

Mozambique - Country Plan of Implementation Orange Knowledge Programme

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List of abbreviations

AfDB	African Development Bank
CNAQ	National Council of Accreditation and Quality Assurance in Higher Education
CPI	Country Plan of Implementation
DNES	National Directorate of Higher Education
EKN	Embassy of the Kingdom of the Netherlands
FNS	Food and Nutrition Security
HE	Higher Education
IWA	International Water Ambition
IWRM	Integrated Water Resources Management
MACS	Multi Annual Country Strategy
MASP	Multi Annual Strategic Plan
MINED	Ministry of Education and Culture
NESO	Netherlands Education Support Office
NFP	Netherlands Fellowship Programmes
NICHE	Netherlands Initiative for Capacity-development in Higher Education
Nuffic	Dutch organisation for internationalisation in education
NWP	Netherlands Water Partnership
OKP	Orange Knowledge Programme
LIC	Low Income Country
RVO	Netherlands Enterprise Agency
SADC	Southern Africa Development Community
SRHR	Sexual and Reproductive Health and Rights
SRoL	Security and the Rule of Law
RUFORUM	Regional Universities Forum for Capacity Building in Agriculture
TVET	Technical and Vocational Education and Training
WASH	Water, Sanitation and Hygiene

I. Introduction

This document describes the purpose and intentions of the implementation of the Orange Knowledge Programme (OKP) in Mozambique. It follows on an identification process in which capacity needs in Mozambique have been analysed in the light of the available information and discussions with stakeholders. This approach has helped to define the priority intervention areas and to formulate the outcomes to be achieved.

The Dutch organisation for internationalisation in education (Nuffic), administers this programme on behalf of the Ministry of Foreign Affairs of the Netherlands. Nuffic is responsible for its implementation and follow-up in accordance with the Mozambique Country Plan of Implementation (CPI).

II. Brief presentation of the Orange Knowledge programme

The Orange Knowledge Programme is the successor to the Netherlands Fellowship Programmes (NFP) and the Netherlands Initiative for Capacity Development in Higher Education (NICHE). The Orange Knowledge Programme merges the two preceding programmes into a single integrated approach, with the addition of new elements including increased involvement of alumni, attention to cooperation between knowledge organisations, and communication focusing on the presentation of results.

The main objective is to contribute to sustainable and inclusive development through the strengthening of organisations key to sectoral development in Orange Knowledge Programme partner countries. This will be achieved by developing the capacity, knowledge and quality of individuals as well as organisations both in the field of Technical and Vocational Education and Training and Higher Education (TVET/HE) and in other fields related to the priority themes in the Orange Knowledge Programme partner countries.

The Orange Knowledge Programme will be implemented through three types of interventions:

- individual scholarships;
- group trainings; and
- institutional projects focusing on sustainable improvement of technical and higher education capacity.

For further information on the Orange Knowledge Programme reference is made to annex 1.

III. Current state of affairs

The relationship between the Netherlands and Mozambique in capacity building in education lasts for more than four decades. The predecessor of the Orange Knowledge Programme, [the NICHE programme](#) started in 2009, and is still ongoing. In Mozambique, the NICHE programme aims at improving the capacity in higher education and technical professional education in the following priority sectors: Agriculture, Water, Energy and Maritime, Sexual and Reproductive Health and Rights (SRHR), and Good Governance.

The NICHE projects have been identified and developed in consultation with the Embassy of the Netherlands and the Mozambican Ministry of Education and Culture (the predecessor of the Ministry of Science and Technology, Higher Education and Technical Professional).

Within the area of agriculture, NICHE aims to increase food and nutrition security; sustainable production; (community) access to land, inputs and markets; and in particular, value chain development. Within the water sector, NICHE contributes to Water and Sanitation and Integrated Water Resources Management, emphasising the development of expertise and training of professionals for the sector. One of the main challenges in the water sector in Mozambique, that has been tackled by the NICHE programme, is the lack of an integrated approach and a strategy to build capacity in order to increase the number of skilled work force for the sector. In order to have an employment perspective for the professionals delivered, the continuation of labour market responsive skills development and professional training is necessary.

Regarding SRHR, NICHE focusses on initiatives that significantly contribute to the reduction of maternal and neonatal mortality by providing capacity building for better health care during pregnancy and childbirth. The support to the top sector Energy and Maritime, identified in the 2012 Economic Diplomacy Note of the Embassy as an important intervention area, provides training of highly qualified professionals in different areas relating to gas, renewable energy and energy management, taking into account the environment and gender equity.

In addition, a substantial part of the NICHE programme has been dedicated to strengthening education at system level (both HE and TVET). The link between education and the labour market also remains a priority in NICHE, as well as promoting equality of opportunities for women and girls. The programme aims to achieve better integration of graduates from (formal) education into, and a better match with the needs of the labour market.

Complementary to the Embassy programme, the NICHE programme has invested to strengthen the higher education systems in Mozambique, through the support given to, among others, the Directorate of Higher Education (DNES) and the National Council for Quality Assurance and Accreditation (CNAQ). Although significant progress has been achieved, additional investment remains necessary. The NICHE programme has also enhanced knowledge in technical and vocational education and training (TVET), creating direct links to the labour market and entrepreneurship and promoting equal opportunities for women and girls to participate in social and economic development.

Given the longstanding engagement in the broader education sector, Mozambique has a large Dutch alumni pool, the [NAAM \(Netherlands Alumni Association Mozambique\)](#), that recently (2017) has been established and is defining its working plan, in complementarity with the Orange Knowledge Programme and in coordination with the Embassy in Maputo. Mozambique's share in the NICHE programme was the highest in Africa (21,2%), equivalent to 35 projects, and with a budget of 39,436 million Euros¹ (2009-2020). Besides NICHE,

¹ € 24,090 million during NICHE I; € 15,346 million during NICHE II

Mozambique also participates (at a lower level) in the Netherlands Fellowship Programmes (NFP), including tailor-made trainings. A full list of NICHE projects can be found here ([Full list of NICHE projects](#)). The ongoing NICHE projects are expected to close in 2020.

