

Improving Oil Spill Response capability during times of downsizing and budget cuts
A glance at the Norwegian way

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ABSTRACT

How can we continuously develop and improve large scale emergency preparedness, such as oil spill response, in times of low oil prices, budget cuts and downsizing?

NOFO (Norwegian Clean Seas Association For Operating Companies) has found its path, through modernization and cooperation.

When there are spills of crude oil from the petroleum industry at the Norwegian Continental Shelf (NCS) NOFO will perform the oil spill response (OSR) on behalf of the owner of the spill, in practical terms becoming the company's OSR branch during the incident.

NOFO was founded in 1978, as a response to the large blowout at the Bravo field the previous year. Focus on offshore OSR technology and combat strategies has been the main motivation during our almost 40 year's existence. The last decade has included a significant improvement in our competence and training on near-shore and beach OSR, simultaneously maintaining the unique offshore segment.

As part of improving NOFO capacity within large scale, and / or long duration spill situations (e.g. Macondo), NOFO have embraced and implemented ICS (Incident Command System), thus improving our capabilities and capacities through the whole range from offshore to shoreline OSR. Through 2015 and 2016 ICS training and ICS adaptations of previous organizational systems has been prioritized, and new ones have been developed. NOFO personnel have participated in numerous

training sessions and exercises with our member companies (operators on the Norwegian continental shelf) nationally and internationally.

Through strategic choices of planning and collaboration both internally in NOFO and between NOFO and the Norwegian Coastal Administration (NCA), Global Response Network (GRN), other oil spill Response Organizations (OSROs) and cooperating partners, the number of exercises has increased, the value and output of exercises is improved, and thus the capacity and capability of NOFOs whole range OSR in improved.

At the same time, on behalf of our members, NOFO have consumed less money year after year. NOFO is developing and improving our proven OSR capacity and competence, from offshore to shoreline, through increased efficiency, high focus on exercise training, and cooperation with other OSR agencies.

INTRODUCTION

The national oil spill contingency coordination in Norway, is executed through The Norwegian Model. Decisive for a small country like Norway, successful OSR is dependent on the industry, government and municipalities actually working together using all resources available in a common pool (Figure 1). Through agreements, the industry will have access to these resources, both public and private giving the benefit of using existing resources through a Tier comparable system.

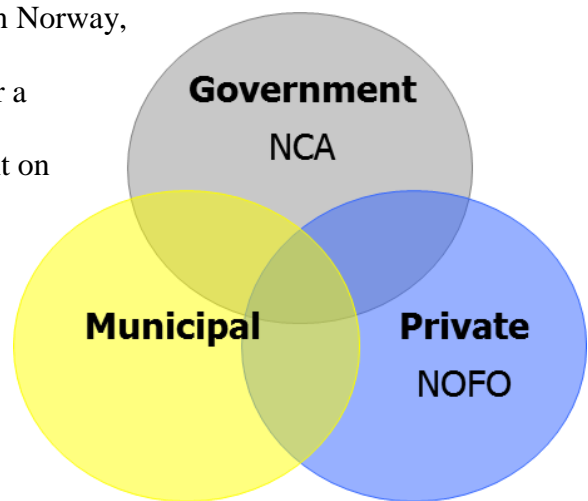


Figure 1 The Norwegian model; a joint force of private and public OSR resources.

Norwegian Clean Seas Association for Operating Companies (NOFO) is the common oil spill response tool used by NOFOs members, 27 operating companies on Norwegian Continental Shelf (NCS), to handle oil spill response. Every company with production or exploration drilling on NCS is a member of NOFO. This is partly due to have an efficient and cost-effective oil spill response and partly due to legislation which encourages cooperation on oil spill response.

NOFO is to ensure an effective oil spill response through co-operations with the authorities, municipalities and private contractors, and through international cooperation. This is to be achieved through direct cooperation with NOFO's member companies, public sector (i.e. authorities and municipalities), private contractors and an increased focus on international exposure and participation. By training fishermen with their boats and volunteer personnel along the coastline in OSR, the Community becomes an active part of the overall concept.

THE ADAPTATION OF NOFO THROUGH STRATEGIC PLANNING

Establishment of long term, mutually agreed strategies is vital in advocating a modern and efficient development of any organization. The grounds for this is thoroughly presented in the paper “Development and implementation of a common strategy for operating companies and OSROs” by my colleague, Senior Advisor Kåre L. Jørgensen [Jørgensen 2017]. This equally applies for NOFO, Norway’s largest OSRO.

