GUIDELINE TO IMPLEMENT AN INTEGRATED RISK APPROACH

KEY FINDING FOR SMALL AND MEDIUM FUND MANAGERS
DRS 2021

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ABOUT DRS

Hopman Data & Risk Solutions is a consultancy firm supporting financial companies on the topics of Risk and Data. Our objective is to bring together academics, companies, and students on relevant topics and assignments. For more information please refer to www.hopmandatarisk.nl

SUMMARY

In today's increasingly complex and evolving regulatory environment, fund managers expect to have a sophisticated risk management approach that meets internal and regulatory standards. However, not large-scale fund organizations, but for medium and small fund managers, it is challenging. To resolve this limitation, DRS will provide a guideline to medium and small fund managers indicating methods to implement integrated risk management. This paper includes AFM/DNB, ICAAP, Liquidity risk, Risk appetite statement, Recovery/ wind-down plan, Stress testing/ scenario development, and ESG. We end with a paper with a plan of approach to achieve a practice standard.

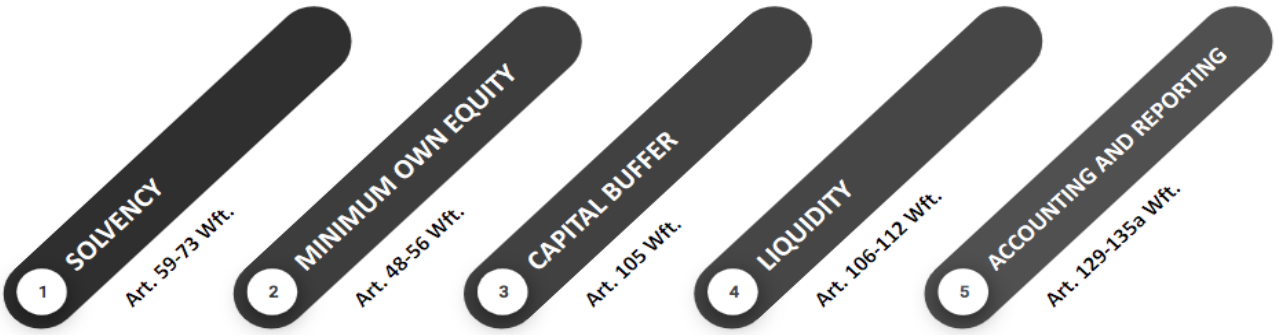
REQUIREMENTS

AFM/DNB

The supervising of all companies on the financial markets, which includes fund managers, is arranged by the AFM and DNB. The AFM supervises the behavioral risks of all the fund managers in the financial market. They check all the fund managers in compliance with the regulations and laws like "Wet op het financieel toezicht" (Wft). Their main goal is to ensure safety and that the fund managers provide the right information and advice to their clients. The DNB supervises the prudential risks of the fund managers. They are responsible to keep an eye on the financial position of the fund managers. The DNB controls the financial obligations of the fund managers. Another task is to look at the financial health of the fund managers regarding Basel guidance. Their main goal is that the fund managers are financially stable and not harm their clients. Overall they look at the financial market from a legislative perspective to arrange compliance with the regulations.

The AFM and DNB are essential in giving an overview of the boundaries from a legislative perspective. So the AFM and DNB should have a clear view of regulation to keep stability in the financial market. They have a supporting role in maintaining the regulation and that the fund managers can run their business between the legislative boundaries. Fund managers will better recognize how to run their business. It will result in a better overview of the regulatory standards in a complex and changing environment.

For fund managers, an increasing burden is a changing regulation because compliance and supervision are costly. Prudential supervision influences fund managers because it impacts the continued existence of their business. For fund managers, there are prudential requirements to meet to unfold their activities with a license. Some legislative requirements arranged in the law of "Wet financieel toezicht" (Wft) are:



Source: Wft

FIGURE 1: Wft legislation

For more information on the Wft, we refer you to Wet op het financieel toezicht or Besluit prudentiële regels Wft.

