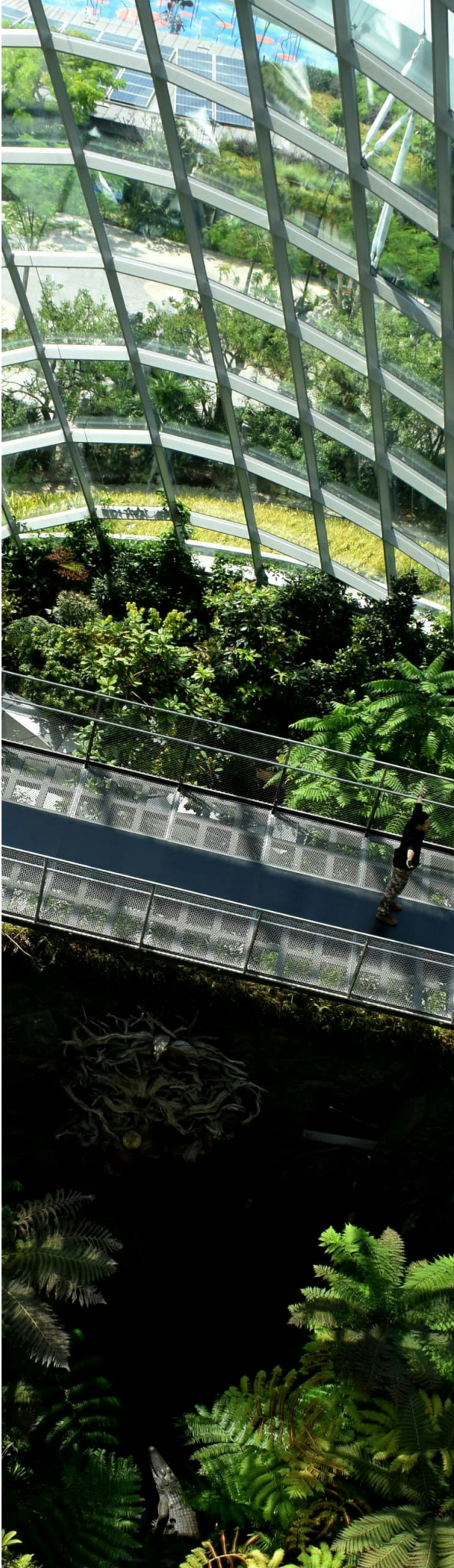




Sustainable Performance Organisations

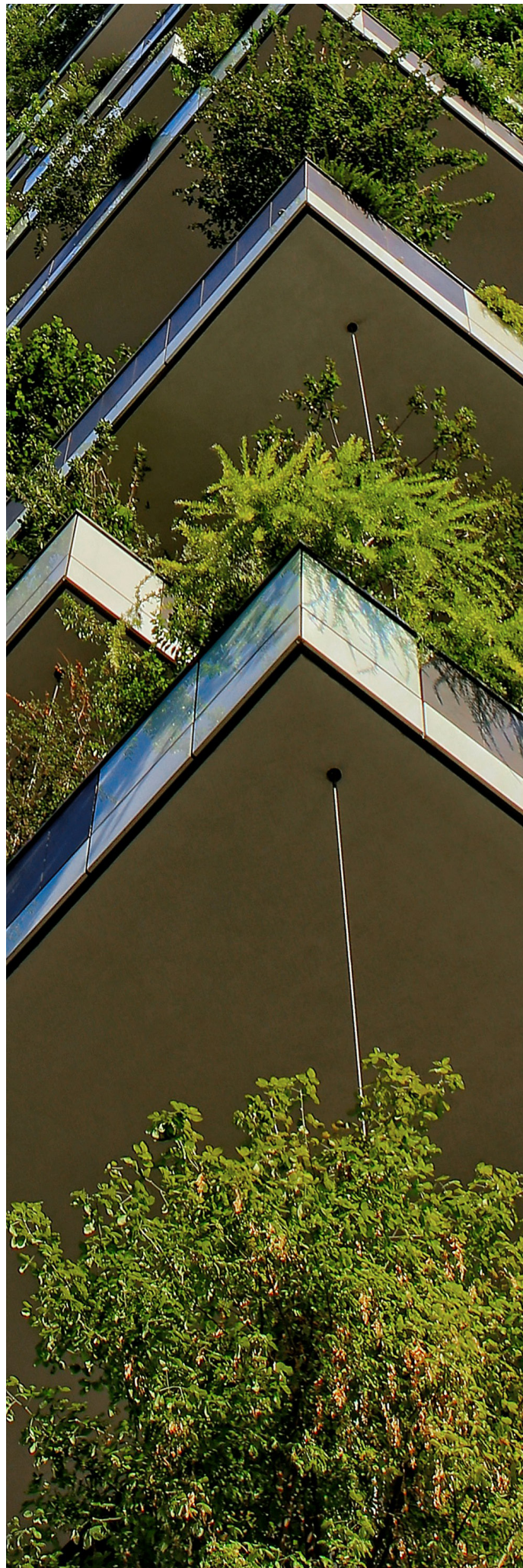
EXCELLING IN THE DIGITAL WORLD

EMBEDDING ENVIRONMENTAL SUSTAINABILITY IN ORGANISATIONS

*A research study to discover how
information technology enables sustainability
and strengthen organisations*

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PREFACE

If thirty years ago someone had told me that the usage of natural resources and energy for all IT-related activities, including infrastructure, hardware, and software solutions, would account for a significant portion of all resources available to us, I would have been hesitant to believe it.

Yet, this is where we are. IT represents well over ten percent of global energy consumption and accounts for approximately two percent of global CO2 emissions – approximately the same level as aviation. Cooling for datacenters, especially hyper scalers, uses massive amounts of – often potable – water.

The IT industry is making efforts to limit its use of resources, but we will inevitably continue to see increased consumption of energy, water, and other natural resources in the future. This is particularly true for AI and quantum computing, which require significant amounts of resources to operate effectively. As our standard of living continues to improve, we will see more online services, growing internet access, more devices, more consumption, and ultimately more waste.

In this report, you will find information about the importance of greening IT. While the big players in the industry have already started implementing eco-friendly practices, many of their business customers still lag. To bring about any meaningful change, businesses need access to accurate data. This data not only helps them meet their reporting obligations but also raises awareness among management and drives long-term sustainability efforts.

I anticipate releasing a report that demonstrates significant advancement in the near future.



Rob Beijleveld

Publisher & CEO - ICT Media

EXECUTIVE SUMMARY

The recognition that sustainability is important is rapidly increasing. Regulatory obligations are growing. Organisations are focusing on how to improve and how to keep up the pace. Technology innovations contribute to increased sustainability as well as energy consumption. In this market report the focus is on environmental sustainability – reducing the impact on climate change as well as value creation. Therefore, the first question organisations need to ask themselves is if their sustainability goals are challenging enough. Most participating organisations are at par with their peers with regards to their degree of challenge (42%) and 30% of the participating organisations are ahead of their peers with regards to their sustainability goals. There are eight of the 58 organisations that are far ahead of their peers (7%).

Influx

This market research confirmed the need for accelerating technology sustainability initiatives, but also revealed that many organisations are still struggling in implementing and leveraging these concepts. Many organisations still lack sufficient focus on setting and measuring their environmental sustainability goals. This is related to insufficient management commitment to sustainability as well as data challenges. The data challenges are in the ambiguity of data definitions, the ability to consolidate data in the organisation and to share data outside. Obviously these data challenges are also impacting CSRD implementations. In this study +30% of the organisations reported their implementation is behind schedule. Furthermore, cyber security of sustainability data requires attention. Also reporting lines for the Chief Sustainability Officer are essential. There are still a large number of Chief Sustainability Officers without an adequate reporting line (just under 50% of the surveyed organisations). Furthermore, the alignment between the Chief Sustainability Officer and the Risk Officer is limited – in this market study +50% are insufficiently aligned. All of this is hindering organisations from leveraging technology innovation in achieving sustainability goals.

Furthermore, information technology (IT) is not managed properly. Many IT organisations are not capable of meeting the sustainability business needs and legislation requirements. The technology stack is not robust enough and the IT architecture is not ready to incorporate future sustainability requirements.

Call for action

Specific actions are defined in this report to facilitate sustainability and strengthen organisations. This market research identified two categories 1. Structuring an organizing for success, and 2. Leveraging information technology. The first category includes checking if your sustainability goals are challenging enough in combination with sufficient management commitment and ensuring proper reporting lines for the Chief Sustainability Officer. Also aligning accountability and responsibility for sustainability with the sustainability team operating model. Organisations need to decide on the level of decentralization of sustainability, to balance economies of scale and local business ownership. The second category is less diverse and focuses on the availability of a robust IT landscape that is able to cater for the sustainability requirements as well as address the data challenges. Furthermore, organisations need to incorporate sustainability in their sourcing strategy. This requires additional and different selection criteria.

Sustainability DNA

Organisations need to adjust to be on the one hand expanded to ensure the organisation can keep up with the growing regulatory requirements and on the other hand involving the business and information stakeholders is crucial. There is a growing understanding that organisations need to do better with regards to sustainability. In this market research two thirds of the participating organisations are expecting a significant increase in the focus on sustainability in the next 24 months. Cooperation is key in driving sustainability. However, this requires that sustainability is an integral part of the DNA of your organisation. The low level of employee sustainability awareness indicated in this study suggests that many organisations still have a long way to go. Fortunately, about 70% of the organisations participating in this survey expect their CSRD reporting will help them to identify climate-related opportunities. Ensure your organisation is ready to embrace sustainability and to start benefiting from technology initiatives in improving environmental sustainability!

INTRODUCTION

This report explores how technology innovations contribute to environmental sustainability. The focus in this report is on environmental sustainability. The energy consumption and the CO2 emissions related to information technology are significant and rapidly growing. The continuously increasing usage of information technology in combination with high sustainability impact innovation such as artificial intelligence and in future quantum computing. Obviously, these innovations can also be used for good, but organisations need to be mindful of the sustainable impact of each innovation in information technology. In this report we focus on green IT and greening by IT.

Green IT

Green IT can be described as sustainable IT. This is related to the energy consumption of devices but also the energy efficiency of software. For example, there are distinct differences in energy between Operating Systems. Also software support policies have to be taken into account, as this supports the lifetime of devices. Furthermore the manufacturing of re-used minerals and raw materials, as well as disposal, is relevant. Organisations must implement Key Performance Indicators (KPIs) to track sustainability. Starting with hardware lifetime management which includes for example cloud computing, virtualisation, IT architecture (fit for purpose & depreciation policy), circular hardware and recycled packaging materials, logistics, and low-temperature soldering process. Also KPIs must be set for software lifetime management, think degree green coding and level of application rationalisation. Furthermore, sourcing weighting factors for green Information Technology have to be set, including for example ISO14001 certification for renewable energy and carbon free. Finally, also implementing (End) user policies supports green IT, including for example device settings, printing policies, back-up and data retention policies.

Greening by IT

Greening by IT can be described as leveraging IT to make business operations more sustainable. The easiest example is using online meeting software to substitute for in-person travel/community. Different than green IT, the KPIs are not as specific. Good practices for greening by IT include for example embracing digital workplaces (e.g. online meetings & metaverse) and responsible (commute & travel) policies. Furthermore, the implementation of ESG dashboarding is important. ESG dashboards go beyond compliance, including ESG impact on 1. strategy setting & decision making, 2. partnering in eco-systems and 3. performance objectives of both executives and employees. Finally, certification is also an important good practice for greening by IT, including for example ISO14001, and participating in 1% for the Planet and B Corp.

Requirements management

Key in successful sustainability adoption is organisational awareness and acceptance that sustainability requirements are an integral part of the functional, nonfunctional and financial requirements. Typically, organisations classify sustainable requirements as nonfunctional requirements. In most organisations the financial requirements outweigh the sustainability requirements. Organisations need to consider not only the short-term financial requirements, organisations also need to take the mid- to long term perspective as well as the legislation perspective. This will make sustainability requirements more of a priority.

Nevertheless, it is essential that organisations have in place sustainability objectives. These sustainability objectives are the starting point for setting the sustainability criteria. Many organisations struggle to define sustainability objectives. A thorough analysis including competitors, stakeholders, technology innovations and current and upcoming legislation will be the starting point for defining SMART sustainability objectives. As with any strategy, an annual update of the strategy is key. Designing and maintaining the sustainability objectives, as well as internal evangelisation of the sustainability objectives is an important responsibility of the Chief Sustainability Officer.