With a clear object of improving NOFO and improving our international relevance, NOFO Board of directors ratified Strategic Plan for the period 2016 – 2020 in October 2016 (Figure 2).

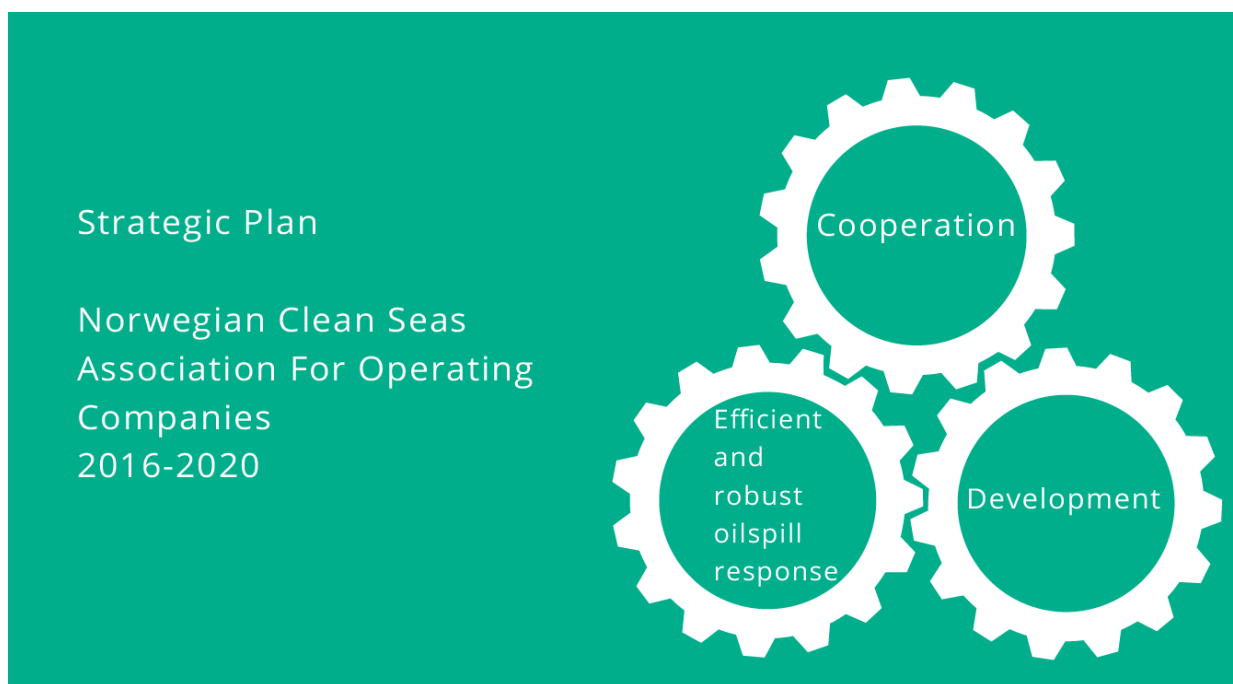


Figure 2 Strategic plan, and schematics of coordinated integration within NOFO as an OSRO.

The main target of the strategic plan is for NOFO to ensure that our oil spill response at any given time is dimensioned according to the needs of our members (the operators at the NCS) and their respective plans for contingency and Emergency Preparedness.

This is to be met through 5 main focus areas, being:

1) Risk based approach:

- Our oil spill response is to be based on risk assessments, not worst thinkable scenario.
- The preparedness is to be adaptable to activity level and area specific needs.

2) Robust solutions:

- NOFO is to use Incident Command System (ICS) during incidents
- Our preparedness is to be dimensioned for 60 days of operation (equiv. of drilling relief well)
- NOFO shall prepare plans for incidents with duration beyond 60 days

3) Cost efficiency:

- NOFO is to ensure coordination of the overall overview of member requirements for OSR
- NOFO is to prepare comprehensive plan for training and exercise on behalf of our members, ensuring cost efficiency in their execution.
- NOFO is to streamline our routines for procurement, operations and maintenance of equipment

4) Effective OSR methods and capacity

- NOFO is to have the total overview of the OSR needs of our members, seeking a sound balance between, and adequate capacity within, the various OSR measures and methods.

5) Competent organization

- The whole emergency preparedness organization shall be trained, with competence to meet the OSR demands on behalf of the oil operators on the NCS.