Next to the Wft, there is an Alternative Investment Fund Managers Directive (AIFMD). The AIFMD is the European guidance with legislative requirements to meet for the fund managers.

Disclosure: This overview does not provide all the requirements for fund managers. There are more requirements for fund managers to take into account.

Source: AIFMD

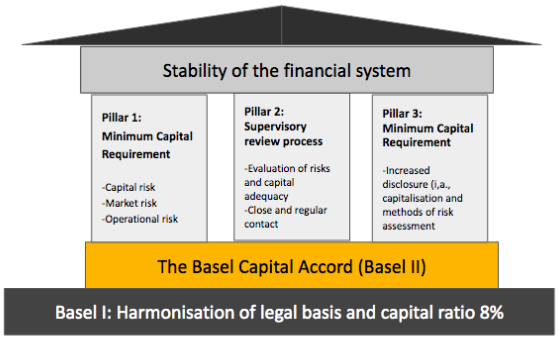
FIGURE 2: AIFM legislation

For more information on the AIFMD, we refer you to the AIFMD. So this gives an overview of the most relevant legislative requirements to meet for the fund managers. It impacts the fund managers because there is pressure from the supervisors to meet the legislative requirements.

We would recommend fund managers implement the regulatory standards in the risk management framework of the organization. A supportive tool could be a compliance regulatory risk assessment, which helps identify, assess and mitigate the regulatory risk. This tool could help to arrange the regulatory standards in the fund. It will form a basis for an acceptable structure to meet the legislative requirements for the fund managers. It is essential to establish a well-defined structure (policies & procedures) that meets the regulatory standards, which are required by the supervisor. So it is recommended for the fund managers to structure the whole organization before starting their business.

ICAAP

ICAAP stands for Internal Capital Adequacy Assessment Process and is a comprehensive assessment of all the risks to which an asset manager may be or is exposed. According to DNB, it is advised to fund managers to periodically assess their risks to which they are exposed. They also need to analyze the degree to which these risks are mitigated and the minimum amount of capital that is
required to be able to hedge a possible residual risk.



Source: DNB

FIGURE 3: Basel framework

To guide banks and investment firms, the DNB has created a three-pillar framework that shows what the capital requirements are.
As we can see **Pillar 1** consists of:

- Credit risk is the risk of default on a debt/loan that can arise because a borrower fails to pay the required payments (on time).

- Market risk is about the possibility that an investor experiences losses due to factors that affect the performance of a financial market. There are a couple of examples of market risk. Pricing risk is the risk of a loss due to price developments. Foreign currency risk, which is about the risk of losses that originate from currency positions. This risk can be mitigated by using financial derivatives. Finally, there is interest rate risk, where losses arise as a result of fluctuations in the interest rates.

- Operational risk occurs when there are mistakes in the operations. This risk can be split into three categories: Inadequate human actions, processes, and IT systems. An example of inadequate processes is a mistake in the process of managing a wealth portfolio of a client, which can have bad consequences.

After analyzing these three types of risks, the CET1 ratio or the Common Equity Tier 1 can be calculated.

Pillar 2 is allocated for other types of risks that need additional capital taking all the exposures of your company into account. A couple of these risks are:

- Interest rate risk is also known as, interest rate risk in the banking book, is about the risk of losses that occur because of movements in the profit and loss account. The difference with the interest rate risk from pillar 1 is, that pillar 1 focuses on the risk in the trading book.
- Business risk is about factors that will lower the profits of an institution or even lead it to fail. An example of this is when the clients of a fund manager decide to end the relationship with them and withdraw their assets.
- Reputational risk applies when there is a risk of losses that can be caused by the negative perception that clients get towards a fund manager. This perception can be influenced by negative information about the fund manager/ institution in the media. The management must take a self-evident step to improve or remove this image.

Finally, **Pillar 3** is related to transparency and market discipline.