The recently published [Policy Note by Minister Kaag](#)² (Foreign Trade and Development Cooperation) "*Investing in Perspective - Good for the World, Good for the Netherlands*" indicates how the Dutch government plans to tackle international challenges and opportunities. This policy note was complemented in November 2018 by a letter to parliament to further elaborate on the focus regions and other topics mentioned in the policy note³.

In relation to Mozambique, the policy note highlights the work done with and in the port city of Beira. The Netherlands has been working with Beira's authorities since 2011. Dutch knowledge institutions and consultancy firms (for example VNG and Kadaster International) help analyse the problems and work with parties in the city on solutions and financing, in coordination with the Embassy, to assist and support the city to become more resilient and transparent, and to improve the living conditions, the investment climate and the financial strength of the city. However, since Mozambique does not fall within the newly defined focus regions, support will be gradually scaled back in the following years, except for support in Food and Nutrition Security and Water, which remain important themes.

IV. Identification of the needs

The needs assessment was conducted by means of a desktop review of available strategies via an extensive stakeholder engagement process, including individual visits to institutions and a stakeholder's consultation at the Embassy. During the scoping mission (22 February – 10 March 2018), conducted by Rosa Borges and Mervin Bakker, the priorities as indicated in the Compact Scan+ prepared by the Embassy have been discussed with the sector specialists. The Orange Knowledge Programme has been introduced to the Minister of Science and Technology, Higher Education and Technical Professional, and the national directors of Higher Education, Technical and Vocational Education, as well as national directors for the policy themes (Water and Agriculture), the Directorate of Higher Education and Training and the National Council for Accreditation and Quality Assurance.

Several education institutes have been visited and consulted, representing the education and training institutes in the priority sectors Water, Agriculture, Energy and Maritime. Among the donors consulted are the Norwegian Embassy, the World Bank and the GIZ/Joba project for skills development.

In addition, on the 8th of March 2018 a broad stakeholders' workshop has been held at the embassy on the four main sectors of the bilateral Embassy programme in Mozambique: Food and Nutrition Security; Water; Energy & Maritime; and Sexual and SRHR. The workshop included around 50 representatives of education and governmental institutes, international

² Source: [Beleidsnota Investeren in Perspectief, May 2018, Minister S. Kaag](#)

³ Source: [Kamerbrief focusregio's en andere Nota-onderwerpen](#), November 2018, Minister S. Kaag

NGOs, private sector, and other donors. The participants were asked about the current state of affairs in the sectors, their ideas on tackling the challenges and opportunities and the expected role of the Orange Knowledge Programme to help solve these gaps.

Nuffic further specified the needs regarding SRHR and water during a monitoring mission to Mozambique in November 2018 and during a scoping mission in April 2019, in close cooperation with the Embassy. The CPI will be updated in order to include the results regarding water within the following months.

The selected priority themes and geographic focus

Based on the input of the Embassy of the Kingdom of the Netherlands in Mozambique and on the input of the various stakeholders, the Orange Knowledge Programme will focus on the following bilateral priority themes of the Embassy:

- **Food and Nutrition Security (FNS)**, with a focus on nutrition;
- **Energy & Maritime**, with a focus on renewable energy and maritime sciences and practices;
- **SRHR**, particularly in relation to expanding economic opportunities for vulnerable groups; and
- **Water**.

In order to consolidate the results obtained with the NICHE programme, the Orange Knowledge Programme will support the further strengthening of higher and professional **education at system level**, on a case-by-case approach. Initiatives in these sectors envisage to consolidate the results achieved in the NICHE programme (please refer to [Full list of NICHE projects](#)).

Throughout the programme and sectors, specific attention shall also be given to a number of **cross-cutting issues**. The programme will promote and emphasise job creation, alignment with the labour market and gender equity. The inclusion and improvement of working conditions for women and girls, and marginalised and discriminated groups, will be prioritised within all interventions and sectors.

The Zambezi Valley, the Beira corridor, and the Cabo Delgado Province will be prioritised for Orange Knowledge Programme interventions.

At this moment, a regional (Southern Africa) perspective is not being considered. However, since the Orange Knowledge Programme is a flexible programme, regional (Southern Africa) interventions or other themes might be agreed upon during the annual reviews of the CPI.

Analysis of the priority themes

Theme 1: Food and Nutrition Security, emphasis on a comprehensive nutrition approach

According to the FAO⁴, agriculture in Mozambique, which is the main source of revenue for approximately 90% of the Mozambican population, is mainly rain-fed, often based on labour intensive agricultural methods, with very low production and productivity, and post-harvest losses estimated at 30%. Other factors that negatively influence the scaling up of agricultural production are the lack of accessible, quality seeds; climate related aspects, such as heavy rains and droughts; and the low access to improved agricultural inputs and modern technologies, such as smart irrigation techniques, greenhouses and mechanisation. Requisites to increase agricultural production are access to (export) markets and capital.

The majority of the agricultural work is done by women. Gender inequality and poor access of women to resources keep productivity low, and food insecurity and malnutrition high. Statistics show that 24% of the households are food insecure; 43% suffer from chronic under-nutrition, affecting almost one in every two children under the age of five years. The situation tends to get worse as (traditional) agriculture does not seem to be sufficiently attractive for the youth. From the stakeholders' consultation, it appears that the young generation probable (small) farmers do no longer value a future in the 'traditional' agriculture and leave to the cities. This new generation of future farmers need to be challenged and want to apply new, smart technologies to increase (all year) production; to have a better quality of life; and generate more income. [Agricultural extension](#) (training, advisory services and technology transfer schemes) has also proved to play a crucial role to help (traditional) farmers adopt research findings and other new agricultural innovations and technologies.