ROBUST SOLUTIONS

Experiencing from large scale and long duration incidents the industry has learned that no single organization is ever satisfactory equipped and manned to handle all scales of challenges. There is an evident need for joining up forces with other organizations, being nearby competitors, or overseas foreign culture international resources.

EMBRACING ICS IN OUR ORGANIZATION IMPROVING ENDURANCE PAST 60 DAYS

NOFO has encompassed this, by recognizing our members' international resources (Global incident management teams) and their international standard of collaboration through ICS. Observing the resources and capacity of international cooperation, NOFO has also absorbed the fact that regardless of our plans and ideas; during large scale incidents it is highly likely that the owner of the spill will bring external resources to the arena. This being small or big, it seems imperative that NOFO as an OSR organization is made ready to assimilate such external resources into our own mode of operations. This leads to choosing the ICS as a common denominator, ensuring our mutual capability to handle the whole range of incidents from small to large, from offshore to shoreline OSR.

The adaption of our own organization to ICS structure has been accomplished by continuous training of all on-duty personnel through 2015 and 2016. The training has been both in-house and externally among our members, GRN, other OSROs and cooperating partners within and outside of Norway. Our organizational systems (logs, orders, Common Operating Picture, documentation etc.) have in the same period been adjusted and upgraded to encompass ICS ways [Fiksdal 2017]. Furthermore, this activity entails that our main supervisory authority, the NCA, have learned how and why the ICS system was chosen, reassuring them that our altered way still satisfies their requirements.

The successful implementation of ICS in NOFO improves our capability to embrace international assistance (from Oil companies and OSROs), and has been essential in meeting the target in our strategic plan, of enhancing our ability to endure OSR operations 60 days and more.

COST EFFICIENCY _ HOW DID WE REDUCE COSTS?

Norwegian legislation and permissions govern the type and dimension of oil spill response for any given drilling and production operation on the NCS. Type and level of specific OSR capacity is highly influenced by the relative access to existing OSR in the area. Hence, a new drilling operation within a “mature” field with established OSR measures imposes less additional OSR preparedness, compared to a wildcat drilling distant from established areas.

Through national legislation, the Norwegian Environment Agency imposes the frequency and time for verification of the quality and quantity of an operators OSR capability. Precursory to drilling through possible oil-bearing geological layers, imposed oil spill response capacity needs to be in place. Previous to this the capacity and competence of the specific oil spill response vessel(s) with its crew and equipment needs to be verified through exercises.

COORDINATION AND OVERVIEW OF MEMBER OSR REQUIREMENTS

Through long term dialogue with, services to and cooperation with the operators, NOFO has established a common ground for open and competitor-safe communication. Thus, we've been granted the trust and confidence from the oil field operators to access their long- and short term plans for their drilling activities. The operators have realized the benefit of including NOFO in their internal drilling planning sections. This conditions full confidentiality from NOFO in all aspects of communication. Though there is little or no competition between operators on the NCS, any breach

of confidentiality might strongly influence stock- and market value of the company, thus undermining the benefits of our trust. Figure 3 presents graphically the increase in vessels, resources and personnel through the last ten years.