The DNB advises a fund manager to make their assessment of all the risks that are relevant to them and report this in their ICAAP. The DNB takes the complexity and scale of an institution into account and expects that larger and complex institutions have a relatively more comprehensive ICAAP assessment than smaller ones. We would recommend fund managers to implement ICAAP, it has many benefits. It is a massive step forward in stress testing capability and so also strengthened capital discipline. ICAAP comes with a dynamic view linking strategy, risk appetite and capital. Among other things, it is a stimulus for developing an integrated view of group risk profile, capital adequacy and risk mitigation. In order to get the full effect of ICAAP, there needs to be cooperative efforts when evaluating risk events and parameters. These efforts should occur regularly and the results need to be discussed before making any further decisions about future investments.

LIQUIDITY RISK

FIGURE 4: Liquidity risk framework

With the term liquidity, we understand how easily an asset or security can be bought or sold in a market, how easily we can convert it into cash. There are two types of liquidity risk: Market liquidity risk and funding liquidity risk.

- Market liquidity risk is about the illiquidity of an asset. In other words, the market's ability to facilitate the rapid sale of an asset without having to significantly lower the price.

- Funding Liquidity risk answers if an institution can meet its obligations when they are due.

In the financial markets stocks, bonds and other assets are being traded. If the market liquidity is poor or illiquid, that means it is difficult to buy or sell these assets. This could cause serious problems in the financial market. According to the paper of Tian (2009), this could lead to an increase in market risk. The reason for this is that of the tendency of market liquidity to compound market risk, so market liquidity is an integral part of market risk. Therefore, investors should analyze the liquidity of the financial market, because a liquid market generally tells us that there is less risk. On the one hand, this means that a buyer does not need to pay a huge amount to get the asset and on the other hand, a seller will fund a buyer quickly by cutting the price. Another benefit of a liquid financial market is that there will be more options to buy and sell in a given market. This can lead to a tightening of the bid-offer spread between the lowest price any seller is happy to accept and the highest price any buyer is prepared to pay.

ESMA (2020) published on its website guidelines on liquidity testing. According to this document, Liquidity Stress Testing (LST) should be integrated and embedded into a fund's risk management framework with appropriate governance and of course, reporting. They also expect that LST needs to be carried out at least once a year, but ESMA recommends doing it quarterly unless a different frequency is justified. LST outcomes need of course to be useful for many reasons. A good example is that it helps to identify potential liquidity weaknesses of an investment strategy and assist in investment decision-making (V.1.6 28.c). In short, this document is useful and will help fund managers to implement an LST. See the reference list for the link to the full document Liquidity risk is important for fund managers because in open-ended funds it is about the risk that a fund does not have enough liquid assets that can't be quickly converted to cash or cash itself to meet its liabilities when they are due. An example of such a risk is investor redemption.

We would like to recommend fund managers periodically assess their liquidity. A fund manager

should carry out regular liquidity profiling on portfolios and define clear limits where escalation may be required. They should also perform stress tests, the results should be frequently analyzed. Fund managers should also analyze their clients and the risks they carry. They even advise managers to use reverse stress testing, this is the worst-case scenario, for example, moves in base rates, indices, credit ratings, etc. This will help fund managers to better understand vulnerabilities. All of these could have an effect on the fund's liquidity profile. An important condition is that all these steps need to be based on robust modelling, appropriate data and effective methodologies.

