savo Vocational School (Sakky) has developed a Maker of a Sustainable Future -strategy, which includes subject-specific strategies for sustainable development.⁴⁶ In addition, the OKKA-foundation, which is a non-profit foundation for teaching, education and personal development that supports the Finnish education sector, has a OKKA-certificate. The certificate is part of tools for vocational education and training for sustainable development, and it is divided into two parts: ecological and economic sustainability and social and cultural sustainability. The OKKA-foundation has an established status as a recognized expert in the education for sustainable development.⁴⁷

VASKI-PROJECT AND KEKEPEDAGOGIA

The VASKI-project (2021-2023) is about responsible and sustainable vocational education and it is funded by the Finnish Ministry of Education.⁴⁸ The project partners and stakeholders include 61 Finnish vocational schools, including Luovi Vocational Schools that has units all over Finland. The project aims to create a roadmap for sustainable vocational education and to teach both teachers and learners. Virve Rinnola, a specialist in responsible communication in the VASKI-project has created a learning model for sustainable development in Finnish vocational schools. The model is called KEKEpedagogia and it may be utilized for work

⁴⁶ <https://sakky.fi/fi/kuntayhtyma/strategia-2022> and <https://sakky.fi/fi/kuntayhtyma/kestava-kehitys>

⁴⁷ <https://okka-saatio.com/>

⁴⁸ <https://vaski.info/>



placements and applied in all of the sectors from private to public and the third sector.⁴⁹ The theories behind the model include:

PEDAGOGY	exploratory learning, humanist learning ideas
DEVELOPMENT WORK	constant development, strengthening cooperation with businesses
SUSTAINABLE DEVELOPMENT	work-life skills of the future, training transformation agents

DEVELOPING FINLAND’S SUSTAINABLE ECOSYSTEMS

Finland’s Ministry of Economic Affairs and Employment had a project in 2021 and 2022 called Developing Finland’s Sustainable Finance Ecosystems. This project has been briefly discussed in the previous chapter. The aim of this EU-funded project was to contribute to increasing financing for ecosystems that provide solutions for reaching the Sustainable Development Goals in Finland and globally, and in which Finland has strong expertise. The project subsequently supported national authorities, beneficiary institutions and stakeholders in expanding and adjusting sustainable financial practices and identifying solutions on how to improve information exchange, coordination and share lessons. As discussed previously, the project focused on four pilot ecosystems and identified bottlenecks and solutions for utilizing SDG-aligned investments.⁵⁰

VISIONS-EDUCATION AND SKILLS NEEDED OF GREEN TRANSITIONS

The aim of the VISIONS (Education and Skills Need of Green Transitions) project is to produce information that supports meeting the skills and education needs of the green transition under Finland’s sustainable growth programme.⁵¹ The main goal of this two year (2022-2023) research project is to study and describe the skills and education needs of Finnish society and working life created by the green transition. Moreover, the project will look at the effects of the green transition on Finnish occupational and economic structures, while making recommendations for changes in education and learning environments. Overall, the project will examine the different ways of promoting green competences outside of the formal education system and in the third sector, an area frequently left out of the green transition and sustainable development discussion.

The VISIONS-project is coordinated by Demos Helsinki (a global think tank) and the partners include ETLA (Economic Research, a private non-profit research institute), the University of Jyväskylä and Finnish Environment Institute.

⁴⁹ <https://www.amke.fi/ajankohtaista/blogi/kirjoitus/tarina-kekepedagogia-mallin-takana.html>

⁵⁰ <https://tem.fi/en/developing-finlands-sustainable-finance-ecosystems>

⁵¹ <https://www.etla.fi/en/research/green-transitions-education-and-skills-needs/>

PROFESSIONALS OF SUSTAINABLE FUTURE

Professionals of Sustainable Future is a two-year (2022-2023) project by the Tampere Vocational Institute. The Ministry of Education funds the project and its partners include Tampere Vocational College Tredu, Stadi Vocational School, Kainuu Vocational School and Vantaa Vocational School Varia. The purpose of the project is for these vocational schools to develop their leadership procedures and operational culture from the point of view of environmental responsibility and by participating in making a map to sustainability.

Needs

As stated in the previous chapters, Finland already has a strong knowledge and professional background in the adaptation of the sustainable development goals and green transition into its vocational training and education structures. Therefore the main challenge is to convince that Scouts4GreenApp-project will bring genuine added value to the existing programmes and strategies. And as shown in the Opportunities-chapter Finland has plenty of current projects that aim to include SDG-credentials into VET structures, from teaching to learning.

The gaps identified in this paper include the business sector adapting the SDGs, especially the ones dealing with social responsibility. As the Finnish VET ecosystem works closely with the business sector and develops its curriculums based on the needs of the business sector, this project cannot bring more added value to that cooperation.