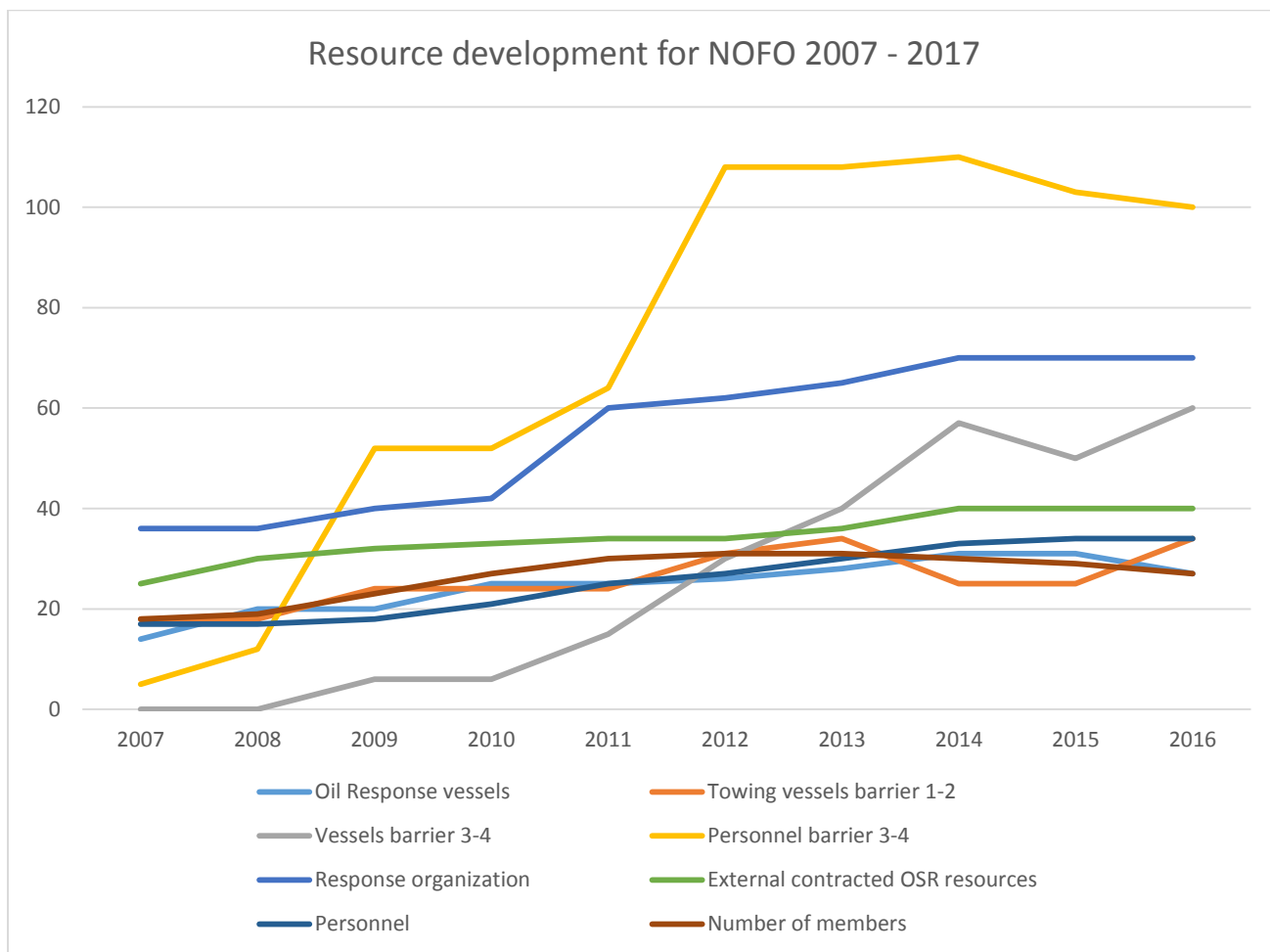


Figure 3 Presentation of the different tasks given to NOFO, and NOFOs resources, through the last ten years. Barrier 1 being closest to the spill source offshore, Barrier 2 being between the leaking point and the coast. Barrier 3 being the coastline and barrier 4 the beach zone [Kristoffersen 2017].

IMPROVED EFFICIENCY OF EXERCISES AND TRAINING

In previous years (pre 2014) NOFO has been very stringent on following planned activities among our member companies. To some extent NOFO acted reactively; engaging in individual exercises and filling training needs consecutively as the needs arose. Increasing number of members, and long term increasing activity lead to a growing need to expand staff and capacity within NOFO, thus increasing the common expenses.

Improved interaction with NOFO members gave us their confidence to develop smarter ways for training and exercising, including establishing a national curriculum for OSR training and utilizing existing national and international (public and private) facilities. As our members, through confidence, gradually transferred the task of planning and implementing exercises to NOFO, NOFO came in a position to increase the value of each training session through collaboration. This has also been presented in the IOOSC paper “The way we train” by my colleague Operations Advisor Ivar Kristoffersen [Kristoffersen 2017].

Collaboration between ship owners, crew and operating companies led to an increase in numbers of vessels (and crew) trained in each individual exercise (Figure 4), thus increasing the common value for OSR.