The World Bank and RUFORUM are currently developing a programme named Strengthening Agricultural Higher Education in Africa (SHAEA). SHAEA, which has links to the FNS framework of the Embassy, could offer opportunities to increase impact in FNS, creating synergy with the Orange Knowledge Programme, while creating opportunities for the Dutch education sector in (e.g.) agribusiness and entrepreneurship, agri-food systems and nutrition, rural innovations and agricultural risk management. Mozambique is one of the SHAEA priority countries⁵.

The Orange Knowledge Programme will contribute to improve the food security, and in particular focus on eliminating the root causes of malnutrition. The sole availability of nutritious food is not a guarantee that nutrition security will be achieved. Although generally associated with food production, nutrition security is intrinsically related to pillars such as education, health, economics, habits and cultural aspects. Changing the way people eat starts with the promotion and development of healthy eating habits. Education, training and research are indispensable. Therefore, the Orange Knowledge Programme wants to contribute to what can be called comprehensive nutrition, in which all themes and elements are linked.

⁴ FAO- Country Programming Framework for Mozambique 2016-2020, July 2016

⁵ Please refer to <http://www.ruforum.org/SHAEA/>

The Netherlands green education sector and companies can play an essential role in the food security sector in Mozambique, working together with and receiving broad support from (small) farmers, farmers' associations and councils. This cooperation is crucial to promote innovations in agriculture and promote a new, balanced food consumption pattern among the population with affordable and healthy products.

Based on the expressed wish to have an integrated nutrition approach, the Orange Knowledge Programme can consider including complementary interventions in other sectors. One of the sectors that could add additional value is water and sanitation. Although some steps have been made in the past two decades, water scarcity and sanitation in Mozambique are still big challenges that affect people's lives and have consequences for agriculture and food production. According to a [World Bank study](#)⁶, access to improved water sources was in 2015 around 60%. The progress in urban and rural sanitation is limited (around 28% in 2015). The availability of drinking (piped) water, also in the main cities, has become highly uncertain (and even declining in some provinces such as Niassa, Cabo Delgado, Zambézia, and Manica), because of prolonged drought periods.

Theme 2: Energy & Maritime (with focus on renewable energy and maritime sciences and practices)

Energy demand is growing, at an average of 7%-8% per year, but the electric supply is expensive, and the service is unreliable, often only available on 60%–70% of the time. Access to energy is one of the major challenges for Mozambique, since only 25% to 30% of Mozambicans have access to energy. With the ambition of the Mozambican government to have this percentage raised to 100% by 2030 (SDG 7) requires major efforts. In rural districts, kerosene is the main fuel for lighting. For cooking, mainly charcoal and wood are used. The CO₂ emissions not only have an impact on the climate, but also on people's lives and health, mainly of women and children, marginalised groups and elderly.

Mozambique is a country with a vast potential for decentralised production of clean energy: an almost unlimited solar power potential in the whole country, hydro power and huge resources of biomass. The [Renewable Energy Atlas](#) identified multiple potential hydro projects, in several Northern provinces. Mozambique's Renewable Energy policy (2011) foresees in the increase of energy access through renewable energy; and to promote and accelerate investment in renewable energy. The interventions in [Affordable and Clean Energy and Climate action](#) respond to SDG 7 and SDG 13, in accordance with a climate development cooperation policy as described [here](#). The Orange Knowledge Programme can contribute to reach these goals by strengthening the capacity of relevant (government) institutions, raising the skills of Mozambicans and better matching supply and demand on the job market.

In addition, the maritime sector is growing alongside the extractives industry as all large oil and gas companies need maritime support for the operations. On top, Mozambique wants to capitalise on its geographic position along the Indian Ocean and the existence of natural

⁶ Findings of the Mozambique Water Supply, Sanitation, and Hygiene Poverty Diagnostic, 2018

ports to develop national maritime cabotage. The Ministry of Transport and Communications (MTC) lacks the necessary knowledge and expertise to capitalise on these developments. An example is the aim to transform the School of Marine Sciences of Mozambique (Instituto Superior de Ciências Náuticas) in Maputo, into a centre of excellence in the education and training of maritime leadership and subsequently to provide certification of trainees to meet the needs of the maritime sector.

Dutch institutes and companies, with extensive knowledge and expertise in the energy as well as the maritime sector, can provide the support needed to (further) develop the available knowledge and equipment. The Orange Knowledge Programme can contribute to the further development of the capacity of maritime institutions and relevant bodies within or closely linked to the Ministry of Transport and Communications, both in pedagogical terms and in terms of content, according to international standards of training and certification so that trainees, upon completion of the course, have international competences and recognition.

Theme 3: SRHR (particularly in relation to expanding economic opportunities for vulnerable groups)

Looking at trends in sexual and reproductive health and rights (SRHR) including HIV/AIDS, Mozambique portrays a mixed picture. There have been tremendous improvements over the past years, notably in policymaking and legislation. Compared to other countries in the SADC region, laws and policies are favourable in Mozambique. The government aims at more and better health care services reaching everyone in the country. Almost 1.600 public healthcare facilities provide free services in the areas of family planning, antenatal care, assistance during delivery, vaccinations and treatment for STI's, HIV and TB. The objective is to gradually reach all adolescents with comprehensive sexuality information and services (HIV testing and contraceptives). Since 2014, the penal code changed in terms of decriminalizing safe abortion and is no longer discriminatory about same sex relationships. In addition, the Ministry of Health aims to provide comprehensive sexuality education in secondary schools including family planning services.