Management sustainability commitment

As with any priority, sustainability also starts with management commitment. The increasing legislative requirements are making sustainability more of a priority, as is the increased attention in the public domain and growing sustainability activism. Nevertheless, intrinsic management motivation is most sticky. The surveyed organisations had a mix of management sustainability commitments, 21% had insufficient and largely insufficient management commitment. These organisations were largely Dutch organisations. In this segment there are three of the five participating organisations from the information technology sector. Where the remaining 80% was equally split over adequate management commitment (40%), and high (32%) and dedicated (7%) management commitment. What is interesting is that the largest organisations with a revenue/budget over 1b Euro have more management sustainability commitment than the smaller organisations. The sector with the highest management sustainability commitments is the Travel, Transportation, and Hospitality sector.

Reading guide

This report explores how organisations embed environmental sustainability by leveraging technology innovation. In this exploration the sustainability goals need to be better understood. Also organisations must take a close look at commitment and the envisioned future importance of sustainability in the context

of the anticipated impact of sustainability on the valuation of organisations. In this report the focus is also on the operating model for sustainability. Furthermore, data challenges hindering the improvement of sustainability maturity are detailed. The report also focuses on the contribution of the information technology capabilities required to meet the environmental sustainability objectives. in the context of the anticipated impact of sustainability on the valuation of organisations. In this report the focus is also on the operating model for sustainability. Furthermore, data challenges hindering the improvement of sustainability maturity are detailed. The report also focuses on the contribution of the information technology capabilities required to meet the environmental sustainability objectives.

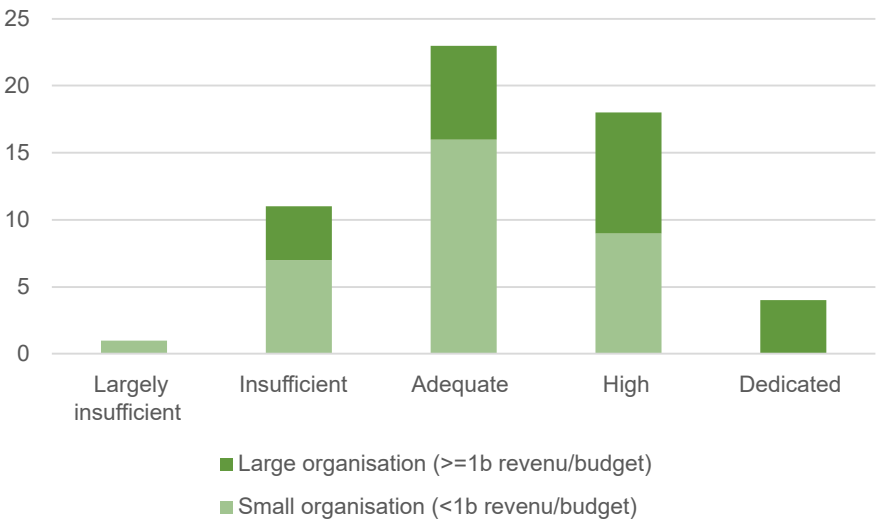
RESEARCH APPROACH

The high-performance research program was initiated in 2017 and is facilitated by ICT Media. This market research project is the first environmental research study in this program. This market research has been conducted by prof. Erik Beulen and is powered by Acer, Google Chrome OS, Google Cloud and Xebia.

The focus of this research is on identifying how organisations embed environmental sustainability by leveraging technology innovation. The research investigates meeting sustainability goals, sustainability operating model, data challenges, managing Information Technology, and also the implications of legislation.

In total 58 organisations participated in a global survey. The respondents were business (22%), sustainability (19%) and technology (59%) representatives. This study included 45% international organisations. The participating organisations are spread across any sector, where Government and Public Services (26%), manufacturing (16%) and Travel, Transportation, and Hospitality (14%) were the dominant sectors. Survey details can be found in the appendix of this report. The survey results have been discussed in interactive webinars and workshops with global technology leaders and independent experts. Furthermore, interviews were conducted with global C-level technology leaders to colour the survey insights.

Figure 1 : Management’s sustainability commitment by size of the organisation (N=57)



MEETING SUSTAINABILITY GOALS

As this market research concludes that there is room for improvement in the management commitment for sustainability, it is needed to do a deep dive into how challenging are the sustainability goals of organisations. The bar is elevating to higher standards, due to increasing legal sustainability requirements, a growing intrinsic sustainability motivation and preference and influence from the general public and (potential) employees, as well as activism.

Peer pressure

When defining sustainability goals, organisations are also taking into account the standards that their competitors and partners are adopting. This peer pressure is important to consider but can have positive or negative effects on sustainability. Organisations might decide to limit their sustainability goals to the compliance level and avoid investment to gain a short-term financial benefit. On the other hand, peer pressure can also make organisations collaboratively decide to continuously raise the sustainability bar. This ecosystem sustainability partnering is typically based in intrinsic organisational motivations combined with mid- to long-term financial benefit.

It is interesting that four organisations are limiting their sustainability goals to compliance, this includes a Life Sciences and Healthcare and a Government and Public Services sector organisation. Typically highly regulated organisations, such as Life Sciences and Healthcare sector organisations, have more ambition. Also Government and Public Services sector organisations typically set a higher bar, however in this market research the degree of challenge of Government and Public Services sector organisations is identical to the average of all participating organisations.

Most participating organisations are at par with their peers with regards to their degree of challenge (42%) and 30% of the participating organisations are ahead of their peers with regards to their sustainability goals. There are eight organisations that are far ahead of their peers (7%).

For any organisation it is helpful to understand how their sustainability goals relate to what their peers are doing. This will drive informed decision making to either accelerate, have an equal focus or slow down. Setting sustainability goals must be an integral part of the overall goals of any organisation.

Midterm sustainability ambitions

Mapping the degree of challenge of sustainability goals and the expected focus in the next 24 months provides relevant insights. The majority of the responding organisations are expecting to increase (53%) or significantly increase (14%) their focus on sustainability, this includes five organisations which the degree of challenge of their sustainability goals are behind the sustainability goals of their peers. The remaining organisations are already front runners and continue to accelerate in sustainability. The profile of these front runners is large organisations with revenues/budgets of >1b Euro.

There are four organisations which sustainability goals are limited to ensuring compliance, these are all organisations with a revenue/ budget under 250m Euro including one organisation with a revenue/ budget of <10m Euro.

The organisations are neither expecting to accelerate nor to increase their focus on sustainability. These are in the Energy Resources and Utilities, Life Sciences and Healthcare, Information Technology and

Government and Public Services sector. Furthermore, there are three organisations that are behind with their sustainability goals and are either expecting an equal to or even reduced focus on sustainability. This will not help these organisations to catch up.

Long term sustainability valuation impact

Valuation is important for any organisation. For commercial organisations this is straightforward and typically related to shareholder value, where for public organisations this is linked to public value, for example serving the citizens better, more transparent, and/or more purposeful engagements. Understanding the impact of sustainability on the valuation of any organisation is important. The surveyed organisations had an average score of 5 on a 1-7 Likert scale where 1 = low impact and 7 = high impact. This is definitively a convincing insight for investing in sustainability.

The sector analysis of the value impact was not providing insights, where size of the organisation did provide insights. The large organisations, revenue/budget +10b Euro, reported a 6 on the anticipated sustainability impact on the valuation of the organisation. Furthermore, the international organisations reported a slightly higher sustainability valuation impact than the Dutch organisations.

Furthermore, not surprisingly, only the organisations that reported an increased (5.5 score on a 1-7 Likert scale) or significantly increased (6 score on a 1-7 Likert score) focus on sustainability, report a higher long term sustainability valuation impact.

INTERVIEW - MEDIA.MONKS



Regina Romeijn
Global head of ESG at Media.Monks

Media.Monks creates marketing content and experiences. Regina Romeijn: “With an increased focus on scope three emissions we are engaging with clients on the energy consumptions of the selected platforms. We are comparing media impact, costs and energy consumption.”

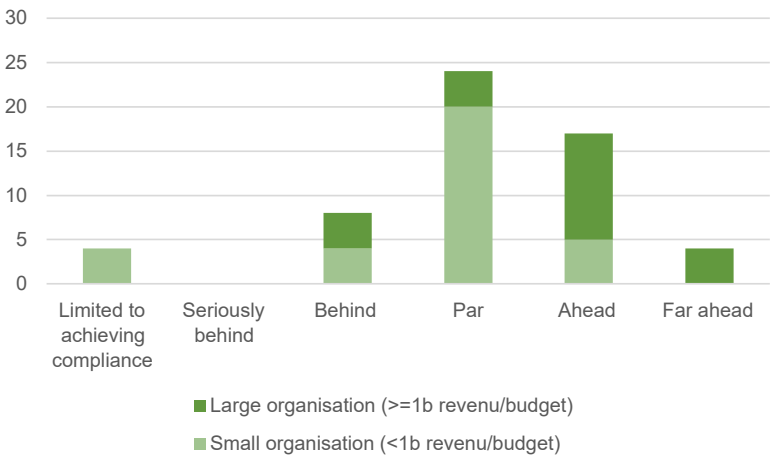


Figure 2: Degree of challenge of the sustainability goals compared to their peers by size of the organisation (N=57)

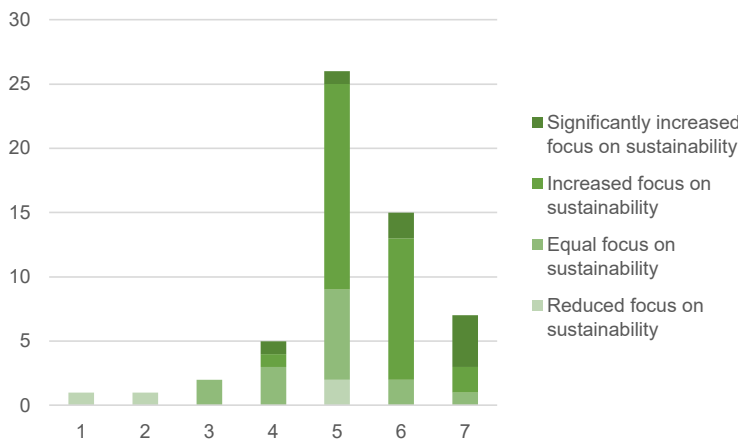


Figure 3: Anticipated long term sustainability valuation impact (in five years) by midterm sustainability ambitions (next 24 months), 1-7 Likert scale, 1=low and 7-high (N=57)

SUSTAINABILITY OPERATING MODEL

Following the setting of sustainability goals, it is important to ensure an organisation has a fit for purpose sustainability operating model. This includes reporting lines of the Chief Sustainability Officer or equivalent, including the alignment with risk management. Furthermore, decisions need to be made on how to structure sustainability resources – central sustainability model versus a decentral operating model. Obviously, the ultimate test for the sustainability operating model is the employee level of sustainability awareness. Organisations can only collectively progress on the sustainability agenda.

Reporting lines

First of all, there are many organisations which have no Chief Sustainability Officer, meaning have C-level role responsible for sustainability. Not having anchored sustainability in the board of management is not problematic as such. Many organisations have a sustainability director or a head of sustainability. It is important that organisations have a focus, typically the size of an organisation drives the focus if sustainability is with a Chief Sustainability Officer or a leader at a lower level in the organisation. In 35% of the survey respondents reported that there was no sustainability person appointed, which is a bit of concern in this day and age. These organisations were a mixed bag of smaller and larger organisations, including four organisations of +1b Euro revenue/ budget and one organisation of +10b Euro revenue/budget. These larger organisations must have the size to embed the sustainability function properly in their organisation.

For the remaining 65% of the responding organisations which reported a Chief Sustainability Officer, or equivalent role in their organisation, it is important that the reporting line of the Chief Sustainability Officer is enabling meeting the sustainability objectives of the organisation. This market research indicates that in 72% of these organisations, the reporting lines are adequate or even excellent. The two organisations that shared excellent reporting lines

enabling meeting the sustainability objectives are in the government and public services and the travel and transportation sector. Only two organisations with a Chief Sustainability Officer reporting to C-level stated that the reporting line of the Chief Sustainability Officer was insufficient or even largely insufficient. Their reporting was to the Chief Financial Officer and the Chief Operating Officer.