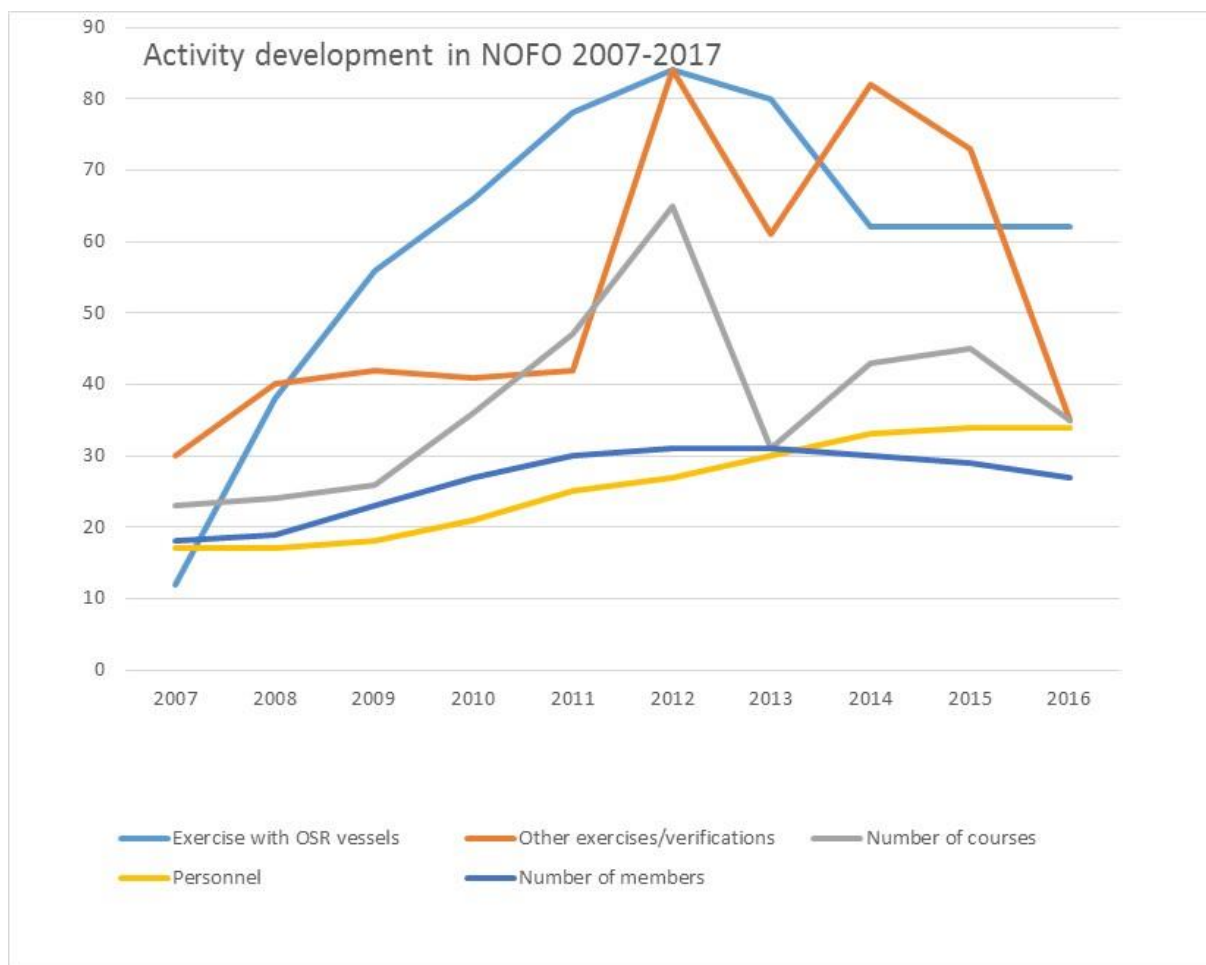


Figure 4 Main tasks of NOFO, with impact on annual budget.

IMPROVED EFFICIENCY OF EQUIPMENT LOGISTICS AND MAINTENANCE

With a large stock of OSR equipment, such as offshore booms, recovery and transfer systems, skimmers, pumps, vessels and such, there is a continuous need of maintenance. As NOFO practices with all our equipment, unavoidably there are considerable need of repairs through the year.

NOFO identified the need for establishing an independent branch for technical control, and established our Technical department in 2014. By further decentralizing the responsibility of planning and performing maintenance from NOFO headquarters to our five bases along our coastline, we have improved the quality, efficiency and frequency of maintenance. By assigning responsibility, and moving the accountability, to each NOFO base with its base manager, the

performing personnel have been empowered to plan and schedule each maintenance service in accordance with their individual schedules and NOFOs planned exercises. Hence, a more planned approach improves efficiency within logistics, spare parts delivery, use of man-hours, and assures timely assistance to executing individual training and exercise. Our Technical manager have the responsibility of the comprehensive multiannual maintenance cycle for the whole stock of equipment. Furthermore, an experience based, custom made computer based tool (SharePoint) for planning and follow up of service, have improved documentation and predictability of workshop needs and performance. By assigning the individual NOFO bases their responsibilities for follow-up of critical factors NOFOs OSR has been improved. Through this the competency within and among the employees at the NOFO bases is further utilized, leading to an increase in employee personal achievement and professionalism.