RISK APPETITE STATEMENT

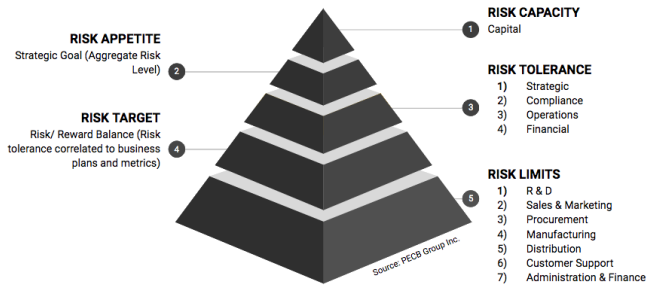


FIGURE 5: Risk appetite statement

Risk appetite is how much risk a firm is prepared to take. Having a well-formed understanding of risk appetite, means being able to directly answer the question: "How much risk do we want to take with our firm and how much risk can we tolerate?" Having a well-developed risk appetite will positively impact your financial performance. To give a better overview of how much risk your firm is prepared to take, the firm can present a Risk Appetite Statement ("RAS"). The RAS document should give the firm and the firm's stakeholders a clear overview of the risks in the market and your risk appetite regarding the same market. It gives an overview of the firm's quality of corporate-level decision-making and it should also help to set a risk-awareness culture within the firm. It should clear up what the risk parameters are. These should be adopted by the management and the board of directors. The RAS should be updated frequently and be written by the risk manager, overlooked by the Chief Financial Officer (CFO), and finally approved by the board of directors.

Risk appetite is an important concept for many firms. Having a good understanding of your risk appetite could make the difference between a good or bad performance. It has been shown in many papers and other articles that effective risk management does increase business performance, mainly in the indicators of return on assets and return on investment. (Abdellahi et al., 2017) This goes as well for single investors. Investors with a better understanding of their risk appetite are likely to be more pleased with their returns on their investments, as they recognize earlier when to buy or sell an asset they are targeting, indicating better performance.

Fund managers are exposed to many risks and are often way more vulnerable to these risks than the larger established firms. Thus, the importance of risk management for fund management is great, yet most of the fund managers do not have a developed risk management framework due to their limited resources. Having a good understanding of risk appetite regarding your fund already sets a basis for a more risk-awareness developed business culture

A regular approach to setting risk appetite is to write a RAS document. The risk appetite statement should cover the firm's approach to all the relevant risk types and how they should be mitigated. This helps for developing a company risk profile which is a good model to overview the

risk within the firm. The risk profile of the firm should give an overview of the following: Risk-bearing capacity, which is the maximum risk the firm will tolerate. The general risk appetite, stating what risk you can take. Risk limits, which can be translated to what the maximal risk is you want to take. An alternative approach tailored for small funds may be to look for the risk appetite per client instead of generalizing it for the fund as a whole.

RECOVERY & WIND-DOWN PLAN

A recovery plan is a beforehand made plan that will be needed when the fund is in severe stress, marked by the breaching of at least one of the Recovery triggers defined in the fund's risk appetite. With the help of the slippery slope model (see figure 6), a fund is quickly able to overview its risk indicators and which indicator needs extra attention, for example, the metrics of CET 1 ratio or the Redemption Coverage ratio.

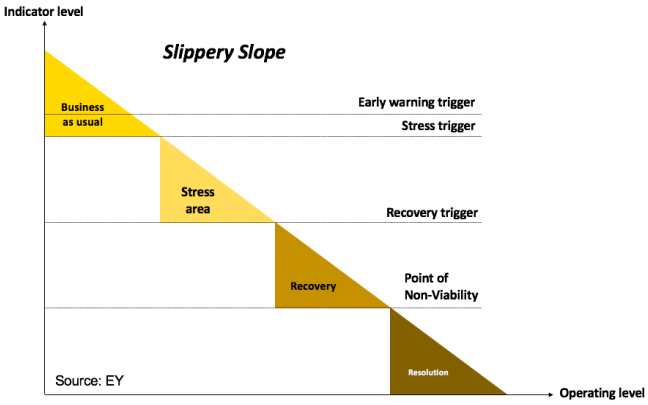


FIGURE 6: Slippery slope

The third zone is the recovery zone, this is where the recovery plan comes into place. When a risk indicator breaches the Recovery trigger, the fund should execute the recovery plan. This plan activates the Crisis Management Team (CMT) and consists of the options needed to continue business and getting the risk indicator out of the recovery zone, such as defining the fund's critical operations, what stress scenarios could occur, what recovery tools there are, the risk indicators and structural weaknesses of the fund.