The strength of the Scouts4GreenApp is the application, which will enhance the VET teaching and learning in regard to the SDGs and the green transition. It is here where the additional value to the current curriculum of the SDGs can be best integrated in the Finnish vocational education and learning.

It also bears considering whether there are opportunities for this project to assist the Finnish education technology sector, which is a growing industry in Finland. The micro credentials and the application could be of interest to the edutech-sector.

Challenges

The challenges in Finland in regard to the SDGs and green transition relate to combating climate change, the need to develop ways for more sustainable consumption and production patterns, as well as biodiversity loss. As discussed at the beginning of this paper, Finland includes sustainability assessment to its annual cycle of policy planning, budgeting and reporting. Moreover, the VET sector and the business sector cooperate closely to plan the need for future professionals and skills to reach the SDGs.

Finland's goal is ambitious, as the country plans to go further than the current European Union Green Deal; Finland is pursuing CO-neutrality in 2035 and after that CO-negativity. Finland is already a pioneer in the energy storage-sector and will need more vocationally educated experts in that area in the coming years towards the 2035 CO-neutrality goal. Despite Finland being close to achieving many of the SDGs dealing with social and economic sustainability, future challenges lie in the consumption and production patterns. Especially the issues relating to gender equality are taking steps backwards, and as discussed earlier in the paper, the business sector considers gender and social issues more insignificant as opposed to the SDGs relating to production.

About half of Finnish youth attend vocational schools, with the other half going to high school. It is also possible to do a joint vocational and high school degree. As stated previously, the creation of vocational education-based jobs will depend largely on whether Finland is able to generate the needed high-level expertise to create new technologies associated with climate change negation.

The Scouts4GreenApp-project can assist vocational learners in becoming more attuned to the significance of the sustainable development goals to their future professions. The project can also be seen as part of the long-term learning that Finnish education system emphasizes; offering basic education content as well as further-education content, while assisting teachers and trainers in realizing the significance of the SDGs and green transition for their learners.

Bibliography

Websites:

Greiner, C. (2022, February). Finland as a Pioneer in Implementing the EU Green Deal: Opportunities for International Companies. Retrieved from https://www.bergmann.fi/e/article/finland_green_deal

Liimatainen, A. (accessed on February 6, 2023). Kestävä kehitys ammatillisen koulutuksen tutkinnon perusteissa. Retrieved from <https://www.oph.fi/fi/opettajat-ja-kasvattajat/kestava-kehitys-ammattillisen-koulutuksen-tutkinnon-perusteissa>

Lyytimäki, J. (2007, July. Updated 2014, July), Environmental Protection in Finland: what is Finland doing to preserve its wilderness? Retrieved from <https://finland.fi/life-society/environmental-protection-in-finland/>

Pajunen, N. (accessed on February 6, 2023). Sustainable Development as Vocational Competence. Retrieved from <https://www.oph.fi/en/sustainable-development-vocational-competence>

Pihljerta, R. (2023, February 17). Ammatillinen koulutus tukee vihreää siirtymää. Retrieved from <https://www.metsateollisuus.fi/uutishuone/ammattillinen-koulutus-tukee-vihreaa-siirtymaa>

Rinnola, V. (2022, March 24). Tarina KEKEpedagogia-mallin takana. Retrieved from <https://www.amke.fi/ajankohtaista/blogi/kirjoitus/tarina-kekepedagogia-mallin-takana.html>

Teinilä, T. (2022). Integrating sustainable development into vocational education. Retrieved from <https://www.raseko.fi/en/integrating-sustainable-development-into-vocational-education/>

Finland Publishes New Sustainable Development Strategy. (2022, April 26). Retrieved from <https://valtioneuvosto.fi/en/-/10616/finland-publishes-new-sustainable-development-strategy>

Finland Ranks First in International Sustainable Development Comparison. (2021, June 14). Retrieved from <https://valtioneuvosto.fi/en/-/10616/finland-ranks-first-in-international-sustainable-development-comparison>

Finnish National Agency for Education/ Opetushallitus. (Accessed on February 6, 2023). Retrieved from www.oph.fi

Ministry of the Environment: Finland's National Climate Change Policy (accessed on February 5, 2023), retrieved from <https://ym.fi/en/finland-s-national-climate-change-policy>

United Nations, Sustainable Development. Finland, Voluntary National Review 2020. Retrieved from <https://sustainabledevelopment.un.org/memberstates/finland>

Sustainable Development Report: Finland (2022). Retrieved from <https://dashboards.sdgindex.org/profiles/finland>