Beyond satisfying the day to day planning and need for coordinating service and repairs, our strategy and developed tools has led to an improved capability to give early warning of need for replacements and preventive service. This in turn opts for improved purchase and strategic financial decision.

IMPROVED EFFICIENCY IN MANAGEMENT OF CONTRACTS

NOFO have gained quality, control and efficiency through rather simple steps of modernizing the way we handle our contracts and contract partners.

From the historic founding of NOFO in 1979, a steadily increasing number of contracts and agreements have been established and signed. All varying from delivery of standard office equipment to highly specialized oil spill response tools, to field services such as on site oil chemistry competence and oceanographic professions.

Origination from our founding days, NOFO supported a more constrained system where all contracts were the “property” of our finance department. Not in legal terms, merely practical. Through the soon to be 40 years this has led to a number of “sleeping” contracts, and a subpar understanding among employees of whether NOFO had contracts with given partners, and what the content of these possible contracts were.

Though long overdue; NOFO has now integrated a highly user friendly, easy and robust contract handling and follow up as part of our quality assurance system.

Since 2015 we carefully scrutinized every contract and agreement, controlling their validity, their relevance, expenditures and gain for NOFO. Through this work, involving most employees of NOFO, a number of contracts and agreements have been terminated. Remaining relevant contracts, agreements and framework agreements have been revived and modernized reflecting present NOFO tasks, present market rates and response needs. Evading future passivation of these documents, after revitalization all are included in NOFOs quality assurance system as illustrated in Figure 5.

By incorporating developments within software (SharePoint) we have created a homepage solution where contracts and their follow up is assigned to individual employees through their user responsibility. As an example; our environmental advisors within NOFO have been assigned their individual user responsibility, and hence the follow up, of contracts with various science and research institutes, relevant consultant firms and laboratories. Colleagues within logistics section are in turn allocated the user responsibility of contracts with transportation firms, waste management companies et cetera. Through this allocation of responsibility, supplemented with strategic individual alarms in due time, the risk of NOFO having to pay for more than only highly wanted is significantly reduced. Status and oncoming contract follow up is now presented regularly as shown in Figure 5.

We assure follow up through a system of automatically generated personal mails of “heads up”, reminding to check the contract/agreements relevance and requirement seven months

prior to its expiration. There will be multiple recipients of such mails; the individual personal responsible and his/her leader, and case manager within contract department and their leader.

Thus giving us one month to clarify further need of the given contract, for those with six months' deadline. As a number of our contracts are of three months' deadline; in general, we have included a strong robustness in our follow up, both regarding NOFO business needs and of our suppliers / cooperating companies. The improved focus on contracts and their follow up has also led to the termination of even revived contracts, on lack of participation in exercises and training. In turn this leads to an increase in requests on training, from the ones still in the OSR pool.