The wind-down plan on the other hand is where the business breached the point of non-viability, it cannot recover anymore. Wind down planning is needed to comply with the law and give stakeholders what they are entitled to.

To avoid needing to wind down your business, a recovery plan with a variety of recovery options should be in place. This applies to every type of business. It assures you want to stay competitive in the financial markets and are aware of the consequences when your business becomes in a stress or recovery environment. Reaching a point of non-viability, it is also important for the businesses to have a plan on winding down their business. Without good planning regarding non-viability, correctly winding down becomes complex with extra costs and unforeseen events being very likely.

Having a recovery and wind-down plan in place prevents managers from taking too much risk and managers will know at which "level" they are in their risk appetite. Dashboard with overviews of your risk indicators, will make managers more risk-aware and thus aware of the prevention of going into recovery or even needing to activate the wind-down plan.

For a fund, it is recommended to have continuous control over the risk the fund is bearing, by using a structured dashboard containing indications on the fund's risk factors. The Slippery slope model could be of use in such dashboards and form the substantiation for triggering the CMT and activating the recovery plan. The CMT can specialize in the task of bringing the fund back to "business as usual". For the recovery, scenario-thinking is needed to optimize the activation of the management actions to deal with stressful scenarios. The wind-down plan should comply with regulatory law regarding the "Wft" from the AFM, Basel III, etc. although it might be time-consuming and costly, complying with the laws is mandatory to keep the business viable.

FIGURE 7: wind-down plan

STRESS TESTING & SCENARIO-ANALYSIS

Stress testing and scenario-analysis are useful tools in the financial sector. With stress testing, you simulate the financial position of the fund in the case of severe stress. It will prepare you for stress cases such as the COVID-19 crisis or the Great Financial Crisis in 2008. Defining narratives for different scenarios helps fund managers to assess the resilience of their business for a sudden shock. It will help fund managers to evaluate the vulnerabilities of their funds. The objective of scenario-analysis and stress testing is to prepare and give you a toolbox to deal with different kinds of crises.

Stress testing can be seen as a necessary tool for fund managers, as it is for the banking industry. The correct use of stress testing could make a difference in the performance of fund managers. Strengthening the vulnerabilities will establish more certainty in the resilience of the fund. Stress testing will make you recognize and react to risky scenarios, which will mitigate the risk and improve the performance of your fund in the long term.

Small and medium fund managers are exposed to many risks and are often more vulnerable to certain risks than larger fund managers. There is are standard stress tests executed by the DNB to evaluate the financial position. Stress testing can be seen as intensive and costly for fund managers, though it is essential and add value Stress testing has been considered a valuable tool in the risk management framework. It could result in a request for more capital or more liquid assets. The fund managers are required to take action regarding their capital/liquidity position to prepare for this scenario. The impact of this stress test results in strengthening the capital position of the fund managers before a stress scenario like this happens.

We would recommend fund managers implement a regular stress testing tool in the risk management framework. For fund managers, it is mandatory to perform the stress test of the DNB. The stress test of the DNB is standard. So it is recommended to carry out additionally an intern

stress test on a regular (e.g. annual) basis. The reason for this is to become more aware of your financial position among liquidity, capital, and fund managers' specific factors. For the full effect of stress testing, there needs to be a narrative of different scenarios that could harm the fund managers. It will show what is required to mitigate or cover the losses of funds. Stress testing could help to develop a risk profile of the organization for fund managers. It gives an overview of the risk within the firm and insight and substantiation of the risk appetite in a severe scenario. Implementing a stress test in the risk management framework is recommended because it makes the fund managers more resilient for insights in risks.