In terms of different reporting lines for the Chief Sustainability Officer two alternative C-level reporting lines were stated: Chief Commercial Officer and Chief ESG & Legal officer. The latter is obviously a combined role, which will work perfectly. Both respondents reported an adequate reporting line. In terms of non-C-level reporting lines, two of the sustainability officers report into a group director and three into HR. Reporting into HR might not give the right sustainability focus in an organisation. Furthermore in 45% of the respondents with a sustainability office not reporting on C-level stated insufficient reporting lines, which is a strong indication that organisations need a strong anchoring of the sustainability officer on board level.

Alignment with risk management

In addition to the reporting line of the Chief Sustainability Officer, or equivalent, also alignment with risk management is important. This alignment is important due to the increasing levels of sustainability legislation, as well as to the increased attention for sustainability in general leading to opportunities, but also to sustainability requirements set by ecosystem partners as well as competing on sustainability. Alignment with risk management can strengthen the ability of Chief Sustainability Officers to drive their sustainability agenda and achieve sustainability goals.

Just over 50% of the surveyed organisations state that alignment with risk management was adequate. One large organisation, with a Chief Sustainability Officer reporting into the Chief Executive Officer, stated even an excellent alignment. This indicates that there is a lot of room for improvement. This survey also indicates that reporting lines of the Chief Sustainability Officer, or equivalent, impact the ability to align with risk management. Over 50% of the

respondents stating that the alignment of the sustainability officer with risk management is insufficient or largely insufficient had non-C-level reporting lines. This stresses the importance of having C-level reporting lines for the Chief Sustainability Officer.

Sustainability function

Organisations need to have sufficient capabilities and capacity to address and progress on the sustainability topic. Assessing the capabilities and available capacity requires a deep dive. Typically, organisations engage with external consulting companies to assess their sustainability function.

Obviously, the size and structure of an organisation have an impact on how the sustainability function needs to be structured. Most organisations will opt for a central sustainability team to set and maintain the strategy and policies, to support the organisation and ensure sustainability awareness. Organisations need to decide, if any, how decentral sustainability teams and/or officers fit within their organisation. More decentralised organisations will task the decentral sustainability team in addition to the support and awareness with policy making.

Any organisation needs to decide on how they are filling roles in both the central sustainability and the decentral sustainability teams. Most organisations have full time roles in their central team and a mix of full time and combined roles in their decentralised team. The combined roles include a variety of combined roles, including business, support and technology or innovation roles. This market research only addresses the number of FTE in

sustainability, differentiating in the central sustainability team and the decentralised sustainability teams. Not surprisingly the size of the organisations matter. Low numbers of FTE in the central sustainability team indicates a low sustainability priority. The results, as detailed in Figure 5, present a very scattered overview. Organisations are currently shaping their sustainability function. 61% of the surveyed organisations report less than five FTE in both the central and the decentral sustainability teams. The two survey respondents with more than 100 FTE in both the central and decentral sustainability teams are large and the Chief Sustainability Officer is reporting into the Chief Executive Officer.

INTERVIEW - NUTRECO



Coen Smits
Global Sustainability Director at
Trouw Nutrition, Nutreco

Nutreco’s slogan is “Feeding the future”. Coen Smits, global sustainability director and Trouw Nutrition/Nutreco: “We are taken responsibility for the sustainability of our ecosystems. We not only focus on our organisation, we also support our clients in achieving their sustainability goals.”.

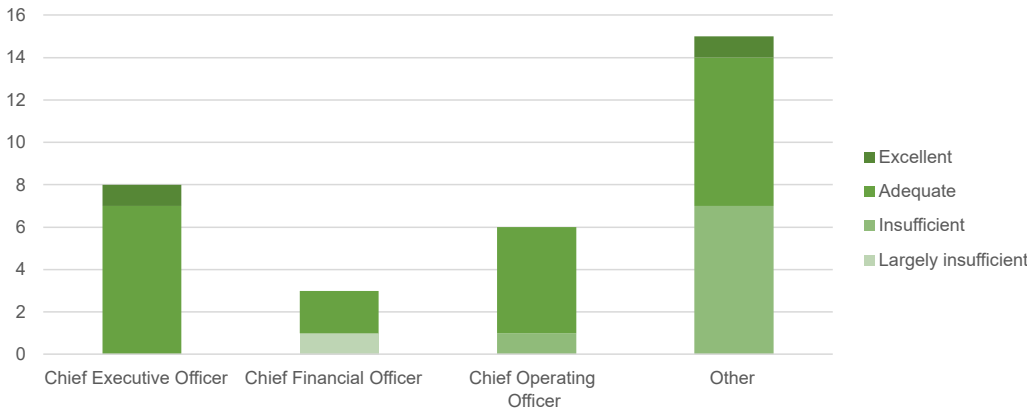


Figure 4: Reporting lines of the Chief Sustainability Officer by contribution to meeting the sustainability goals (N=32 - remaining responses reported “No Chief Sustainability Officer, or equivalent”)

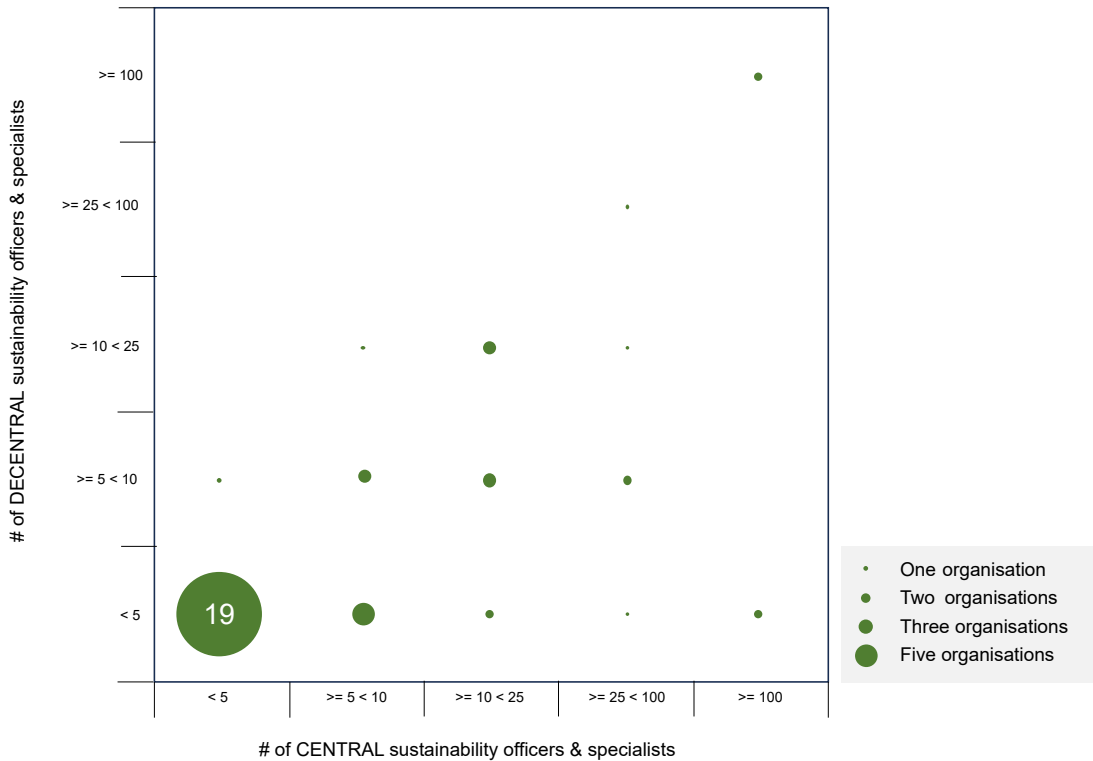


Figure 5: Sustainability operating model – # of central and decentral sustainability officers & specialist (N=46)

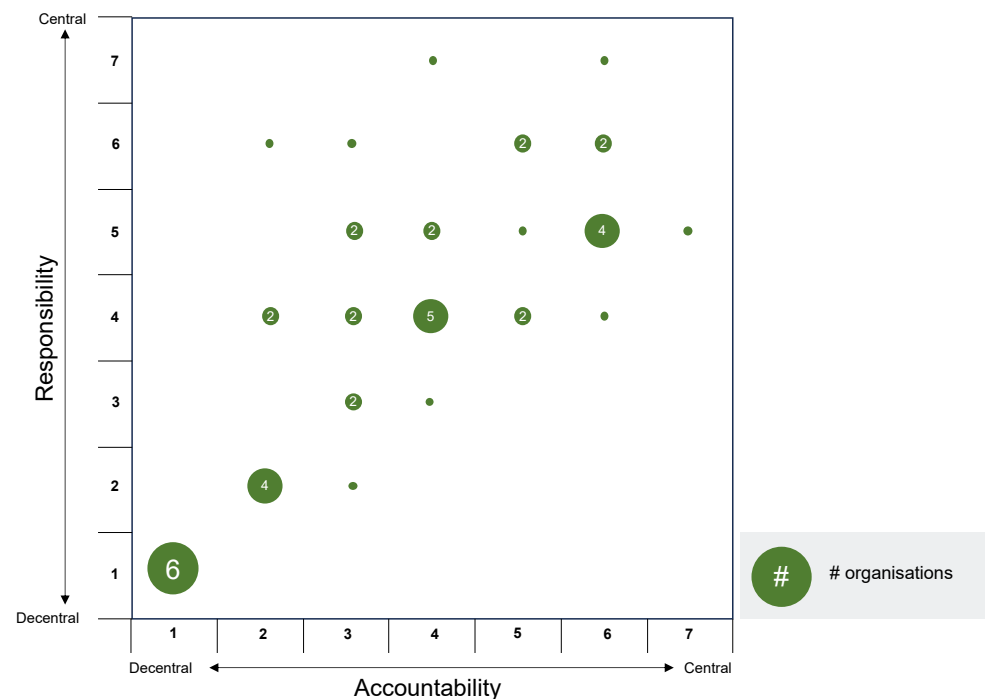


Figure 6: Accountability and responsibility, 1-7 Likert scale, 1=decentral and 7=central (N=46)

Sustainability accountability & responsibility

Similar to structuring the sustainability function is also embedding the accountability and responsibility in an organisation in most organisations still under construction. In general, the accountability is more with the central team, however organisational units specific to sustainability matters might also be allocated to decentral teams. Due to the emerging maturity of sustainability many organisations still have both central accountability as well as central responsibility. In total over 50% of the responding organisations reported on a 1-7 Likert scale, where 1=decentral and 7= central, a four or higher score on both accountability and responsibility, where over 25% of the responding organisations reported a three or less score on both accountability and responsibility. Different for the sustainability function was size not impacting the split over decentral and central for both accountability and responsibility. This is detailed in Figure 6.

Sustainability awareness

The ultimate goal for sustainability awareness is having sustainability in the DNA of the organisation. Sustainability needs to be an integral part of decision making. This doesn't mean that organisations should prioritise sustainability objectives over any other objective. This means that organisations need to set priorities for sustainability, as they need to set priorities for any other topics. Sustainability needs to be an integral part of any business case. This requires clear sign posting. Organisations need to start with setting their sustainable strategy, which includes Key Performance Indicators (KPIs), which need to be measured from day one. This will only be successful if senior leadership sponsors the sustainability strategy. The sponsorship goes beyond the Chief Sustainability Officer, typically the Chief Executive Officer is the most suitable sponsor.

In terms of sponsorship there is in addition to the internal oriented sponsorship also an external sponsorship towards clients, suppliers and ecosystem partners. The internal and external sponsorship are of equal importance.

Backed with the sponsorship of C-level representatives of the organisation, the Chief Sustainability Officer, or equivalent, needs to start the evangelisation. This is explaining the sustainability strategy in the organisation. Important in evangelisation is to provide concrete examples of what helps towards achieving the sustainability goals of the organisation, even better if the examples are specific for the audience, being a division or department of the organisation. In evangelisation also addressing the KPIs is important. Organisations that are successful in creating sustainability awareness for the environment in the context of information technology start with the procurement department. As procured devices and (cloud) providers are contributing significantly to the environmental impact of information technology. Not all elements in information technology are low hanging fruit but by adjusting the requirements and introducing sustainability criteria, the procurement department in conjunction with the business representatives can make an impact.