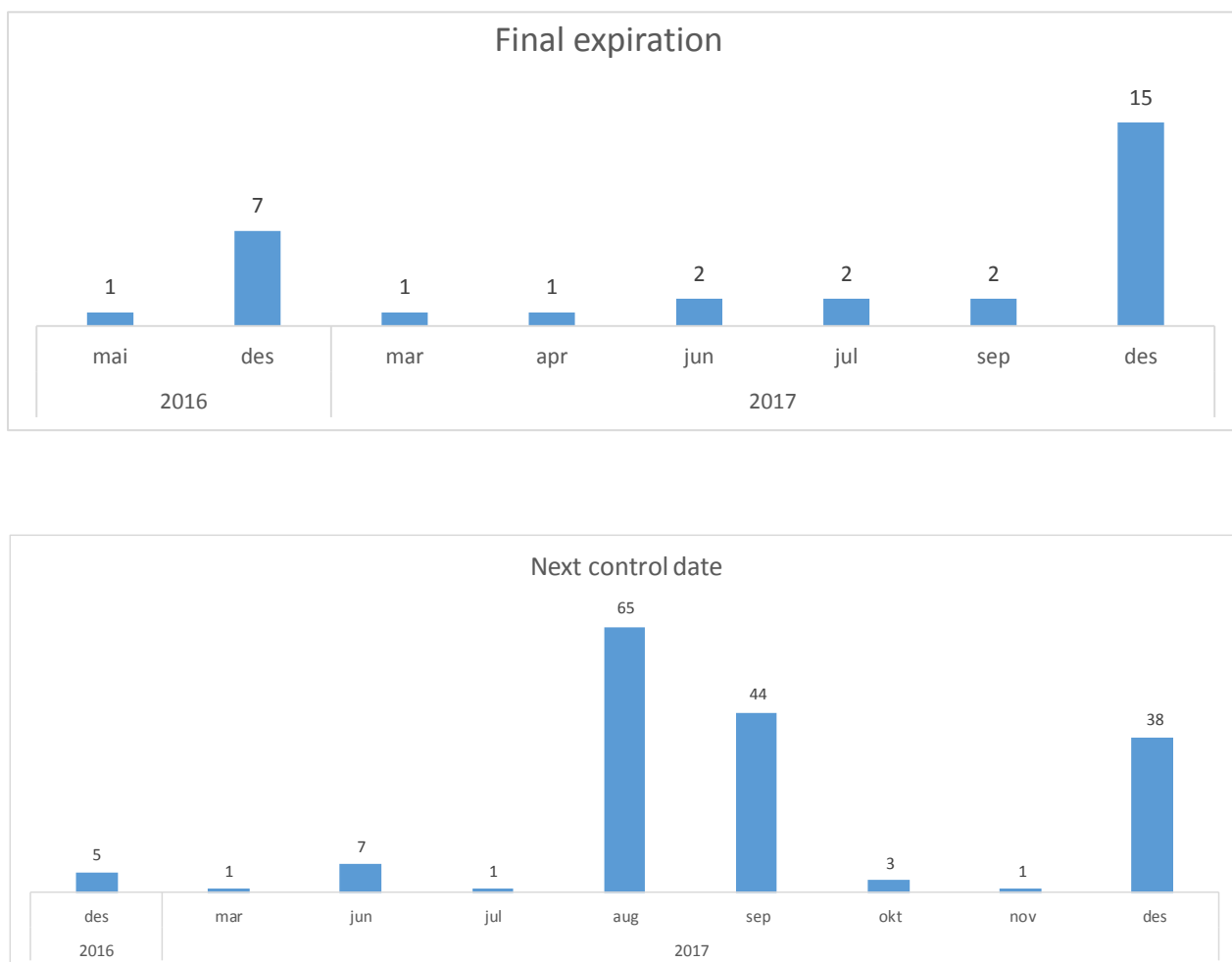


Figure 5 Visual tool for presenting overall picture of future expiration of contracts and next date for control of specific contracts.

Through this scrutinizing of our contracts and agreements, we have also improved our understanding of the high significance and long term sustain of some central deliveries to our OSR. Some of these contracts have thus been extended to a contract duration of ten years. Examples of such are contracts with fishing vessels along our coastline. Fishing vessels with proven capability, with competent, trained and eager crew have received contracts of ten years binding period. This gives NOFO a long term predictability of our response capabilities, and likewise renders the fishing vessel owner and crew with long term training and jobs (part time) and income. For future recruitment of new vessels, NOFO focuses on dialog with ship-owners. This is to ensure that plans of new constructions integrates minor adjustments relevant for OSR, ensuring new vessels entering the market have what's needed for full utilization in OSR along our coastline. By doing this, we move short term expenses for NOFO to finance alterations of existing vessel, to long term expenses improving the OSR. Thus the ship-owners take the short term investment, giving them the long term income through participation in the national OSR.

Historically, in Norway, maintenance of contracts and contract partners have in periods had a shade of “wining and dining”. These days are over; but we have a strong conscience on the sustainability of our contract partners. These are not times of “squeezing” more deliveries for a lower buck. It is in the interest of the general OSR, that all our suppliers maintain a sound and viable economy. Our challenge is to keep steady contract rates, both in good and in more challenging times. Bankruptcy and loss of suppliers (and competition) only limits the future development of a strong OSR industry. Figure 6 presents NOFOs improved balance between budget and expenses, finally flattening or marginally declining after many years of increase through raising oil prizes.