Yet, implementation of laws and policies remains challenging. Medical guidelines for safe abortion are gradually being implemented, but unsafe abortion is still a major cause for maternal mortality. And civil society organizations (CSO's) promoting LGBT-rights have not yet been legalized. Local and international CSO's remain crucial in pushing and supporting the government to implement laws and policies. An additional challenge was recently posed by the reinstatement of the Protecting Life in Global Health Assistance (formerly known as Mexico City Policy) by the US government, the largest HIV/AIDS and SRHR donor in Mozambique. An extra effort is required to ensure women have access to safe abortion information and services. Still 60% of facilities faces stock-outs of contraceptives and only 34% of health facilities has adequate water facilities (in the north 16%). The health workforce, although increasing, remains insufficient and quality of care is deplorable.

These challenges in implementation leave Mozambique in a dire state with regard to SRHR. Despite contraceptive prevalence doubling from 11% to 23% in 5 years, the unmet need for

family planning remains high at 23%, even higher under girls and young women. Fertility rates are high, especially in the rural areas. On average, a woman gets 5,3 children in her lifetime. Mozambique has the 5th highest prevalence of teenage mothers, with 46% of women start childbearing before 18. One of the reasons for early pregnancy is child marriage (48% of women are married before 18).

While maternal mortality ratios are declining in other regions, in SADC they increased between 1990 and 2010, mainly as a result of HIV. The countries most affected in the world by the HIV epidemic are in southern Africa. The region is home to just 6% of the world's population, but includes more than half (53%) of the people living with HIV (19,4 mln). Though the number of new HIV infections and HIV deaths are both declining, HIV, together with TB (which often co-infects people living with HIV), remains one of the top 5 causes of death in the region. Still nearly 40% of those living with HIV is not on treatment.

There are specific groups that are most affected. HIV affects adolescent girls up to 4 times more often than their male peers. Sexual violence and marital rape remain major causes of an HIV infection. Other key populations are men having sex with men, migrants, injecting drug users, sex workers and prisoners. These vulnerable groups are easily left behind, yet are key to ending the spread of HIV infections.

It is especially this last group which is most affected by other challenges in their daily lives. One of the most common is unemployment. Many young people are unemployed due to lack of skills and/or employment opportunities, poverty or forced out of school as their caregivers may not afford to pay school fees. The added discrimination that vulnerable groups, such as young, unmarried mothers and people living with HIV face, makes their access to the labour market and to technical and vocational skills even more dire. In 2018, the World Bank estimated that over 42% of young people (15-24 years) in Mozambique is unemployed.

Theme 4: Water

Mozambique is faced with several challenges within its water sector. First of all there is an enormous challenge to provide the population with drinking water and sanitation. Although huge improvements have been achieved, the majority of the population has not yet access to improved domestic water supply systems (51%) or improved sanitation facilities (69%). The challenge is related to the insufficient capacity of the water infrastructures and -institutions to accommodate the water demand which is even growing due to population growth and expansion of economic activities. Huge investments are necessary, which cannot be provided for by public funds only.

The second challenge is that Mozambique contains a delta of thirteen large rivers. It has to deal with the large natural variability of water levels and discharges, often causing floods and droughts. Climate change is expected to increase the variability of water resources and cause that extreme events occur more frequently and more intense. Being the downstream country of large international rivers, Mozambique has to deal with the various riparian countries as well. Although floods have occurred very often, droughts have also become a

significant water management challenge in the past few years. Competition for water resources is expected to increase in the coming years, so regional cooperation is crucial to help to solve or prevent problems.

Finally, there is the challenge related to the 2500 km long coastline. Most of the large cities are situated at the coast at very vulnerable locations. The cyclones Idai and Kenneth who severely damaged part of the coastal cities and villages in the provinces of Sofala and Cabo Delgado in March/April 2019 have devastatingly emphasized this vulnerability. The expected mega-investments related gaps take place in areas with a vulnerable water situation along the coast. Also, the unsustainable use of the available water can lead to irreparable environmental damage. Knowledge about coastal management and engineering for the protection of land, the control of erosion and the development and protection of coastal groundwater resources, is very limited.

Deficiencies in water infrastructure (for drinking water, industries and irrigation) and the lack of qualified people undermine adequate supply of water, (waste) water treatment, drought management, flood management and the monitoring and protection of water resources. According to a World Bank study, the availability of drinking (piped) water has become highly uncertain because of long(er) drought periods and is even declining in some provinces (Niassa, Cabo Delgado, Zambézia, and Manica). This also refers to the main cities. Proper, integrated water resources management at the national and regional level is necessary, including investments in infrastructures and services.

The added value of the Orange Knowledge Programme lies foremost in the (further) development of available knowledge and in the strengthening of organisations and individuals both in educational and professional terms. Dutch knowledge institutions and other organisations with extensive expertise and knowledge about IWRM are ideally placed to work together with Mozambican water institutions and other relevant bodies, in order to work together to build the necessary skills and competences to tackle the aforementioned issues.

The Embassy's objectives relevant to the priority themes

The Embassy's Multi-Annual Country Strategy (MACS) for Mozambique covers the period 2019 - 2022 and is in line with Minister Kaag's revised policy priorities for Mozambique.

Through the Embassy's programme for development cooperation, The Netherlands will continue to support inclusive and sustainable development in Mozambique, but on a smaller scale than before. The shift from aid to trade is at the core of this programme. An integrated portfolio of interventions in water, food security and energy offer the highest potential to create synergies, to contribute to private sector development and to stimulate entrepreneurship.

The new MACS is available on the Embassy's website for further consultation and can be found via [this link](#).

Structure and current status of the provision of post-secondary education in the priority themes selected⁷

Due to the political history of the country, with colonisation ending only in 1975, and being followed by a long civil war (1977–1992), the education systems in Mozambique can be considered recent. Several comprehensive reforms have been carried out since the end of the civil war and are still on-going (partially with NICHE support).