VASKI-vastuullinen ja kestävä ammatillinen koulutus. (2021). Retrieved from

<https://luovi.fi/hankkeet/vaski/>

POKE Pohjoisen Keski-Suomen ammattiopisto. (Accessed on February 6, 2023). Retrieved from

https://peda.net/poke/projektit/luva_hankkeet/Up-hanke/Ymp%C3%A4rist%C3%B6-1val3/aihe1/mokk/mokkak

Interdisciplinary network of environmental and sustainability education research. (2022, March 22). Retrieved from

<https://www.sirene.fi/blog/kestava-kehitys-ammattillisessa-koulutuksessa-vastuullisuutta-laatua-ja-ammattiympeytta/>

Sustainable Development Goals – Indicators for Finland. Statistical Annex of the Finnish Voluntary National Report 2020 on the Implementation of the Agenda 2030. (2020). Retrieved from

<https://www.doria.fi/handle/10024/184505>

How do companies report on the SDGs?. (2022, November 8). Retrieved from

<https://kpmg.com/fi/fi/blogs/home/posts/2022/11/kpmg-global-survey-results-on-sdg-reporting.html>

A Dramatic Change in the Sustainability work of Finnish Companies. (2021, December 2). Retrieved from

<https://www.fibsry.fi/ajankohtaista/a-dramatic-change-in-the-sustainability-work-of-finnish-companies/>

Sustainable Growth Programme for Finland – Boosting reforms and investments (accessed February 9, 2023). Retrieved from

<https://vm.fi/en/sustainable-growth-programme-for-finland>

Ministry of the Environment (accessed on February 14, 2023). Green deal -sopimukset. Retrieved from

<https://ym.fi/green-deal-sopimukset>

Tampere Vocational College Tredu. (2022). Kestävän tulevaisuuden ammattilaiset (ammattillisen koulutuksen kestävä kehitys ja vihreä siirtymä, KESTU, 2022-2023. Retrieved from

<https://www.tredu.fi/project/kestavan-tulevaisuuden-ammattilaiset-ammattillisen-koulutuksen-kestava-kehitys-ja-vihrea-siirtyma/>

Ammattillisen koulutuksen kestävä kehityksen ja vihreän siirtymän kehittämisohjelma käynnistyy. (2021). Retrieved from

<https://www.oph.fi/fi/funding-release/ammattillisen-koulutuksen-kestavan-kehityksen-ja-vihrean-siirtymän-kehittämisohjelma>

Ministry of Finance. (accessed on February 14, 2023). Green Transition – Recovery and Resilience Plan. Retrieved from

<https://vm.fi/en/green-transition>

ETLA Economic Research. (2022). Education and Skills Need of Green Transitions (VISIONS), research project, 2022-2023. Retrieved from

<https://www.etla.fi/en/research/green-transitions-education-and-skills-needs/>

Ministry of Economic Affairs and Employment of Finland. (accessed on February 14, 2023). Developing Finland's Sustainable Finance Ecosystems. Retrieved from

<https://tem.fi/en/developing-finlands-sustainable-finance-ecosystems>



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the European Union



Policy Papers:

Halonen, M. Laine, A. Simanainen, M. van der Laan, J. Holmes, N. (2022). Recommendations for how Finland can develop sustainable finance at the national level. Retrieved from [https://tem.fi/documents/1410877/92029151/Recommendations+for+how+Finland+can+develop+sustainable+finance+at+the+national+level+\(ID+63426\).pdf/253dec71-64d5-9fb6-4545-f4d2b82dcdbc/Recommendations+for+how+Finland+can+develop+sustainable+finance+at+the+national+level+\(ID+63426\).pdf?t=1655713057769](https://tem.fi/documents/1410877/92029151/Recommendations+for+how+Finland+can+develop+sustainable+finance+at+the+national+level+(ID+63426).pdf/253dec71-64d5-9fb6-4545-f4d2b82dcdbc/Recommendations+for+how+Finland+can+develop+sustainable+finance+at+the+national+level+(ID+63426).pdf?t=1655713057769)

Lehtonen, A., Cantell, H. (2015). Ilmastopaneeli: Ilmastokasvatus osaamisen ja vastuullisen kansalaisuuden perustana. Retrieved from <https://www.ilmastopaneeli.fi/wp-content/uploads/2018/10/Ilmastokasvatuksen-raportti-9.6.2015.pdf>

Wikman, M. Nyrhilä, L. Roschier, S. (2022). The Effects of the Green Transition to the Employment and Educational Requirements of Engineers in Finland. Retrieved from https://www.tek.fi/sites/default/files/attachments/The%20Effects%20of%20the%20Green%20Transition%20to%20the%20Employment%20and%20Educational%20Requirements%20of%20Engineers%20Finland_0.pdf