More in general the Chief Sustainability Officer has to identify sustainability champions in the organisation. In some organisations this will be a full time role, but in most organisations, especially the smaller organisations, this will be combined roles. The champions are embedded in the organisation and work as sustainability business partners. In evangelisation the sustainability office needs to manage this networked team of champions. As in any networked

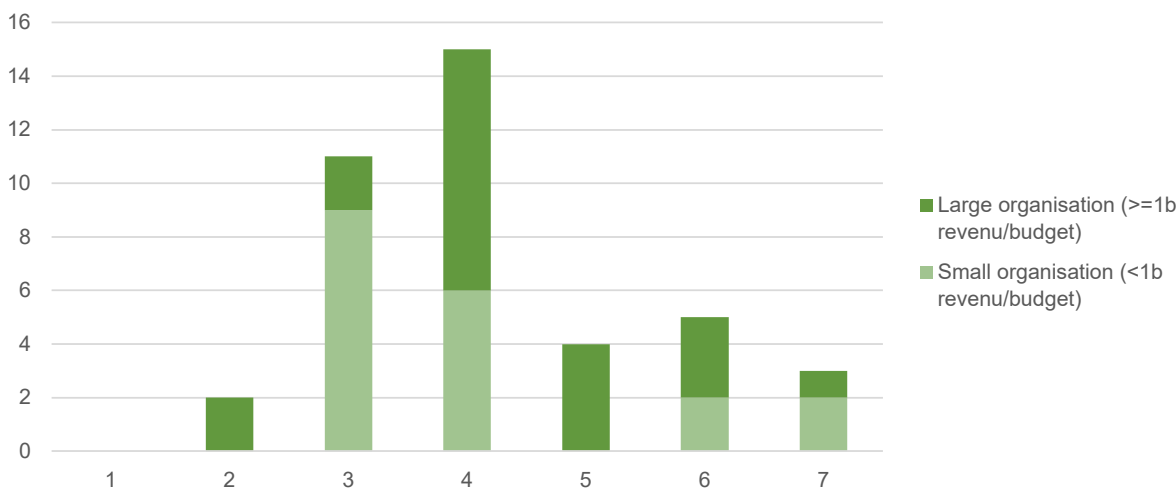


Figure 7: Sustainability awareness by size of the organisation, 1-7 Likert scale, 1=low sustainability awareness and 7=high sustainability awareness (N=40)

team, gamification is a good way of engaging with the champions as well as with the organisational units they represent. Furthermore, the sustainability office needs to set up dashboarding. Key in dashboarding is setting the right frequency – real time tracking and monthly publishing is for most organisations the optimal frequency. Organisations should not underestimate what it takes to set up and maintain proper dashboarding, nevertheless it is well spent effort. Along the way the sustainability office can expand reporting and make it specific for the relevant organisational units, nevertheless aligning KPIs and dashboards to the sustainability objectives is key.

That leaves us with the question on how to link dashboarding to the variable pay in organisations. Intrinsic motivation will always be important but defining organisational targets has been proven to be instrumental in making change happen. As organisational targets impact any decision and/or strategy, and enable any management level to critically reflect on the effect of any decision on sustainability. The responding organisations reported a low sustainability awareness, only three organisations report the highest possible score (Liker scale 1-7, where 7 is the highest sustainability awareness): a large international consulting organisation, and two smaller international organisations in consumer goods and distribution and hi-tech and professional services sector. In total 13 organisations had a Likert score of three or lower. This predominantly include smaller national organisations, however also three large international organisations, with a revenue/budget of +1b Euro, reported low sustainability awareness. In short many organisations have a lot of room for increasing the sustainability awareness. The full overview of the sustainability awareness is detailed in Figure 7.

INTERVIEW - RAINFOREST ALLIANCE



Henk van der Weele
Director of Development and Operations
at Rainforest Alliance

Henk van de Weele: “In our workflow-based application we track both the farm and the supply chain requirements. The farm requirements in the standard are designed to help farmers protect the landscapes where they live and work, while offering an enhanced framework to improve their livelihoods and advance the human rights of rural people.”

DATA CHALLENGES

Many organisations focus on data and data quality, as the rise of artificial intelligence is forcing organisation more than ever to make their data available for data driven decision making and analytics. Organisations not seldom overlook the importance of data and data quality for sustainability. Not only legislation such as the Corporate Sustainability Reporting Directive (CSRD) from the European Union, requires data and the ability to share data, also for setting sustainability Key Performance Indicators, data is essential.

Organisations focusing on improving data quality and accessibility need a Chief Data Officer (CDO), or equivalent. The focus of the CDO is on policy making, ensuring the right data management tooling is place and enabling data ownership. Similar to the role of the Chief Digital Officer also the Chief Data Officer will transform into a non-C-level when data has become part of the DNA of the organisation.

Also for sustainability data, ownership of data is essential. Many organisations with regards to sustainability data focus on the finance department. Nevertheless, for those organisations who produce goods, also the manufacturing departments, and for any organisation the procurement department. Having the data owners and their data stewards in place enables organisations to be compliant but also to achieve the sustainability goals.

There are four priorities for organisations to focus on, sustainable data definitions, the ability to consolidate internal and external sustainability data and share sustainable data, and ensuring cyber resilience of sustainable data.

Data definitions

Data definitions are essential to ensuring correct insights that can be captured driving sustainability and compliance. Many organisations have data quality issues in general, due to the nature of sustainability data, which are shared within the organisation and with other organisations, data quality including data definitions is even more impactful. Organisations must start with having proper data definitions in place. In order to achieve this, data management tooling combined with rigorous data management processes are essential. This will enable the management of data definitions over time.

Most of the surveyed organisations reported poor data definitions, only 25% of the organisations have high quality sustainable data definitions. None of the small organisations, having a revenue/budget 100m Euro or lower, have reported high quality sustainable data definitions. Most of the organisations that reported high quality sustainable data definitions are large organisations with a revenue/budget of +1b Euro. The average quality of the data definitions is 3.3 on a 1-7 Likert scale. This detailed in Figure 8.

Consolidating data

Following getting the data definitions in check, it is important for organisations to be able to consolidate sustainability data. The consolidation includes internal data coming from different divisions and/or departments, but also external sustainability data coming from ecosystem upstream partners. Smaller organisations are struggling to receive the required data from their ecosystem

upstream partners. Larger organisations have more leverage over their partners than smaller organisations.

The external sustainability data is not only relevant for compliance, but also from a procurement perspective, the consolidated data support organisations continuously optimise their procurement process. Sustainability data drives decision making. Insights in the impact of ecosystem upstream partners, supports procurement decision making and includes sustainability as a requirement of procurement decisions.

The ability to consolidate sustainability data is slightly worse than the data quality. Only 25% of the organisations have good consolidation capabilities for sustainability data. Also for the consolidation capabilities the larger organisations have stronger capabilities than the smaller organisations. Most of the organisations report only a 2 score on a 1-7 Likert scale. The average consolidation capabilities are a 3.2 score on a 1-7 Likert scale. This detailed in Figure 8.

Sharing data

Sharing data not only means consolidating data from upstream ecosystems partners. Sharing data with downstream partners also relevant, as sustainability is becoming more and more a decisive factor for many end consumers. By sharing data with downstream partners, organisations leverage a sustainability focus in the entire value chain. This data sharing also put sustainability as topic higher on the agenda in the ecosystems governance meetings. Basically, this is an extension of ensuring sustainability is in the DNA of an

organisation into ensuring sustainability is the DNA of an ecosystem. Two organisations report a 7 score on a 1-7 Likert scale. This is a government and public services and an international consultancy organisation. Also for the ability to share data, size matters. Larger organisations are typically better sharing data than smaller organisations. The average consolidation capabilities are a 3.2 score on a 1-7 Likert scale. This detailed in Figure 8.

Cyber resilience

As with any data, sustainability data is also sensitive. As a consequence, ensuring the sustainability data is safe is important. As due to the nature of sustainability data, sustainability data is shared in the organisation as well as with external partners, the cyber security risk is significant. This sets requirements for identity and access management, as well as for data classification and cyber security tooling. Especially the exchange of data with external parties and ecosystem partners, this further complicates cyber resilience. Implementing proper cyber security governance and tooling in an organisation is already challenging, let alone across an ecosystem. Larger organizations are much better at implementing proper cyber resilience for their sustainability data in the ecosystems. Only two small organisations state a 5 or 6 score on a 1-7 Likert score: organisations in government and public services and life sciences and healthcare sector. Only two large organisations, with a revenue/budget over 1b Euro score below 4 on a 1-7 Likert scale: a B2B distributor of technical installation materials and a governmental organisation. The average cyber resilience is a 4.2 score on a 1-7 Likert scale. This detailed in Figure 8.

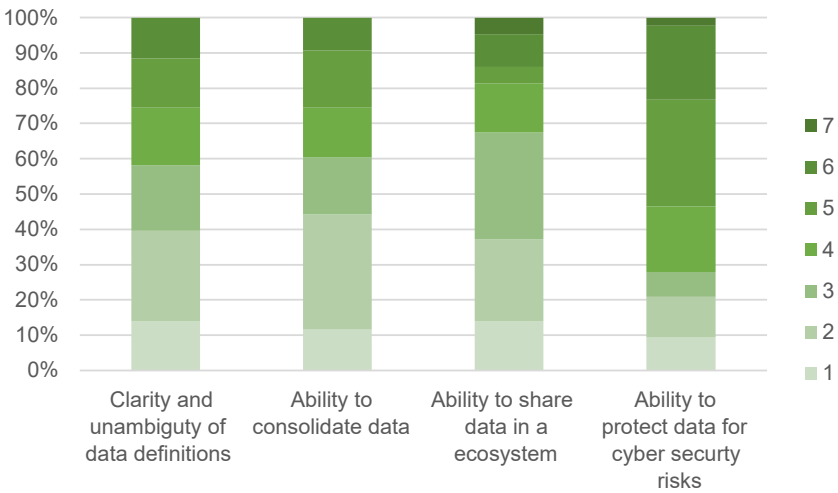


Figure 8: Overview of four data challenges, Likert scale 1- 7, 1=weak capabilities and 7=strong capabilities (N=43)



Figure 9: Overview of averages of the four data challenges by size of the organisation, 1-7 Likert scale, 1=low and 7=high (N=43)

MANAGING INFORMATION TECHNOLOGY

In order to contribute to sustainability and leverage green IT and greening by IT, it is important to properly manage information technology. This is the primary responsibility for the Chief Information Officer and/ or Chief Technology Officer. In order to provide a solid basis, an organisation needs to have the right resources and capabilities, a robust technology stack for reporting sustainability and a future proof Information Technology architecture.

Resources & capabilities

To successfully innovate in the sustainability area, the information technology team needs to have the right resources and capabilities. The most important counterpart for the technology teams are the sustainability data owners. Furthermore, it is important that the technology team keeps a close eye on the upcoming requirements related to new legislation in combination with changes driven by adjusting sustainability goals. For these topics the Chief Sustainability Officer is the most important counterpart.

Less than 15% of the surveyed organisations have high scores, >= 5 score on 1-7 Likert scale. These are predominantly larger organisations with a revenue/budget +1b Euro. The outcome of this survey is quite concerning. Organisations must consider setting up a centre of excellence to build and expand a tech team focusing on sustainability innovation to support their organisation in achieving their sustainability goals.

Reporting technology stack

Having unambiguous sustainable data definitions is a pre-requisite for achieving sustainability goals. In order to drive sustainability, the reporting technology stack is also important. Especially organisations with a large number of (legal) entities require a concise sustainability reporting stack, which also reports upstream sustainability reporting. The downstream and upstream external reporting is negatively impacted if organisations have not standardised their sustainability reporting stack. The sustainability reporting stacks of less than 20% of the surveyed organisation have high scores, >=5 score on 1-7 Likert scale. These are predominantly larger organisations with a revenue/budget +1b Euro. The outcome of this survey is quite concerning. Organisations must consider standardising their sustainability reporting stacks. Integrating their reporting stacks would be even better, however for sustainability reporting the market can be characterised as best of breed, instead of best of suite.

IT architecture

The IT architecture related to sustainability applications and data is fundamental for the ability to report and to adjust in order to meet future sustainability requirements. Nearly 30% of the surveyed organisations have a high score, >=5 score on a 1-7 Likert scale. These are predominantly larger organisations with a revenue/budget +1b Euro. The outcome of this survey is quite concerning. Actively measuring technical debt of the sustainability IT architecture is a

good practice, especially as the anticipated required level of change in many organisations is higher for the sustainability domain than for most other domains.

In conclusion.

Nearly 50% of the participating organisations have a low score on all three factors (resources & capabilities, reporting technology stack and IT architecture), <=3 score on 1-7 Likert scale. This predominantly includes the smaller organisations with a revenue/budget <1b Euro. There are only two organisations with a high score on all the three factors, >=5 score on 1-7 Likert scale. These are two large national organisations with a revenue/budget >=1b Euro in government and public services and energy resources and utilities sector. This is detailed in Figure 10.