Portuguese is the official language of Mozambique and is also the medium of instruction at all levels of education in the country. Pre-school is not compulsory. Primary education starts at the age of six, is free of charge and lasts seven years. Completion of primary school gives access to the secondary education level. 79% of pupils complete the first cycle of primary school, while 55% complete the second cycle of primary school (7 years) (MINED, 2011). Secondary education is offered in general and technical schools for students between thirteen and eighteen years of age. Secondary level technical and vocational education (TVE) takes place in TVE schools and institutes and in Vocational Training centres (VTCs), available in all provincial centres. Training is offered in agricultural, industrial and commercial subjects. Most TVET schools are operated by the National Directorate of Technical Education (DINET) of the Ministry of Education. Vocational training is also offered by the Ministry of Labour (MINTRAB) through the National Institute for Employment and Vocational Training (INEFP). The target group is mainly employed or unemployed individuals (including school leavers) who do not have alternative educational options or economic options in the labour market. Traditionally, linkages between both TVE schools and vocational training centres and the industry have been limited, partly due to a shortage of internship opportunities within the industry. Secondary education level completion rates are very low: 92% of pupils going to secondary school do not complete their full secondary education, which affects their ability to find employment.

After completing secondary education, students can progress to a university, polytechnic, higher institute, college or academy. In any of these institutions they can follow a variety of study programmes. Since 2010, the law recognises three types of tertiary level degrees. The first cycle of university education leads to the *Licenciatura* (Licentiate), which is comparable to the Honours degree (a one year degree qualification that follows the Bachelor degree) in SADC countries such as South Africa. The Licentiate is also offered by Polytechnics, higher institutes, colleges and specific academies. The next level is *Mestrado* (Master's) degree and regarded as *graduate studies*. The minimum admission requirement to this level of education is a licentiate.

Holders of a Master's degree (a two year qualification) can earn a PhD degree, although programmes at this level do not yet cover all disciplines. Tertiary education can also be followed at polytechnics. The formal sector in Mozambique is small and cannot absorb all graduates so the emphasis is on creating graduates who can create work for themselves and

⁷ Based on Nuffic study "Alignment of higher professional education with the needs of the local labour market: The case of Mozambique" (Mtinkheni Gondwe, 2011)

others without waiting for vacancies at existing employers. The second and third level of degrees is only available at universities.

Mozambique (as reported in 2014) counts 48 public and private higher education institutions, most of them concentrated in the capital Maputo, and offer education to around 123,800 students (2012), of which 34% in private institutions. The share of students in the private institutions is growing, due to the limitations of public institutions to absorb more students⁸.

Analysis of the education and training gap for the priority themes

Together with many other donors, the Embassy in Maputo and Nuffic (via NICHE and NFP) invested in the following areas:

- Higher and TVET education at system level;
- Water availability and water resources management;
- Improved food security and sustainable use of natural resources;
- Improvements in water management, drinking water and sanitation;
- Energy and Maritime;
- Sexual and reproductive health and rights;
- Good governance; and
- Equal rights and opportunities for women, and labour market alignment.

From the direct stakeholder's consultation in February/March 2018, the Orange Knowledge Programme identification mission has identified the following challenges in education and training in Mozambique, in relation to the selected priority themes.

1. Food and Nutrition Security, with focus on a comprehensive nutrition approach

Nutrition is not a stand-alone science or intervention; it is linked to different pillars of food security like health, education (both on household level and school/university), inclusiveness and gender. These topics, as well as cultural issues and regional spreading, are not sufficiently considered in the FNS strategy, nor when dealing with the causes of malnutrition. Besides, there is a discrepancy between the existing curricula (theory) and the practice. Clear interventions are needed, such as a multiple sector plan to fight malnutrition and a comprehensive curriculum. Whereas studies focus mostly on theory there is a huge demand for people with practical skills and a broad approach including all facets related to FNS.

A higher level of coordination and collaboration between universities (and homogenisation of curricula), as well as among other institutions in the sector, is recommended. At the moment there is a lack of alignment between (e.g.) the curricula offered by the various institutions. Another challenge is to address the lack of continuity due to turnovers in institutions and projects.

⁸ Source: Implementing the Strategy for financial reform of higher education in Mozambique (EFES), CHEPS-Center for Higher Education Policy Studies (<http://www.utwente.nl/bms/cheps>), Working Paper 01/2018, Bart Fonteyne & Ben Jongbloed; <https://www.utwente.nl/en/bms/cheps/research/CHEPSWorkingPaperSeries/chepswpseries201801.pdf>

Underdeveloped sectors in agriculture that should receive more attention are: management of irrigation systems; pest management; agribusiness management; forestry management; fishery and planning; and result-based monitoring and evaluation.

The Orange Knowledge Programme could contribute to overcome these challenges by:

- Stimulating that the nutrition chain will be handled in an integrated way, including issues such as health, culture and regional spreading, renewing the strategy for FNS and defining interventions (such as a multiple sector plan to fight malnutrition and, comprehensive curriculum development).
- Providing institutional capacity building and hands-on training of technicians for key interventions, and to build up TVET capacity (e.g. teacher training, revision of/adjustments of curricula, scholarships in underdeveloped sectors)
- Integrating Dutch expertise/experts in curriculum development/revision and innovation in agricultural production and productivity.
- Implementing modernisation of the agricultural sector (mechanisation, greenhouse agriculture); knowledge transfer regarding management of irrigation systems; pest management; agribusiness management, forestry management; fishery and planning & result-based monitoring and evaluation.
- Linking to national policies or international initiatives to generate more impact towards overcoming the education and training gaps in FNS, such as the World Bank and RUFORUM initiatives to strengthen agricultural higher education in Africa (SHAEA).