ESG

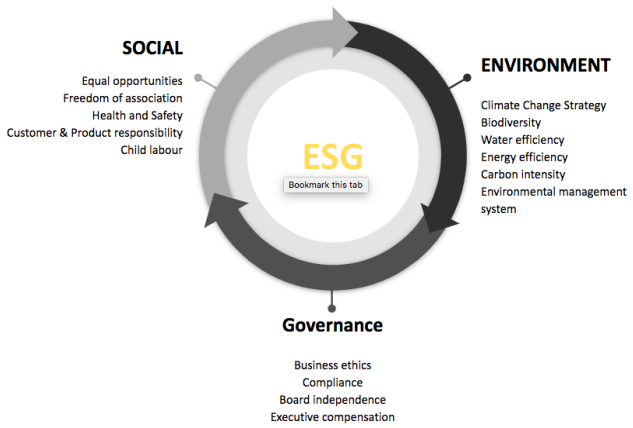


FIGURE 8: ESG framework

In recent days the process of making investment decisions have been considered 'Social Responsibility Investment (SRI)' or 'Sustainable Investment'. SRI is a method of investing in corporations that reflect social and ethical values. Unlike the traditional method of a firm's financial performance only, it fully reflects non-financial factors such as ESG (environment, society, and governance) that affect its value and sustainability in a long-term perspective. Investment based on ESG performance brings long-term returns to investors while influencing corporate behavior to benefit society.

As the social responsibility of companies and investors for sustainable development becomes more important, many financial institutions around the world are using ESG evaluation information. Starting with the U.K. in the year 2000, many countries including Sweden, Germany, Canada, Belgium, and France introduced mandatory ESG information disclosure based on pension funds. The UN is encouraging SRI through UNPRI, which was launched in 2006. TCFD is a task force established in 2015 by Michael Bloomberg to transparently disclose the interaction between business activities and climate change. The cost of environmental degradation is increasingly reflected as a real burden on businesses due to regulations or taxes.

Robert Armstrong, the Financial Times editor insists "accepting the possibility of lower returns in return for the promise of positive social outcomes, such as a healthier environment or less poverty, can make a positive impact by putting resources to work where an "efficient" market would not".

The recent spread of ESG investment has been attributed to the participation of large investors and pensions. For example, BlackRock, the world's largest asset management company said in an annual letter, that it will use "environmental sustainability" as a key strategy for future

company operations and withdraw from investing in high-risk companies related to environmental sustainability.

Thus, we recommend a specific ESG sustainability investment style to fund managers to handle ESG.

1. Screened exclusion or norms
2. ESG rebalancing
3. Thematic Focus
4. Impact investment

The specific objective and key considerations are indicated in figure 9.

	Screened exclusion or norms	ESG rebalancing	Thematic Focus	Impact
Objective	Remove specific companies w/ objectionable activities	Invest based on ESG scores and rating systems	Invest with focus on particular E,S, or G issues	Target specific non-financial outcomes along with financial returns
Key considerations	Definition/ financial impact on screens	ESG data sources, desired risk taken	Board vs. specific exposure	Report on progress of impact outcomes
Examples	Screening out producers of weapon, fossil fuels, etc., or screening in those who comply with agreed international norms	Optimise ESG benchmarks, active strategies, etc.	Environmental focus on low-emmisions	Specific green bond mandates

Source: staff explanations adapted from BlackRock investment institute and BlackRock sustainability investing, Mckinsey and CFA institute.

FIGURE 9: ESG recommendations

The fund managers' choice of strategy can determine whether it seems that only exclusion provides clear guidance to the end-investor as to the impact. Therefore, it may provide certainty to investors by indicating how their money is invested in certain resources and better managing risks. Therefore, risk management for ESG factors is essential for fund managers in today's financial market.