Effectiveness and enforceability of sustainability policies

Sustainability policies support organisations to achieve their sustainability goals. Understanding the effectiveness and enforceability of the policies is important. The effectiveness is the responsibility of the Chief Sustainability Officer, where enforceability is a collective management responsibility. Any organisation must take the effort to implement proper governance for their sustainability policies.

Over 50% of the organisations are immature in terms of both effectiveness and enforceability. This includes organisations of any size and from all sectors. However, these organisations were predominantly national organisations. Less than 20% of

the organisations had mature scores on both effectiveness and enforceability of sustainability policies. Also, these organisations include organisations of any size and from all sectors. This is detailed in Figure 11.

INTERVIEW - NUTRECO



Coen Smits
Global Sustainability Director at
Trouw Nutrition, Nutreco

Nutreco will continue to develop its sustainability monitoring and reporting tools. Coen Smits: “It is essential to have tooling in place. In addition to the financial reporting we need to report non-financials.”. Tooling is important to enable audit trails.

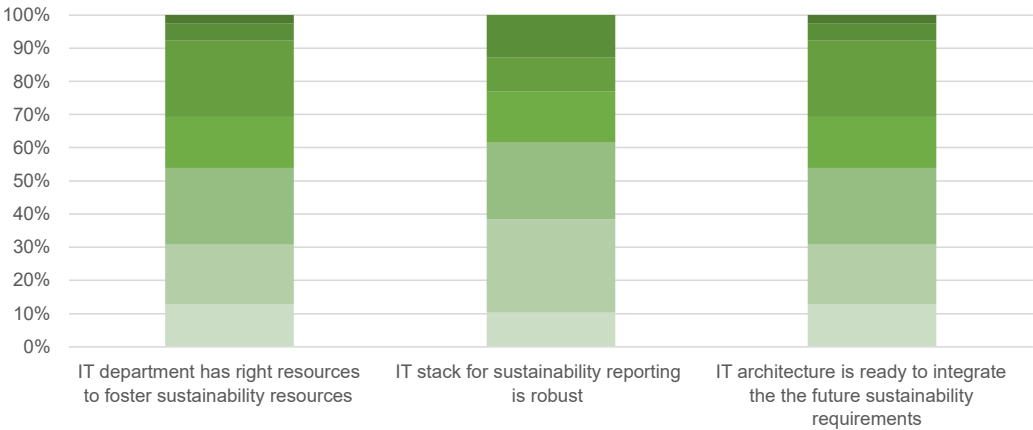


Figure 10: IT management capability by having the right resources and capabilities, a robust technology stack for reporting sustainability and a future proof Information Technology architecture, 1-7 Likert scale, 1= disagree and 7 = fully (N=39)

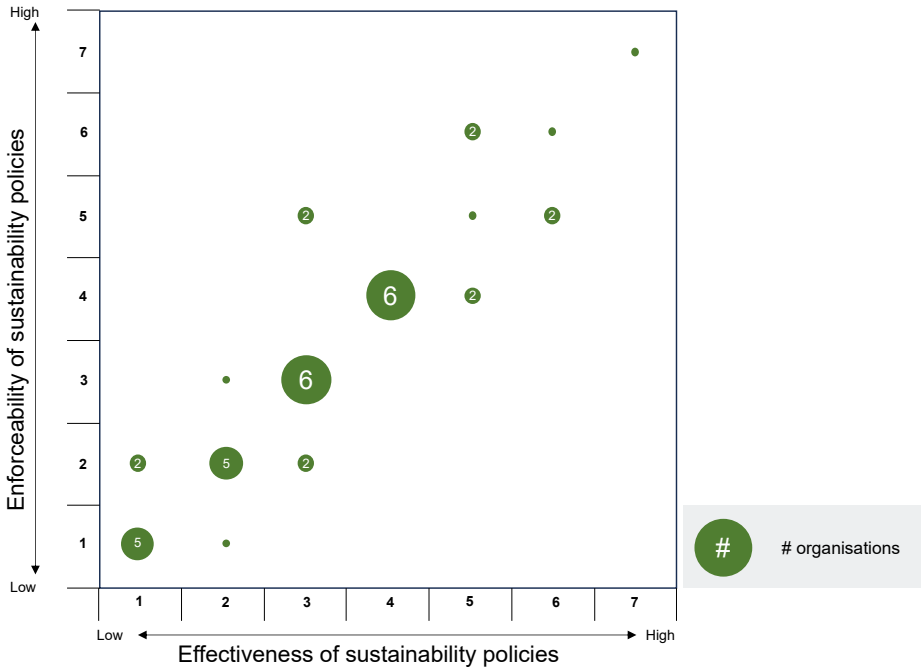


Figure 11: Effectiveness and enforceability of sustainability policies, 1-7 Likert scale, 1=low and 7=high (N=39)

Sourcing

In achieving the sustainability goals related to green IT the procurement of information technology plays an important role. Most of the surveyed organisations included sustainability criteria for procuring technology products, such as servers, end user devices and peripherals. These criteria included expected energy consumption during the lifetime of the device, manufacturing waste management arrangement, and percentage of recycled materials used for both devices and packaging. For (cloud)service providers the reporting is more straightforward and limited to energy consumption. Only three of the surveyed organisations didn't include sustainability criteria for procuring technology products. This included two large international manufacturing companies and one small national life sciences and healthcare organisation.

Sustainability weighting percentage

Most of the surveyed organisations report less than a 10% weighting percentage for sustainability in their criteria for evaluating proposals. There are seven organisations that report a weighting percentage of >=25%, remarkably this included predominantly larger international organisations. This percentage is rather high and might not be recommendable as the weighting percentage for sustainability cannot be allocated to other criteria, typically organisations have weighting percentage for sustainability up and until 10%.

Sustainability knock-out criteria

In selecting sustainable technology products, organisations can decide to include knock-out criteria. Not meeting a minimal sustainability threshold will exclude suppliers from winning the contract. Knock-out criteria enable organisations to emphasize other important aspects, including price, technical specifications and better general contractual terms. However, this defines a well-considered set of criteria. Too strict knock-out criteria will reduce competition. Furthermore knock-out criteria are more difficult for organisations that procure under the European tendering regulations. Over 65% of the surveyed organisations have included sustainability knock-out criteria, this includes 40% of the organisations in the government and public services sector.

The survey results combining the sustainability weighting percentages and knock-out criteria are detailed in Figure 12.

Procurement governance

In order to enable proper sustainability reporting, technology manufacturers and (cloud) service providers need to report their impact to their clients. This capability must be part of the selection criteria. Third party certification is an important assurance for organisations.

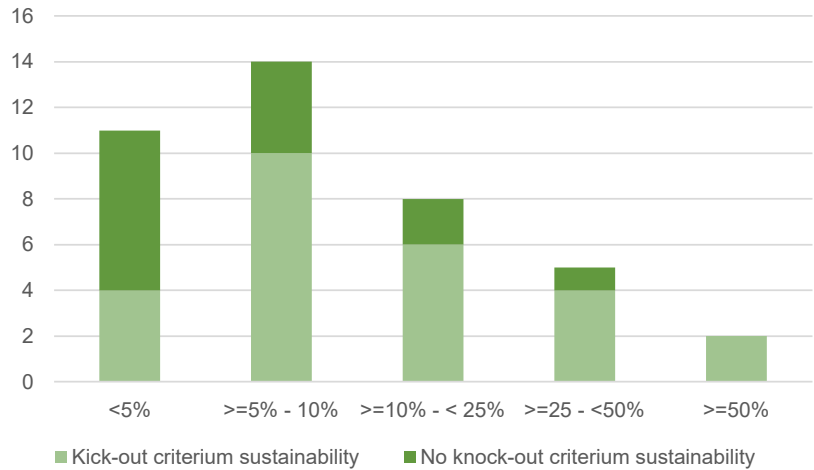


Figure 12: Sustainability weighting percentage for procuring technology products by applying sustainability as a knock out criterium, yes/no (N=40)

Surprisingly the reporting capabilities of the technology manufacturers and (cloud) service providers of the surveyed organisations are low. Only 30% of the respondents stated that their third parties have strong reporting capabilities, >=5 score on a 1-7 Likert scale. This predominantly includes large international organisations. Including sustainability reporting for technology manufacturers and (cloud) service providers is straightforward. This is detailed in Figure 13. Organisations must consider including this as knock-out criterium, as most organisations face legal requirements to include this impact into their sustainability reporting.

Technology governance

Many organisations have an ethical rule board to assess and monitor the use of data and algorithms. The focus is on avoiding bias in training the algorithms as well as safeguarding privacy. Typically, the Chief Data Officer, the Chief Information Officer and legal representation are part of this governance board. As sustainability data are becoming more and more important and the volume of sustainability data is growing, which includes internal as well as external data, organisations must consider adding the Chief Sustainability Officer, or equivalent, to the ethical rule board. Just over 50% of the surveyed stated that adding the Chief Sustainability Officer to the ethical rule board must be considered.

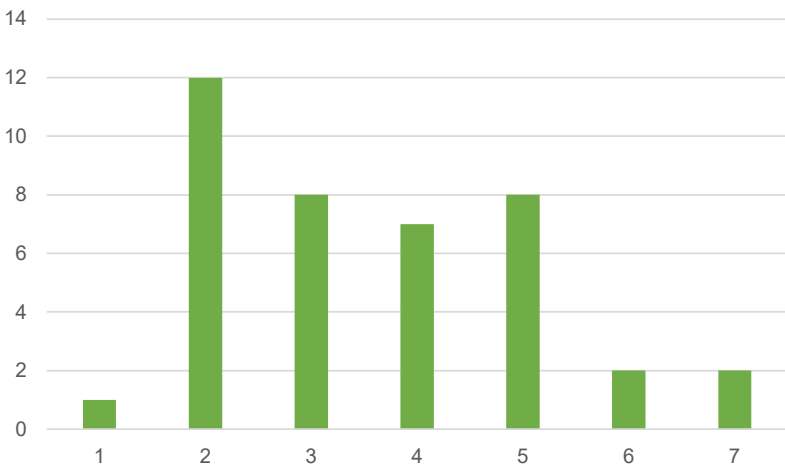


Figure 13: Ability of technology manufacturers and (cloud) service providers to report the sustainability impact to their clients, 1-7 Likert scale, 1=low and 7=high (N=40)

INTERVIEW - NUTRECO



Rene Smetsters
IT director Global IT services at Nutreco

Understanding the sustainability vision of suppliers is a starting point. René Smetsters: “We experience that suppliers are taking sustainability more and more seriously, which we highly appreciate. In the selection process we spend time to understand the sustainability of the propositions of our potential suppliers.”

IMPLICATIONS OF LEGISLATION

The Corporate Sustainability Reporting Directive (CSRD) is European Union legislation. This directive requires companies to report on the impact of activities on the environment and society, and requires the audit (assurance) of reported information. It requires the availability and aggregation of a lot of data points. The data points include internal as well as external data points.

Only two thirds of the surveyed organisations are embarking or have finalized a CSRD implementation. If the remaining one third of the organisations have to be compliant with the CSRD, it is recommended to start rather earlier than later. As applying double materiality is complex and typically requires involvement of a large number of internal and external stakeholders. Nearly 70% of the surveyed organisations that have embarked on the implementation of CSRD state to be on track. This is well above the status of most organisations. Only just over 30% of the surveyed organisations stated to be behind, where none of the organisations stated to be far behind or ahead with their CSRD implementation.

Implementation challenges

The surveyed organisations report a large number of challenges. This includes data quality and availability, sustainability tooling and the availability of sustainability subject matter experts and business representatives. Data related issues are the most reported CSRD implementation challenge. This is detailed in Figure 16. The surveyed organisations reported four other CSRD challenges including a lack of awareness of the finance function and a lack of involvement of the IT department. Furthermore, data mapping, which is linked to data quality and data availability, was mentioned. Lastly also the lack of management attention was reported as a challenge.

Risks versus opportunities

CSRD is not only focusing on sustainability risk identification, but also enabling the exploration of sustainability opportunities. In this survey only 15% of the surveyed organisations reported that CSRD is not providing great risk identification, nor sustainability opportunities. This group of non-believers contains predominantly small national organisations. On the other hand, nearly 60% of the surveyed organisations identified both great sustainability risk identification abilities as well as great CSRD benefits to identifying sustainability opportunities. Nevertheless, the surveyed organisations see slightly more CSDR value in sustainability risks than in exploring sustainability opportunities. This is detailed in Figure 15.