Reports of the Ministry of Environment 21en/ 2017. Government Report on Medium-term Climate Change Policy Plan for 2030: Towards Climate-Smart Day-to-Day Living. Ministry of Environment. Retrieved from https://julkaisut.valtioneuvosto.fi/bitstream/handle/10024/80769/YMre_21en_2017.pdf?sequence=1&isAllowed=y

Prime Minister's Office. (2020). Progress on SDG's in Finland: Assessments by the Government and Civil Society Organisations. Retrieved from https://plan.fi/wp-content/uploads/2021/05/progress_on_sdgs_in_finland.pdf

Ministry of Education. (2023). Yhteisten tutkinnon osien valinnaiset osaamistavoitteet: talous- ja kestävän kehityksen osaaminen. Retrieved from <https://eperusteet.opintopolku.fi/eperusteet-service/api/dokumentit/7646232>

3bility Consulting and FIANT Consulting. (2020). Time to Act: Assessing Finnish Companies' Alignment with SDGs. Retrieved from https://fiantconsulting.com/wp-content/uploads/2020/02/Time_to_act_Feb2020.pdf

Business and Sustainable Development Commission. (2017). Better Business Better World: The Report of the Business and Sustainable Development Commission. Retrieved from <https://sustainabledevelopment.un.org/index.php?page=view&type=400&nr=2399&menu=1515>

Gaia Consulting. Trinomics B. V.. AARC LTD. (2021). Sustainable Development Goals Finance Roadmap: Finnish Roadmap for Financing a Decade of SDG Action. Retrieved from https://tem.fi/documents/1410877/92029151/SDG+Finance+Roadmap_2021+Finnish+Roadmap+for+financing+a+Decade+of+Action_final.pdf/3c273980-f1f6-da98-accad767d13ca52d/SDG+Finance+Roadmap_2021+Finnish+Roadmap+for+financing+a+Decade+of+Action_final.pdf?t=1632389757818

City of Helsinki. (2021). From Agenda to Action: Implementation of the UN Sustainable Development Goals in Helsinki. Retrieved from

https://sdgs.un.org/sites/default/files/2021-07/Helsinki_VLR_From%20Agenda%20to%20Action%202021%20%281%29_0.pdf

Publications of the Finnish Government. (2021). Sustainable Growth Programme for Finland: Recovery and Resilience Plan. Retrieved from

https://julkaisut.valtioneuvosto.fi/bitstream/handle/10024/163363/VN_2021_69.pdf?sequence=1&isAllowed=y

Theses and Dissertations:

Kouri, A. (2022). Small and medium-sized enterprises achieving the sustainable development goals: The Finnish Perspective. Haaga-Helia University of Applied Sciences. <https://urn.fi/URN:NBN:fi:amk-2022082419625>

Mustaniemi, E. (2020). Ympäristökasvatus ammatillisen koulutuksen teknisillä aloilla opettajien näkemysten ja valmiuksien näkökulmasta, Kasvatustieteiden ja kulttuurin tiedekunta. University of Tampere.

<https://urn.fi/URN:NBN:fi:tuni-202010137327>

(Nygård, S. (2021). Kestävä kehitys ammatillisissa perustutkinnoissa: Kestävän kehityksen osaaminen ammattitaitovaatimuksissa. University of Tampere.

<https://trepo.tuni.fi/bitstream/handle/10024/137116/Nyg%C3%A5rdSatu.pdf?sequence=2>

Other

Halonen, M. Laine A. Simanainen, M. Lummaa, M. Jonsson, H. (2022). A Toolkit for Mobilizing SDG-aligned Investments: Experiences from Four Sustainable Finance Pilot Ecosystems. Retrieved from

https://tem.fi/documents/1410877/92029151/Financing+SDG+Transformations_experiences+from+four+Finnish+pilots_January+2022_FINAL.pdf/4a061cd1-ba21-7a02-8694-5cb54ffcfab0/Financing+SDG+Transformations_experiences+from+four+Finnish+pilots_January+2022_FINAL.pdf?t=1646736151532

Business Finland. (2020). Experience Commerce Finland, Sustainability Playbook for Digital Commerce SMEs. Retrieved from <https://mediabank.businessfinland.fi/l/RzqMVzGVbGs/f/mdSH>

Arcada University of Applied Sciences. (2023). Resilience, Green Transition and Digitalization of SMEs.

Retrieved from <https://www.arcada.fi/en/research/projects/resilience-green-transition-and-digitalization-smes>

Räkköläinen, M. (2017), Kestävän kehityksen osaaminen, opetus ja koulutuksen järjestäjän toiminta ammatillisissa perustutkinnoissa. Kansallisen koulutuksen arviointikeskus.