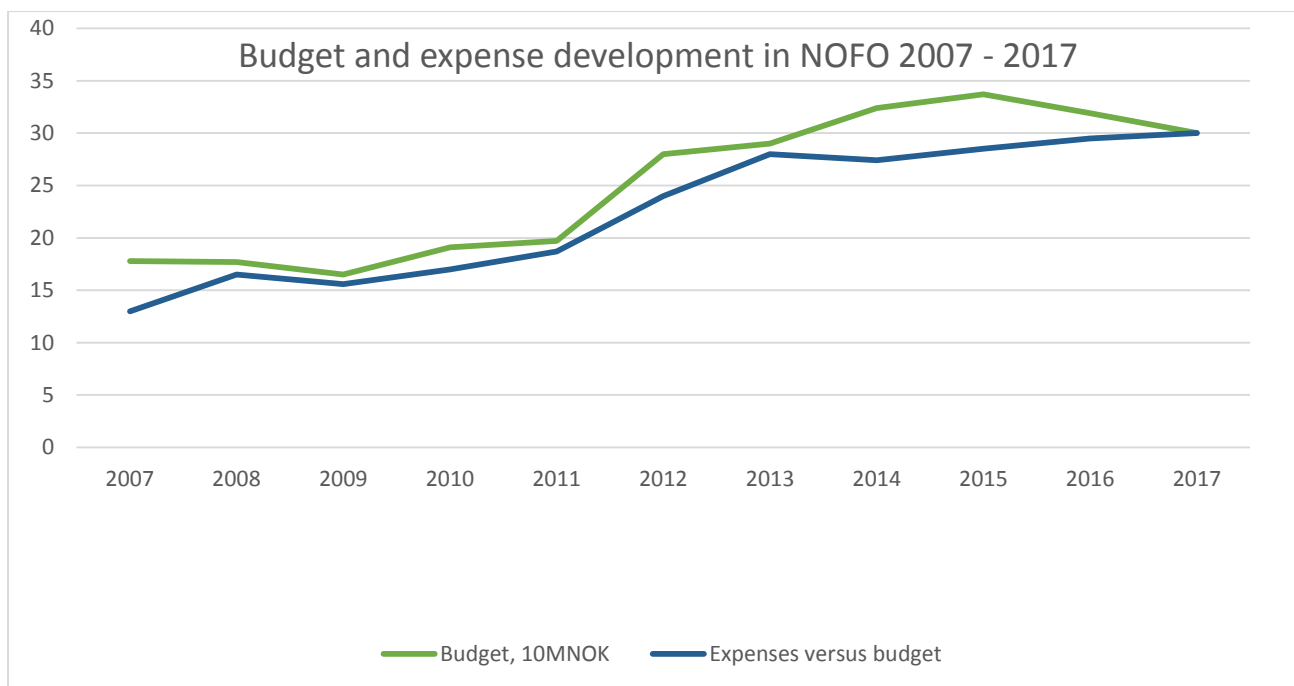


Figure 6 Annual budget (green line) and expenses (blue line) for NOFO the last ten years

COST EFFICIENCY / COMPETENT ORGANIZATION

Revamping our processing of contracts have led to a significant expansion and improvement of OSR activities led from the operations/emergency preparedness room. The revived contracts are being “mirrored”, through SharePoint, to the desktops at our Operations room; giving our staff handling exercises and accidents, direct access to the presence of contracts, with a description of the job description in each. Hence, when environmental advisor logs in he/she will see the presence and descriptions of contracts deemed relevant for that position in an operation, whilst personnel in Logistics sector will see contract-descriptions relevant for their function.

CONCLUSIONS

In times of uncertainty, being of financial situation, manning and tasks, NOFO has chosen the way of modernization. Modernizing our way of utilizing web-based solutions, merged with a distinct message of rationalization through cooperation and increased efficiency of our daily task.

Through active implementation of Strategic plan for the five-year period 2016-2020, focusing on Risk based approach to and Robust solutions within the oil spill response (OSR) NOFO gains value. Adding increased Cost efficiency joined with even more Effective OSR methods and capacity gives NOFO an even more Competent organization for the future, increasing the OSR value for our members.

Change in work routines, and development in assignments and responsibility often challenges the organization and hence the individual employee. Through confidence and involvement NOFO is succeeding in improving the competency of the whole organization. In Norwegian labor and political climate, this requires strong and competent leadership with a high understanding of occupational psychology.

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