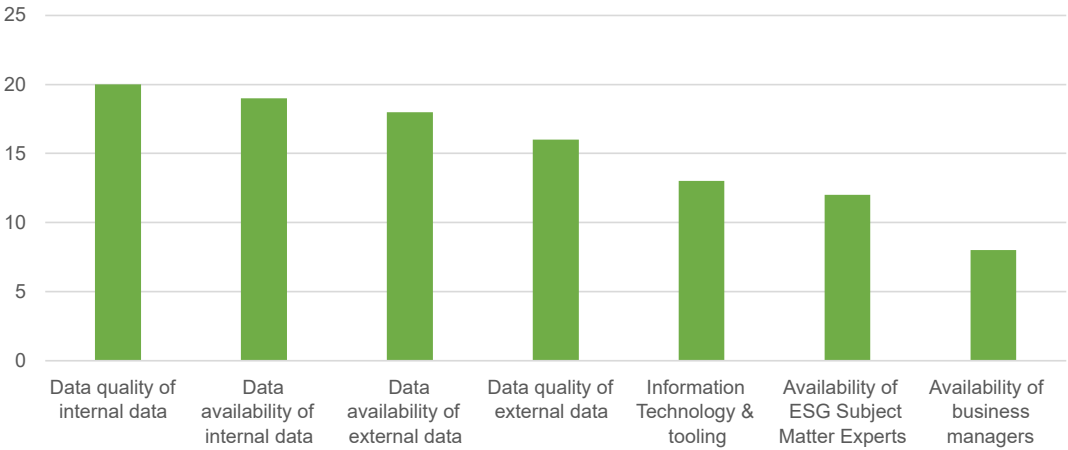


Figure 14: CSRD implementation challenges (N=26 - remaining respondents have not started a CSRD implementation)

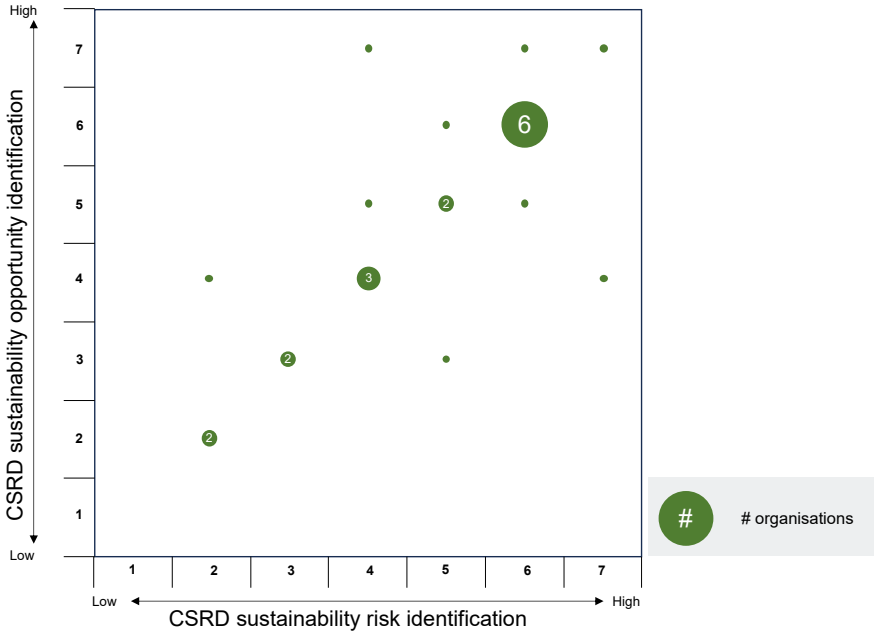


Figure 15: CSRD sustainability risk identification versus CSRD sustainability opportunity identification, 1-7 Likert scale, 1=low and 7=high (N=26)

INTERVIEW - MEDIA.MONKS



Regina Romeijn
Global head of ESG at Media.Monks

Sustainability is on the forefront and Media.Monks reports on sustainability in their sustainability report. Regina Romeijn: “I’m spending a lot of time explaining what data is required for preparing sustainability reporting. This explanation is not to C-level but to managers and subject matter experts in my organisation. We are getting there but the volumes of data required are big.”

INTERNATIONAL SUSTAINABILITY STANDARDS BOARD

The International Sustainability Standards Board (ISSB) is a standard-setting body. This is established by the IFRS Foundation. The IFRS’ mandate is the creation and development of sustainability-related financial reporting standards to meet investors’ needs for sustainability reporting. The focus of the ISSB is harmonizing sustainability reporting, reducing burdens, complexity, and confusion for organisations, and promoting sustainability reporting.

Just over 10% of the surveyed organisations have already implemented ISSB, these are all large international organisations. Over 50% of the surveyed organisations are not considering implementing ISSB in the next 24 months, obviously this 50% includes all governmental organisations.

ACTION REQUIRED

The survey and the round tables have provided valuable insights. The most important question is, what are we going to do next? The seven actions below will keep your organisation in check. The actions are clustered into two themes: 1. Structuring & organizing for success, and 2. Leveraging information technology. The actions will improve the sustainability profile of your organisation and increase the ability to create value.



Structure and organize for success

- 1. Set sustainability goals.** As any goal, also sustainability goals are not set in stone. Organisations need to regularly evaluate their sustainability goals. The Chief Sustainability Officer, or equivalent, is driving the goal setting. Are the sustainability goals still challenging enough? This requires analysing market trends as well as analysing the sustainability goals of peers. Furthermore, upcoming legislation also needs to be taken into account. The reported Key Performance Indicators also provide excellent input for the evaluation process. Typically, organisations review their sustainability goals and strategy annually. In setting sustainability goals, sufficient management commitment is also required. Typically, involvement and commitment of management can be involved when they are educated and feel more familiar with the topic. Also the Chief Sustainability Officer and the team are working closely with management to bring them up to speed and update them on the latest developments, including upcoming sustainability legislation.
- 2. Ensure proper reporting lines.** In order to ensure sustainability receives sufficient focus, many organisations have started appointing a Chief Sustainability Officer. Introducing a C-level role is needed to successfully embark on the sustainability journey. The Chief Sustainability Officer needs to report into a C-level role, typically the Chief Executive Officer or the Chief Financial Officer. Due to the increasing sustainability legislation, the Chief Sustainability Officer also needs to be aligned with the risk officer, regardless if this is C-level role. The risk officer and the Chief Sustainability Officer can team up to set the right priorities in implementing measures to appropriately address risks.
- 3. Align with sustainability operating model.** In implementing the sustainability team operating model, most organisations start with a central team that is both accountable and responsible for sustainability. By expanding the sustainability team first, responsibilities will be transferred to sustainability teams in the organisation. Organisations might consider in the foreseeable future to also transfer sustainability accountabilities to the sustainability teams in the organisation. Potential candidates for decentralised accountabilities are sustainable data ownership as well as designing and maintaining organisation unit specific sustainability policies. It is the expectation that most organisations will continue to have the accountability for sustainability oversight in the central sustainability team. This central sustainability team will also continue to serve as a centre of excellence.

Leverage Information Technology

- 4. Embrace green IT and greening by IT.** Key is making green IT a priority. Low energy consumption of devices and data centres are lowering hanging fruit. Expand green IT to re-cycled hardware, operating systems with extensive support periods and usage of degradable packaging materials, followed by energy efficient software coding as well as the use of energy efficient Software as a Service applications and off the shelf software. In addition organisations must also focus on greening by IT. Use collaboration tools to avoid travel and commuting is a good start. Consider also software solutions to manage the use of your office buildings more sustainable by advanced climate and light control.
- 5. Ensure a robust IT landscape.** Essential for a robust IT landscape is the ability to cater for sustainability requirements. The focus is on sustainability data sharing and aggregation of sustainability data. Furthermore, the IT landscape needs to be able to support sustainability tooling to enable sustainability legislation compliance. Enabling sustainability legislation compliance is also key for ensuring a solid IT sustainability architecture. This architecture must also cater for evolving sustainability goals of the organisation. A robust IT landscape is also cyber resilient. Sustainability data is sensitive data with increasing volumes overtime. Organisations need to make sure the sustainability systems are safe.
- 6. Address data challenges.** Organisations must ensure unambiguous data sustainability data definitions. The challenge is not only with internal data, but also with external sustainability data from suppliers and ecosystem partners. For consolidating sustainability data, unambiguous data is a pre-requisite. The consolidation itself is challenging due to misalignment on time stamps and completeness of the sustainability data. This is similar for data sharing. This ability is related to identity and access management. This is already complex with organisations, let alone across organisations. This requires proper sustainability data classification. Finally, not only do the systems have to be cyber resilient, also the sustainability data has to be cyber secure.
- 7. Set a solid technology sourcing strategy.** A solid technology sourcing strategy includes sustainability criteria with a weighting factor up and until 10% of the total score. This includes SMART criteria such as energy efficiency over the lifetime of a device, manufacturing waste management arrangements and for (cloud) service providers the energy consumption. In waste management re-furbishing and re-using are important. Furthermore, organisations must consider a knock-out criterium for certificates such as 1% for the Planet and B-corp. In the selection process organisations must verify the capabilities of the manufacturer and/or service provider to report on sustainability, as the impact has to be included in the sustainability reporting of the organisation.

INTERVIEW - RAINFOREST ALLIANCE



Henk van der Weele
Director of Development and Operations
at Rainforest Alliance

Henk van der Weele, Rainforest Alliance’s Director of Development and Operations: “We are creating a more sustainable world by using social and market forces to protect nature and improve the lives of farmers and forest communities”. Certification plays a key role in supporting more sustainable production. The Rainforest Alliance little green frog is a symbol of environmental, social, and economic sustainability. The certification seal means that the product (or a specified ingredient) was produced by farmers following the Rainforest Alliance standard for sustainable agriculture.

SUBJECT MATTER EXPERT - XEBIA



Martijn van de Grift
Google Cloud Practice Lead at Xebia

“Cloud Sustainability represents the convergence of FinOps and GreenOps, where resource optimization becomes the linchpin for reducing carbon emissions and driving cost efficiencies. This synergy underscores the urgency of our era, defined by diminishing resources and the imperative to embrace sustainable practices. As we navigate the sixth wave of innovation, the fusion of optimization and Green Tech in the cloud is not just a strategic choice, but a moral obligation to safeguard our planet for future generations.”

CONCLUSION

The actions have defined what we need to do now and in the years to come. Let us see how we can be prepared for the midterm. What can we expect? There are three aspects that will be featured. The sustainability operating model, followed by legislation and to wrap up the conclusion section, the challenges and opportunities will be detailed. Any organisation needs to understand sustainability, as sustainability is here to stay and sustainability will be even more on the forefront.

Sustainability operating model

Most organisations have implemented a central sustainability team focusing on developing and implementing sustainability policies and supporting the organisation. The sustainability expertise and experience in the rest of the organisation is in most organisations limited. Also a lot of focus is required on ensuring proper data ownership for the sustainability data. This has to be embedded in organisations. Central sustainability teams support the nomination of sustainability data owners and support the data owners and their data stewards in implementing this properly. This is an important step in improving sustainability maturity and embedding sustainability in the DNA of an organisation. This will trigger in the mid-term also a more decentralised sustainability operating model. In addition to the central sustainability team there will be sustainability liaisons in the organisation.

Furthermore, the role of the Chief Sustainability Officer will evolve. The importance of sustainability will most likely not decrease. However, if sustainability is embedded in the DNA of the organisations, organisations need to ask themselves the question, does sustainability still requires a C-level role? Similar to the Chief Digital Officer, which in many organisations is currently a digital transformation director or head of transformation role, also the role of the Chief Sustainability Officer might be adjusted into a sustainability director role or a head of sustainability role. This will not change the responsibilities for driving and implementing the sustainability strategy and facilitating the organisation in achieving the sustainability targets.

Legislation

Legislation will drive further need for Chief Sustainability Officers, or equivalent, to align with the compliance officer. The Chief Sustainability Officer needs to ensure that the sustainability policies are aligned to the current and upcoming legislation. What is key is anticipation. Being proactive is a prerequisite to keeping up the pace. Furthermore, this might require setting sustainability strategies by region or even by country. Some organisations make more bold decisions by relentlessly adopting the most stringent legislation and applying this to any geography in which the organisation operates. These bold organisations are more harsh when adopting but also are more resilient over time. In all fairness, only large organisations can adopt this bold strategy. Smaller organisations are not able to stay ahead of the curve, for smaller organisations, keeping up is already a sufficient challenge.