Recently the European Banking Authority disclosed a discussion paper regarding the ESG risks for Credit Institutions and Investment funds[1] and the whitepaper of DRS regarding this discussion paper[2]

GAP ANALYSIS

An overall recommendation is to perform a Gap-analysis for your company or fund. A Gap-analysis is an assessment of the current performance to identify the differences between the current state and the practice standard (ambition). A Gap-analysis could improve your business to be more efficient by identifying the "gaps" on the different topics. It will lead to a better focus on the parts that fall short. The Gap-analysis is to help the fund to find and close the "gaps" in the organization. There are global steps to conduct a Gap-analysis:

- Determine the current state
- Determine the best practice
- Analyze the gap between the current and the best practice
- Develop improvements to close the "gaps" in the fund.

The gap-analysis is supportive to your integrated risk framework. If you consider to carry out a gap-analysis, you can contact us for consultation or support about performing a gap-analysis.

INTEGRATED RISK MANAGEMENT

The following steps of this cycle will help to implement the integrated risk management framework for an Investment manager.

[1] Please refer to the EBA discussion paper October 30th 2020 (link)

[2] Please refer to ESG discussion paper_WP DRS 2021 (link)

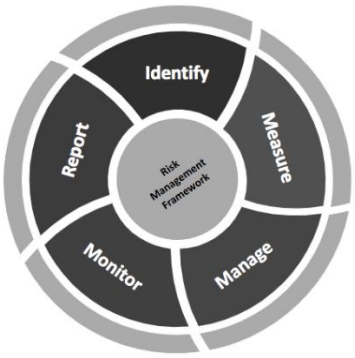


FIGURE 10: Risk management framework

Identify

Managing your risks begins by identifying all the risks your fund is exposed to. For fund managers, the biggest risks will likely exist of regulatory risk, capital adequacy, and liquidity risk, to name a few. So to be aware of the risks, the fund manager should have identified the total risk exposure, which could impact their fund.

Measure

The impact of the risk depends on the damage it can cause to the fund managers. So for a fund manager, it is important to measure which risks should have the biggest impact on the fund. When measuring the risk, you should take into account the impact and importance to deal with the risk in the fund of the fund manager. After the measuring, fund managers should assess which risk has the biggest impact on their business and tackle the biggest risk first, all the way down to the smaller risks.

Manage

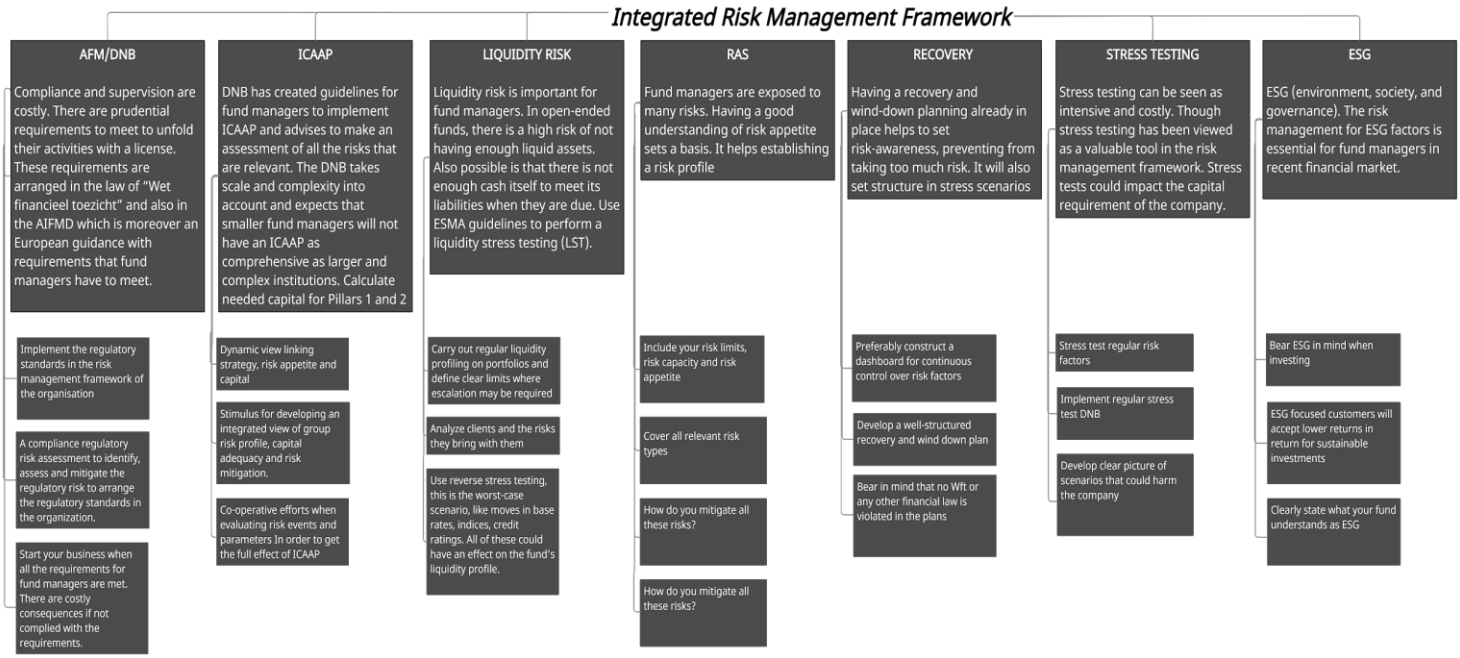
To manage your risks, fund managers can use several tools, such as a well-developed RAS, ICAAP and recovery, wind-down plan, and compliance regulatory risk assessment. It is the task to control or mitigate the risk exposure. Assess if your risks are on an acceptable level with regard to these tools. The stress test can be used to manage risks and change factors when needed. It will be supportive for fund managers to manage the risk exposure.