2. Energy and Maritime (with focus on renewable energy & maritime sciences and practices)

- Lack of skills for local content use in exploitation of gas reserves, leadership development at crucial (government) organisations, coordination of energy policies, business (models), mind-set to develop renewable energy sector (electricity), geology data for exploration.
- Lack of basic knowledge on the development of the maritime sector at government level regarding regulatory bodies, coordination of maritime policies and business (models), out of date knowledge (and equipment) on keeping the port channels open (dredging), knowhow needed to develop the infrastructure and mobility within the country (cabotage).
- Most Mozambican energy and maritime education institutes lack knowledge and (practical) skills to offer specific education programmes according to international standards (the gas and maritime sector must deal with international companies that work according to the highest international standards).
- An entrepreneurial mind-set and attitude is often lacking.
- There is a gap between supply and demand of graduates, partly due to the lack of deficiency in practical skills. Although there are enough graduates each year, they are not able to get a job. Apparently, institutions lack the competency or knowledge to adjust their curriculums to the market needs. Due to this mismatch between practice and theory, institutions miss the link with the market (private sector).

- Weak development to create expertise and practical capacity in the renewable energy field, at TVET and HE level, to provide the demanded (clean) electricity, especially in remote areas where the access to electricity lines is almost non-existent.
- Regarding energy transition, it's wise to consider possibilities for the development or strengthening of practical training to prepare young people for the labour market both in the oil and gas sector and renewable energy sector, and to provide in their own jobs, in cooperation with the private sector.

The Orange Knowledge Programme could contribute to overcome these challenges by:

- Increasing the capacity at government level (ministries), higher education level, and at vocational and technical (professional) level to train skilled technicians for key interventions in the renewable energy and maritime sectors, with gender equity.
- Providing (practical) knowledge concerning e.g. small solar, hydro systems to produce and expand access to energy (to small households/remote areas).
- Providing hands-on training and increase technical and practical capacities in renewable energy.
- Revising and developing relevant curricula and provide staff training for the maritime sector, including opportunities for the (compulsory) students' internships and work placements.

3. SRHR (particularly in relation to expanding economic opportunities for vulnerable groups)

The challenges currently identified regarding education and training on SRHR and on expanding economic opportunities for vulnerable groups are the following:

- The health workforce, although increasing, remains insufficient and quality of care is poor. Therefore, TVET/HE institutions need to upscale their capacity to deliver more graduates whose skills are in conformity with labour market needs and demands of the clients/patients.
- Lack of access for vulnerable groups to vocational skills and Life Skills training with particular attention to SRHR including HIV/AIDS.

The Orange Knowledge Programme could contribute to overcome these challenges by:

- Providing training to key TVET/HE institutions and/or civil society organisations on strengthening efforts in the area of providing sexual and health care services to everyone;
- Providing trainings to key TVET/HE institutions and/or civil society organisations on developing strategies that enable women and girls, including marginalised and discriminated groups, to gain access to vocational skills and employment, enhancing their employment possibilities in the labour market;
- Integrating Dutch expertise/experts in curriculum development/revision so that graduates have the necessary (hands-on) skills and competences to be readily absorbed by the labour market.

4. Water

The availability of the right quantity and quality of water at the right time and at the right place is key for inclusive and sustainable development in the country. To deal with this major challenge, capable water institutions are essential.

One of the main challenges in the water sector in Mozambique, that has been tackled by the [NICHE programme](#), is the lack of an integrated approach and a strategy to build capacity in the water sector. Of the total needed skilled work force for the sector, estimated at around 7.000 professionals, only around 50% is available. In order to have an employment perspective for the professionals delivered, the continuation of labour market responsive skills development and professional training is necessary.

The challenges currently identified regarding education and training on the broad water sector, are the following:

- The broad water sector has a clear need to invest in (specialised, middle level) professional education and training; at least 3.500 professionals should be trained, at national level.
- Trainings should be based on a long-term plan in accordance with the requirements of the labour market, in addition to short-term benefits and tailor-made training (e.g. concerning specific skills or new technologies).
- Internships and joint research programs should be an option to countervail the development of isolated research.
- There is a gap in the cooperation between the private sector and institutions engaged in knowledge management. To involve the private sector (and get an employability perspective for the professionals delivered), a thorough identification of the needs of the labour market is necessary.

The Orange Knowledge Programme could contribute to overcome these challenges by:

- Building on and complementing the investments under the NICHE programme, particularly regarding knowledge and skills development, related to water supply and integrated water management;
- addressing the shortage of knowledge and skills in coastal zone management and engineering with a link to the maritime sector including interventions in the following areas:
 - infrastructure development and management/protection (e.g. dunes, dykes);
 - safe groundwater development and management (including monitoring and control of saltwater intrusion, possibly including managed artificial recharge);
 - management of coastal ecosystems;
 - marine and coastal monitoring (water and sediments);
 - port development and protection;
 - integration of land and water management;
 - urban water management in coastal cities;

- New technologies (e.g. blended learning, e-learning, MOOCs) should be considered and/or strengthened to increase the capacity of education institutes and stakeholders at national level.
- continue knowledge development in management and operation of infrastructure, at entry and medium level through training of professionals;
- develop further capacity on the provision of water WASH, and IWRM including the management of floods and droughts, and coastal management and engineering: protection of land, control of erosion, developing and protection of coastal groundwater resources, integrated spatial and water planning, , among others;
- revising curricula to align with the specific skills that are a pre-requisite for innovation and improved knowledge about different technologies: desalinization, water re-use for drinking purposes, recycling water, 'grey' water per technology, among others;
- provide training interventions (including on revised curricula) to enhance skills in procurement and planning skills, master plans, cooperation with the private sector, as well as negotiation skills for addressing water problems and scarcity.

Proposed Orange Knowledge approach

The proposed four sectors of the Orange Knowledge programme are in alignment with the Embassy's multi-annual country strategy and will be gradually implemented. In 2018, the programme will start with the sectors Food and Nutrition Security, and Energy and Maritime. In 2019 the sectors Water (particularly focussing on water management); and SRHR (focussing on increasing access to vocational skills and training of vulnerable groups, particularly girls, and access to comprehensive sexual and reproductive health information) will be added. Overall, the Orange Knowledge Programme will contribute to increase skills and create job opportunities in the indicated sectors, with specific attention to gender equality.