In a European Union context there is a focus on 1. green washing (Directive for Empowering Consumers for the Green Transition and Green Claim Directive), 2. decarbonization (Net-Zero Industry Act and revision to the EU Emission Trading System, Energy Performance Building Directive and fuel related legislation including the Alternative Fuels Infrastructure Regulations, the ReFuelEU aviation and the FuelEU Maritime Initiative) and 3. circularity including Eco Design for Sustainable Products Regulation, Packaging and Packaging waste, Legislative Right to Repair and the revision of the EU Waste Framework Directive.

Challenges and opportunities

The above details an increased body of applicable legislation that will have a significant impact operating models and business models of organisations. Organisations have to realise that sustainability is an integral part of future products and services. Furthermore, it is impacting value creation in ecosystems.

Nevertheless, investment in sustainability must always be business case driven. Sometimes pay back periods for investments in sustainability are longer than for other investments, however it must be considered. This is related to decisions on the pace of implementing sustainability. What is never wrong is consuming less, where this is

by extending the duration of the use of devices or avoiding travel and circularity are no brainers. Some organisations also might have to deal with activism. Activists would like organisations to drive sustainability at a high pace. In setting sustainability strategies, organisations need to incorporate the potential impact of activism. The need to incorporate this is growing.

Basically, organisations have two choices. Either they limit their sustainability strategy to compliance only, or alternatively the organisation focuses fully on sustainability and is aiming for a best-in-class status. This great divide will do much harm to our environment, as organisations that focus on compliance only will also shift their operations to lower sustainability regulated countries. The strategy of these anti-sustainability nomads will negatively impact the environment of vulnerable economies most, in developing countries, sustainability is typically less strict. Therefore governments of strong developed economies need to support these vulnerable economies to avoid the negative impact on sustainability by these anti-sustainability nomads.

In conclusion

Including sustainability in doing business will be the new normal. An integral approach of sustainability will drive change. In the next decade, organisations with strict sustainability goals will outperform. This sets a clear agenda for the leadership of any organisation!

SUBJECT MATTER EXPERT - XEBIA



Jeroen Hovinga
Digital Strategist at Xebia

“To achieve sustainability goals, organizations should implement a robust digital transformation strategy that includes utilizing sustainable operating systems such as ChromeOS and extending the lifespan of their devices.

Embracing ChromeOS not only modernizes the computing experience but also contributes to a carbon-free future and the preservation of the planet. This approach entails responsible manufacturing, energy-efficient consumption, and promoting device reuse, leading to a reduction in e-waste and the prolonged usefulness of computing devices.”

INTERVIEW - NUTRECO



René Smetsers, IT director Global IT services at Nutreco: “I’m globally responsible for the IT infrastructure and I’m working closely with my teams to contribute to sustainability, as Nutreco is working across the value chain to achieve sustainability.”



Regina Romeijn

Global head of ESG at Media.Monks

INTERVIEW - MEDIA.MONKS

Media.Monks signed up for net zero by 2040

Media.Monks is a global digital-first operating company that connects content, data and digital media, and technology services. In providing marketing services, they are partnering with technology companies providing both custom and enterprise technology solution-enabled experiences. Regina Romeijn, global head of ESG at Media.Monks: “We are helping clients with owning their data, transforming their digital marketing and building customer ecosystems.”

Media.Monks creates marketing content and experiences. Regina Romeijn: “With an increased focus on scope three emissions we are engaging with clients on the energy consumptions of the selected platforms. We are comparing media impact, costs and energy consumption.” This enables organisations to include energy consumption as an explicit criterium in running marketing campaigns. In all fairness, for most organisations the energy consumption related to marketing campaigns is a relatively small part of their total energy consumption. Regina Romeijn: “However the increased use of artificial intelligence is making energy consumption related to marketing campaigns more significant but still relatively small.”

Sustainable data collection

Awareness at the C-level is high, which is the case for most companies. Sustainability is on the forefront and Media.Monks reports on sustainability in their sustainability report. Regina Romeijn: “I’m spending a lot of time explaining what data is required for preparing sustainability reporting. This explanation is not to C-level but to managers and subject matter experts in my organisation. We are getting there but the volumes of data required are big.” In the evangelisation business owners initially need to be made aware of ESG and how that impacts their core activities. It needs to become an integral part of the activities within their role. That requires knowledge and willingness to change. Especially in fragmented and decentralised organisations this is challenging. Regina Romeijn: “Standardisation of data definitions and alignment on the level of granularity of data collection is important. Even for simple data sets such as business travel this can be problematic. We have 61, operate in 32 countries and employ roughly 8.000 people, we have multiple different business travel tools and some offices don’t use any business travel tool.” Furthermore, the allocation of energy consumption of shared resources, such as desks in a shared office space, is problematic. In addition to allocating data owners, adjusting processes might also be needed. As part of shaping up,

new roles in the organisation also emerge. Organisations need to realise that these are permanent roles. Data gathering is not a one-off and the continuous increasing compliance and legislation related requirements will further increase the volume of resources required for fulfilling the sustainability requirement and needs.

This is where organisations need a hand-on Chief Sustainability Officer. The person needs support from the Board and the Executive Committee to keep the pace. Regina Romeijn: “In a collaborative way, sustainability officers can achieve a lot.”

External auditor

Also notable is the attention from external auditors for sustainability reporting. Nowadays sustainability reporting is an integral part of the annual report. Regina Romeijn: “Last year I noticed a different responsible for the sustainability report. This year three audit teams are fully focussing on the sustainability report.” This is a good indication of the pace of sustainability legislation. Regina Romeijn: “Organisations need to understand that sustainability legislation is global legislation. The days that the European Union was the only legislator are over.” For example, the Green Claims Directive from the European Union, which is focusing on misstatement and misleading sustainability marketing and communications, has been mirrored by the United States. In the adjusted Green Guides from the Federal Trade Commission the standard and the requirement from the Green Claims Directive are re-used. It is safe to assume that in the mid-term there will be global sustainability standards. This will reduce the reporting and compliance effort of organisations.

Broader sustainability context

In the context of sustainability Media.Monks also prioritises diversity and cultural fluency. Regina: “We signed in 2022 the UN Women’s Empowerment Principles. We are also focused on closing the representation gap in our industry by providing training to underrepresented talent.” As part of their mission, Media.Monks support their clients in their mission towards a more sustainable future by continuing to use technology and creativity as forces for good.

Furthermore Media.Monks has completed their Task Force on Climate-Related Financial Disclosures (TCFD) risk assessment and entered their data into the global Carbon Disclosure Projects (CDP) system, are EcoVadis registered and under Bcorp assessment. They use the SBTi standards for our net zero targets To stay ahead and to be a sustainability frontrunner, Media.Monks needs to continue to innovate. As their marketing and communications services become more technology heavy. This is due to the intense use of technologies such as artificial intelligence for analysis, customer recommendations and profiling, and metaverse for increasing immersive experiences. Also, clients have to report scope three emissions, clients will continue to ask for more sustainable technology enabled services. The continuous demand of clients makes us progress our emission reporting standards for client related projects too.



Rene Smetsers

IT director Global IT services at Nutreco

INTERVIEW - NUTRECO

Nutreco is working across the value chain to achieve sustainability

Advanced nutritional solutions are at the origin of food for millions of consumers worldwide, including animal nutrition and aquafeed. Nutreco operates in 40 countries and employs over 11.000 staff. The business operations of Nutreco have a more significant environmental impact than their information technology services. René Smetsers, IT director Global IT services at Nutreco: “I’m globally responsible for the IT infrastructure and I’m working closely with my teams to contribute to sustainability, as Nutreco is working across the value chain to achieve sustainability.”

Nutreco’s slogan is “Feeding the future”. Coen Smits, global sustainability director and Trouw Nutrition/Nutreco: “We are taken responsibility for the sustainability of our ecosystems. We not only focus on our organisation, we also support our clients in achieving their sustainability goals.” There are two examples here: First our program to enable our customers to reduce the carbon footprint, with as first market focus the EU. Secondly, we have developed programs to support animal health and reduce the use of antibiotics. Especially in South America and Asia there still is a high need to work on this topic. The IT infrastructure focus is on availability, security and cost efficiency. Therefore, Nutreco was one of the first companies in the Netherlands to embark on a cloud journey. René Smetsers: “We

embarked on the cloud journey in combination with virtualisation about two decades ago and still have a cloud first strategy in place.” One of the considerations in their cloud strategy is sustainability, as the footprint that cloud services provides, due to scale, is lower than the footprint of internal data centers and decentralised server rooms. René Smetsers: “We need to be realistic, the contribution to sustainability of information technology, in the context of our operations, is limited. Our factories are responsible for the largest part of our footprint. Nevertheless, we still take the sustainability impact of information technology into account.” René Smetsers is in close collaboration with the sustainability team working on defining sustainability key performance indicators for his services. Currently the power usage of devices is already included in the internal service catalogue. This facilitates decision making for end-users and managers.

With regards to greening by IT, as any company, COVID has expedited the implementation of online software. René Smetsers: “In March 2020 we managed to have Microsoft Teams live for the entire organisation in one day, to facilitate working from home.” Following a further standardisation of collaboration tools was helpful in reducing commuting and business travel. The standardisation also enabled internal and external data sharing.

Centralisation & Cloud

Three years ago, the cloud first strategy resulted in the decommissioning of the datacenters as this functionality has been moved to the Cloud. In the next period, we will further evaluate if decentralized office servers can also be moved to the cloud. René Smetsers: “We also want to apply this strategy to our factories, but adopting the cloud strategy in this domain is more difficult. Latency issues are more critical in factories than in an office environment and of course not all factory applications are cloud ready. Recently we have replaced many servers in our factories. Virtualisation is the norm and this has resulted in a reduction of the footprint.” Virtualisation in factories also requires a longer timeline due to the depreciation period of the factories’ hosted applications. Also, due to the diversity of applications, including customisations, in the factories across the globe, standardisation is challenging. René Smetsers: “In short, virtualisation is the next best alternative.”

Key in the cloud first strategy is Nutreco’s strategy to maintain a single cloud stack. René Smetsers: “We are not a small corporation, but managing multiple cloud stacks is just more difficult. Managing a single cloud stack reduces operational complexity and is less demanding from a resourcing perspective, particularly related to knowledge management. Furthermore, due to the consumed volumes, a single cloud stack results in lower unit prices and reduced ingress/egress charges from multi-cloud data sharing. This must be balanced with single platform redundancies to mitigate risk.”

Life cycle management

In addition to energy consumption, Nutreco has life cycle management policies. René Smetsers: “In our policies, selling hardware is a priority. In addition to generating cash, the life cycle of the equipment is also extended. We support charities that dependent on revenues from selling our hardware. For the last decade, we financially supported a school in Bangladesh with revenue generated from selling hardware.” Next, Nutreco also has an emphasis on recycling, each region has its own recycling partners. René Smetsers: “For us working with certified partners is essential. Our focus is on enabling recycling. We successfully try to avoid that our hardware ends up in a landfill.” With regards to packaging materials, we see that vendors have made a lot of improvements over time, as nearly all packing materials are cardboard. René Smetsers: “We have a separate waste stream for recycling cardboard packaging materials.”

Sourcing

In engaging with information technology suppliers, sustainability is an important topic. Understanding the sustainability vision of suppliers is a starting point. René Smetsers: “We experience that suppliers are taking sustainability more and more seriously, which we highly appreciate. In the selection process we spend time to understand the sustainability of the propositions of our potential suppliers.” Nutreco ensures all of their suppliers are able to report on sustainability to ensure compliance with regards to their CSRD compliance.

CSRD

Nutreco will continue to develop its sustainability monitoring and reporting tools. Coen Smits: “It is essential to have tooling in place. In addition to the financial reporting we need to report non-financials.” Tooling is important to enable audit trails. In addition to the tooling, it is also needed to implement sustainability KPIs for IT. CSRD reporting is focusing on the impact of factories, and to a lesser degree on the impact of information technology. Coen Smits: “Besides continuing with monitoring existing kpi’s, we are currently working on detailing some new metrics per topic that came out of our materiality assessment. This will set the objectives and we can start monitoring. We are in a good shape for 2025 – when our first reporting has to be delivered.”