Monitor

The next step is to regularly monitor your risks. Make sure you keep track of your risks with corresponding risk measures. Set up control points and early warning triggers to be timely notified when a certain risk factor reaches an unwanted level. Finally, assess and visualize if all risks are on acceptable levels in comparison with your risk appetite and regulatory requirements on the slippery slope model (figure 6 Slippery Slope).

Report

After carefully monitoring the situation, make a report for the management team. This report should help to understand the current situation. It will help to determine whether this is a good situation. A gap-analysis could support if the current situation is good or if a change is needed. In case a change is necessary, reevaluate the situation until the desired position has been achieved.



You can see the risk management framework we created above. This framework consists of the seven requirements explained beforehand. We understand that this framework requires a lot of investment in money and human capital. It is understandable that not every fund manager will have the resources to make these investments. However, we believe that fund managers will earn these investments back in the medium or long term. For example, a fund with a well-constructed risk appetite statement will have more knowledge over the risks it can take, thus can optimize its risk-return profile. Furthermore, in stress scenarios, this fund will likely minimize possible losses and will act structured to bring its fund back to business as usual. We also advise larger fund managers/institutions - if possible - to create a department or a separate function that supports, governs, and controls the fund managers on the risk topics. The reason for this is that this framework will only be effective if it's used everywhere by everyone.

Support

As a consultancy company, DRS can support you to improve your integrated risk management framework ensuring to comply with the regulations and the broader context of risk management with the following services:

1. Designing and performing the gap analysis of existing risk management framework taking the different topics into account (AFM/DNB, ICAAP, Liquidity risk, Risk appetite statement, Recovery/ wind-down plan, Stress testing/ scenario development, and ESG) and assess these against the best practice standard;
2. Defining, drafting, and implementing the improvement for an integrated risk framework covering the described risk topics;
3. Performing data quality assessment and remediation on existing data sets while offering more suitable data sources plus the data management services if needed;
4. Set up a plan of approach.

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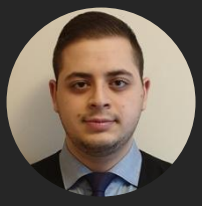

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