The needs assessment, stakeholder engagement and preceding analysis of the education and training gap revealed the following approaches hold the most potential to address the challenges and shortcoming:

- An integrated and inclusive approach to addressing problems for example approaching food security and nutrition from a health, community and poverty perspective.
- Crosscutting interventions that would enhance the impact and scope of the TVET sector.
- Interventions that proactively engage the private sector.
- Initiatives that will contribute to achieve equality, enhancing the position of women and vulnerable groups.
- Interventions that enable women and girls, as well as marginalised and/or discriminated groups to access to vocational skills training combined with access to comprehensive sexual and reproductive health information and services.
- Interventions that contribute to job creation such as providing technical assistance (training) to existing institutions to offer industrial oriented training; development of specific competencies for the small industry; strengthen technical and professional

skills; and by promoting entrepreneurship among youth Initiatives like the [Orange Corners](#) could be further disseminated.

V. Envisaged Theory of Change and outcomes

Based on the analysis of needs and the consultations with the stakeholders, a Theory of Change (ToC) for Mozambique has been formulated, taking the four main sectors (FNS, Energy & Maritime, SRHR and Water) into account.

This ToC is based on the general [OKP ToC](#) and describes the way the Orange Knowledge Programme will contribute to the Dutch development cooperation policy as described [here](#). The OKP M&E framework is intended to make clear that all interventions within OKP should be geared to contribute coherently and measurably to common long term impacts, as defined by the Ministry of Foreign Affairs (<https://www.dutchdevelopmentresults.nl/theme/>).

The OKP programme in Mozambique aims at the following outcomes and impacts:

In the case of **Food and Nutrition Security** the following long-term impacts will be aimed at:

- Reducing malnutrition; and
- Promoting agricultural growth.

In the area of **Energy and Maritime** the following long-term impacts will be aimed at:

- Access to affordable, reliable, sustainable and modern energy; and
- Maritime sector operating in accordance with international (security and skills) requirements, creating more jobs and value added in infrastructural (transport) development.

In the area of **Sexual and Reproductive Health and Rights** the following long-term impacts will be aimed at:

- More respect for the sexual and reproductive rights of groups who are currently denied these rights;
- Better public and private health care for family planning, pregnancies and childbirth, including safe abortions; and/or
- Better information and greater freedom of choice for young people about their sexuality.

In the area of **Water** the following long-term impacts will be aimed at:

- Water is used sustainably and equitably, ensuring the needs of all sectors and the environment.

The following **medium-term impacts** will contribute to this:

- (I) Education system (TVET/HE) is of good quality, relevant and accessible (SDG 4);
- (II) Partnerships between persons and organisations are inclusive and sustainable (SDG 17);
- (III) Organisations key to (sectoral) inclusive development of partner countries are strengthened by inflow of enhanced workforce.

This will be achieved by the following **outcomes**:

- A. TVET/HE organisations (in the selected partner countries and in NL) perform better their core tasks, firmly embedded in their environment (in line with country / regional specific labour market needs & aiming at inclusiveness);
- B. Enhanced knowledge and skills of individuals and organisations in line with country / regional specific labour market needs & aiming at inclusiveness (in partner countries and in the NL).

Annex 3 describes the Theory of Change for Mozambique.

Annex 4 provides an M&E matrix presenting the expected outcomes and connected indicators for the OKP country programme.

Note: Outcomes can be adjusted, in line with Dutch Development Indicators and definition policy priorities by the Embassy.

VI. Articulation of demand and supply

The OKP offers different kind of capacity building interventions (see Annex 1):

1. Partnership projects between TVET and higher education institutions locally and in the Netherlands;
2. Tailor-Made Training (TMT) for groups;
3. Individual scholarships for mid-career professionals; and
4. Alumni events.

Nuffic will publish calls for institutional cooperation projects and group training. Based on those calls key organisations in Mozambique and in the Netherlands are invited to submit proposals that are aligned with the CPI and contribute to the ToC outcomes and impact in annex 3 and 4. Please refer to the [policy framework](#) that underlies the OKP and an explanation of the various [OKP modalities](#).

For scholarships, please consult the [OKP scholarship website](#). For updates on calls and other OKP information, please register for the Programme Updates via the [OKP website](#).

Preliminary planning of implementation

Step	Date
CPI published on Nuffic website	20 September 2018

Revised CPI including SRHR published on Nuffic website	June 2019
Revised CPI including Water published on Nuffic website	September 2019
First FNS calls published	Q1 2019
Publication call TMT+ Energy and Maritime	Q2 2019
Publication call TMT+ SRHR	June 2019
Publication call TMT+ Water	Q3 2019
(Re-)Publication FNS calls	Q3 2019
Publication Energy & Maritime call	Q3 2019
Publication call TMT+ Water	Q4 2019

VII. Indicative budget for the programme

As a general indication, the agreed budget over the term of the programme is as follows:

Period of implementation 2018 – 2022	FNS (incl. crosscutting interventions)	Energy & Maritime (incl. crosscutting interventions)	Water (incl. crosscutting interventions)	SRHR (incl. crosscutting interventions)	Total
Institutional projects	3,400,000	600,000	-	-	4,000,000
TMT+	-	300,000	1,340,000	300,000	600,000
TMT	202,500	202,500	202,500	202,500	810,000
Individual scholarships	1,100,000	450,000	450,000	250,000	2,250,000
Total	4,702,500	1,552,500	1,992,500	752,500	9,000,000

Note: The funds allocated to the programme/sector as a whole and to each partner country's programme may be subject to change, and this may affect the above indicative budget. The amounts for Water will be further detailed in July 2019. The budgets for TMT and individual scholarships and their division between the different priority areas, are estimates. The budget may also change in line with political decisions taken by the authorities. In consequence, Nuffic reserves the right to adjust this indicative budget and undertakes that, in this event, it will notify the relevant parties immediately.