In CSRD data collection and consolidation, ERP applications have a central role. All relevant data, including sensor data, is made available in dashboards. Nutreco’s sustainability and technology subject matter experts and business representatives, are currently working on this. René Smetsers: “For us the next level is to better structure and standardise the sustainability data. This will provide enhanced insights which will help us to further drive sustainability. In this journey we work closely with the manufacturers of industrial equipment we are procuring for our factories, as these manufacturers typically also provide software related to industrial equipment.” These manufacturers are therefore an integral part of Nutreco’s ecosystem.

The information technology sustainability data is mostly related to the assets. René Smetsers: “Our asset management tool is up to date and feeds directly into our sustainability report tool.”



Henk van der Weele

Director of Development and Operations at Rainforest Alliance

INTERVIEW - RAINFOREST ALLIANCE

Rainforest Alliance: technology enabled certification for a more sustainable world

The Rainforest Alliance is an international non-profit organization working at the intersection of business, agriculture, and forests to make responsible business the new normal. Since 1987 they are building an alliance to protect forests, improve the livelihoods of farmers and forest communities, promote human rights and help them mitigate and adapt to the climate crisis (<https://www.rainforest-alliance.org/about/>). Certification plays a crucial role in enabling a more sustainable world. Henk van de Weele, Rainforest Alliance's Director of Development and Operations: "We are creating a more sustainable world by using social and market forces to protect nature and improve the lives of farmers and forest communities".

Certification plays a key role in supporting more sustainable production. The Rainforest Alliance little green frog is a symbol of environmental, social, and economic sustainability and can be found on tropical products or ingredients around the world. The certification seal means that the product (or a specified ingredient) was produced by farmers following the Rainforest Alliance standard

for sustainable agriculture. The standard contains requirements related to forests, climate, human rights and livelihoods. Henk van de Weele: "In our workflow-based application we track both the farm and the supply chain requirements. The farm requirements in the standard are designed to help farmers protect the landscapes where they live and work, while offering an enhanced framework to improve their livelihoods and advance the human rights of rural people." Of equal importance are the supply chain requirements, which aim to foster transparency and responsible business practices among companies from farm to shelf. Henk van de Weele: "We have linked our royalty system to the application to help ensure the right remittance related to seal-bearing products."

Claim application

Important in the certification process is that the products and ingredients are logged in the Rainforest Alliance claim application. The certification process starts with the farmers and foresters. They register their products and ingredients, followed by the registration of the corporations that buy the products and ingredients. Henk van de Weele: "Companies, including multinationals such as Nestlé and Unilever, can use our seal on their products, if they procure from farmers which are part of our program, provided that they follow

certain guidelines as per our labelling policy." The claim application basically registers the supply chain. Henk van de Weele: "The seal allows consumers to recognize and choose products that contribute toward a better future for people and planet"

Bridging technology challenges

During the certification process the Rainforest Alliance has to bridge some technology challenges. The multinationals that are procuring the agricultural products and ingredients from certified farmers have interfaced their applications with the Rainforest Alliance claim application. This is challenging for farmers. Henk van de Weele: "Most of the farmers don't have access to technology and cannot directly interface with our workflow-based application." Nevertheless the farmers do have mobile phones, however this is not part of the technology stack of the Rainforest Alliance. Henk van de Weele: "In the past we have explored this road. The challenge is that farmers across the globe all have different mobile phones. The interface is simply too complicated." Fortunately, most farmers are operating in cooperatives. This bridges the technology challenge. The level of automation in cooperatives is sufficient and connects the farmers to the Rainforest Alliance claim application. Henk van de Weele: "Also our local Rainforest Alliance colleagues provide technology support to the farmers and farmer's cooperatives." This collaboration is important to ensure a rigorous claim registration process, as some of the registration is still on paper and in excel spreadsheets. The good news is that the data collection for the certification process is standardised, which facilitates the process and reduces the risks of collecting incorrect data. Henk van de Weele: "The conversion of data into electronic data is key. The electronic data is the foundation of our claim registration."

Leveraging technology opportunities

Beyond the claim applications, technology plays an important role at the Rainforest Alliance. To support responsible farming it is important to maintain the agricultural lands responsibly, which includes water management. Henk van de Weele: "To support farmers and foresters locally we provide them and our local Rainforest Alliance colleagues with reports, based on geodata. We use satellite images to provide the best possible insights." In close collaboration, improvements related to sustainability, but also to yield, are explored. Geodata are an important source to successfully implement these improvements. Henk van de Weele: "The next step will be large scale data analytics, currently our focus is on insightful reports. We simply need more data to do meaningful data analysis. Local differences hinder us to generalise the insights. This is why we offer local collaboration. Our local Rainforest Alliance colleagues are always near." At the Rainforest Alliance, reporting is centralised. This provides a solid basis for even more data driven approaches and ways of working and expanding the business intelligence teams in the future.

Local flavour

Despite being a global organisation, the Rainforest Alliance has a local touch. Henk van de Weele: "This local connection is essential for maintaining long-term relationships between farmers and foresters and companies which is instrumental for business resilience. Most of these partnerships are very stable and are based on a balanced pricing structure. Henk van de Weele: "What is relevant are the arrangements and financial support in the unfortunate situation of a failed harvest. This is where companies can provide stability to local economies, which is key for sustainability."

The Rainforest Alliance helps enable more sustainable farming and forestry and plays an important role in advancing the sustainability of products we buy, with their certification process.

APPENDICES

Workshops and survey

The data for this research was collected in webinars and workshops and by a survey. The webinars and workshops took place on 8 November 2023, 16 January, 29 February and 4 April 2024. An overview of the participants is detailed.

The survey was conducted by ICT Media. The members of this community are chief information officers, chief data officers, and their direct reports. This community was also invited via LinkedIn. This invitation resulted in 58 responses.

Since the survey was anonymous, it is not possible to establish the extent to which the sample was representative of the community. However, given the spread over the different sectors and the size of the organisations that the respondents represent, there is no indication that they are not representative of the community, which was also confirmed by ICT Media. The participants completed their response via an online portal. The responses were collected from 25 January until 17 March 2024. An overview of the participants is detailed on the next page.

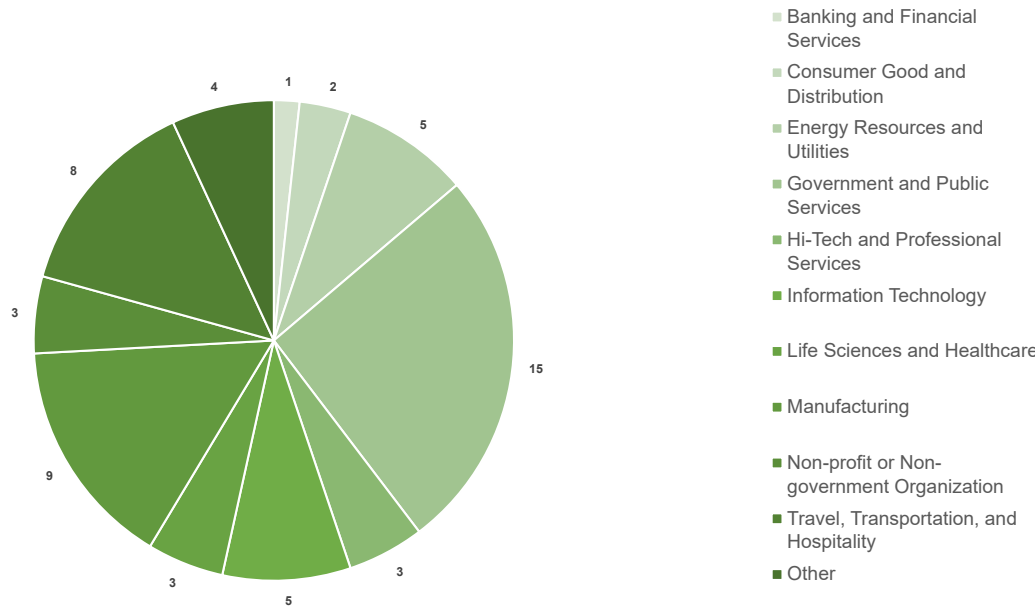


Figure 16 - Overview of sectors of the surveyed organisations (N=58)

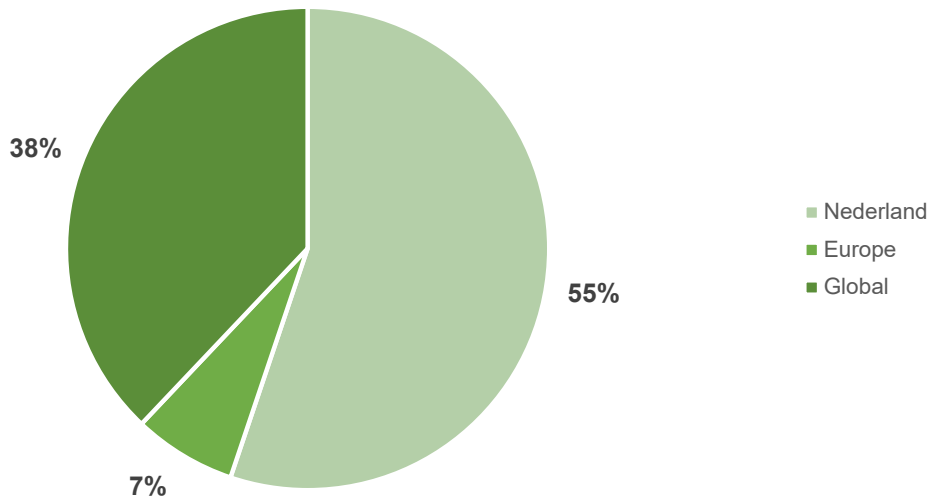


Figure 17 - Overview of the geographical spread of the surveyed organisations (N=58)

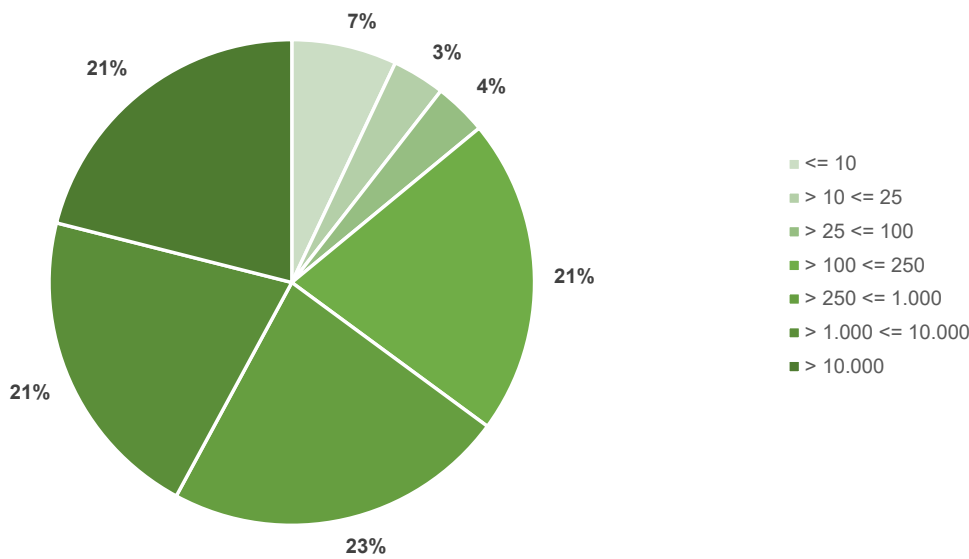


Figure 18 - Overview of the revenue/budget of the surveyed organisations in m euro (N=58)



PROF DR ERIK BEULEN AUTHOR, INTERVIEWER AND WORKSHOP MODERATOR

Erik Beulen (1969) is a professor at the University of Manchester and at Tilburg University, as well as at the business school of University of Manchester – Alliance Manchester Business School. Also, Erik is an external independent consultant at Bain & Company and an independent member of the data committee of Royal FloraHolland.

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Erik thanks knowledge partners Acer, Google Chrome OS, Google Cloud and Xebia, and Rob Beijleveld (ICT Media) for initiating this project. Erik is also grateful for valuable contribution of the presenters in the round tables: Regina Romeijn, global head of ESG at Media. Monks, Global Sustainability Director, Trouw Nutrition/Nutreco, Michiel Jas, Global Director of Sustainability at GKN Aerospace and Ton van Gaalen, Manager of Marketing, Sales & Reporting Technology at Robeco. Erik also would like to thank Marla Dans for her independent review. The feedback made this report better than it would otherwise have been. Furthermore, the guidance and support of Natalie van Grinsven, Stan van der Elst and Gerbrig Reitsma from ICT Media was pivotal for completing this project.

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