The Orange Knowledge Programme promotes co-funding and matching of funds. Mozambique is classified by the OECD as a Least Developed Country (LDC)^[1]. Co-funding is not a requirement for the implementation of the Orange Knowledge Programme in

^[1] Orange Knowledge countries are classified in accordance with the list of Development Assistance Committee (DAC list) of the OECD.

Mozambique but proponents applying for Tailor-made Trainings and Institutional Collaboration projects are encouraged to include co-funding in their proposals. This will contribute to reciprocity and ownership of results established within the collaboration between all partners. Integration of co-funding in the breakdown of budgets will be one of the assessment criteria in the selection of proposals. In forthcoming calls, more information will be given to the specific demands for co-funding.

VIII. Harmonisation and coordination with (inter)national projects and programmes

This section describes the strategy adopted to ensure that the Orange Knowledge Programme activities are being identified and implemented in coordination with programmes conducted by the Embassy, national government, NGOs and technical and financial partners (TFPs).

In consultation with the Embassy, Nuffic will organise monitoring missions during which meetings will be arranged with the relevant authorities and other stakeholders (TFPs, NGOs, the private sector, etc.), for the purpose of discussing any contextual changes that could impact the implementation of the Orange Knowledge Programme.

Nuffic is closely monitoring national and regional programmes by other donors involving Mozambique. Where possible links will be sought with national policies and other donors to make sure goals are aligned and impact can be enhanced. An example of such cooperation could be the World Bank's *Strengthening Agricultural Higher Education in Africa (SHAEA)* that is currently being developed and in which the Mozambican government has indicated to participate (see FNS for further description).

Applicants for the Orange Knowledge Programme support have to describe in their proposals which strategy they will adopt to ensure that the Orange Knowledge Programme funded activities are being developed and implemented in coordination with programmes conducted by the Embassy, national government, other donors such as NGOs and technical and financial partners.

The Orange Knowledge Programme in Mozambique focuses primarily on Integrated Nutrition Security, the Energy and Maritime sectors, Water and SRHR. However, all capacity building efforts (institutional projects, TMTs, individual and group trainings) will pay attention to gender equity, marginalised groups and the creation of jobs. The calls for the Orange Knowledge Programme funded interventions can be spread in time, for the various sectors, between the end of 2018 and December 2021.

Underlining the importance of the education relation between Africa and the Netherlands, Nuffic has established a Netherlands Education Support Office (NESO) in Pretoria, South Africa in 2015. NESO South Africa is part of a worldwide network of Netherland Education Support offices that operates in locations of strategic importance for Dutch education. It is the first Nuffic office on the African continent and it exerts a regional (Southern Africa) role within the

Orange Knowledge Programme. The main activities of NESO are: 1) Capacity development in education; 2) Study in Holland promotion and advising South African students; 3) Providing information on study programmes and internship placements for Dutch students in South Africa; 4) Market information and analysis; 5) Engaging with the Holland Alumni network; 6) Local and regional Programme acquisition and administration. Since partnership development is a crucial element in the Orange Knowledge, NESO will play a leading role in the development and implementation of the programme in South Africa, Mozambique and Tanzania.

IX. Monitoring programme progress

The organisations taking part in the OKP programme are asked to report on the progress of their projects and scholarships using a Results Oriented Monitoring tool that will be provided by Nuffic. They will also record their successes and setbacks so that lessons can be learned from them as part of an organisational learning approach.

Nuffic will monitor and evaluate the OKP at programme level and will regularly discuss progress with EKN and other stakeholders, especially regarding the progress achieved related to the outcomes indicated above and the successes and failures, together with suggestions for remedying setbacks and, if possible, redefining strategies and adjusting forecasts in line with the targeted outcomes.

If necessary, for example in the event of major changes, Nuffic will discuss proposed adjustments to the CPI with the embassy and other stakeholders which may lead to an adjusted CPI.

Annex 1. Brief presentation of the Orange Knowledge programme

The Orange Knowledge Programme (OKP) is the successor to the Netherlands Fellowship Programmes (NFP) and the Netherlands Initiative for Capacity Development in Higher Education (NICHE). The Orange Knowledge Programme merges the two preceding programmes into a single integrated approach, with the addition of new elements including increased involvement of alumni, attention to cooperation between knowledge organisations, and communication focusing on the presentation of results.

The main objective is to contribute to sustainable and inclusive development through the strengthening of organisations key to sectoral development in OKP partner countries. This will be achieved by developing the capacity, knowledge and quality of individuals as well as organisations both in the field of Technical and Vocational Education and Training and Higher Education (TVET/HE) and in other fields related to the priority themes in the OKP partner countries.

In order to reach this vision, the programme will focus on the following medium and long term outcomes:

- education system (TVET/HE) is of good quality, relevant and accessible (SDG 4);
- organisations key to (sectoral) inclusive development of partner countries are strengthened by inflow of enhanced workforce;
- partnerships between persons and organisations are sustainable (SDG 17).

Reference is being made to the [Theory of Change for the OKP programme](#).

The programme will be implemented through three types of interventions:

- individual scholarships,
- group trainings, and
- institutional projects.

The three instruments will be offered in the form of an integrated approach.

The following basic principles govern the programme:

- *Innovation:*
Is key to the development and implementation of the programme and is incorporated in all aspects of the programme.
- *Reciprocity and equality:*
More attention should be devoted to reciprocity and ownership should shift to the Technical and Vocational Education and Training and Higher Education (TVET/HE) organisations in partner countries. This means that the Southern partners play an active role in the design of collaboration projects, both as submitters and as reporters of progress. The new programme will also provide more opportunities for the joint financing of scholarships, training programmes or projects with the Southern region partners, reinforcing ownership and involvement.

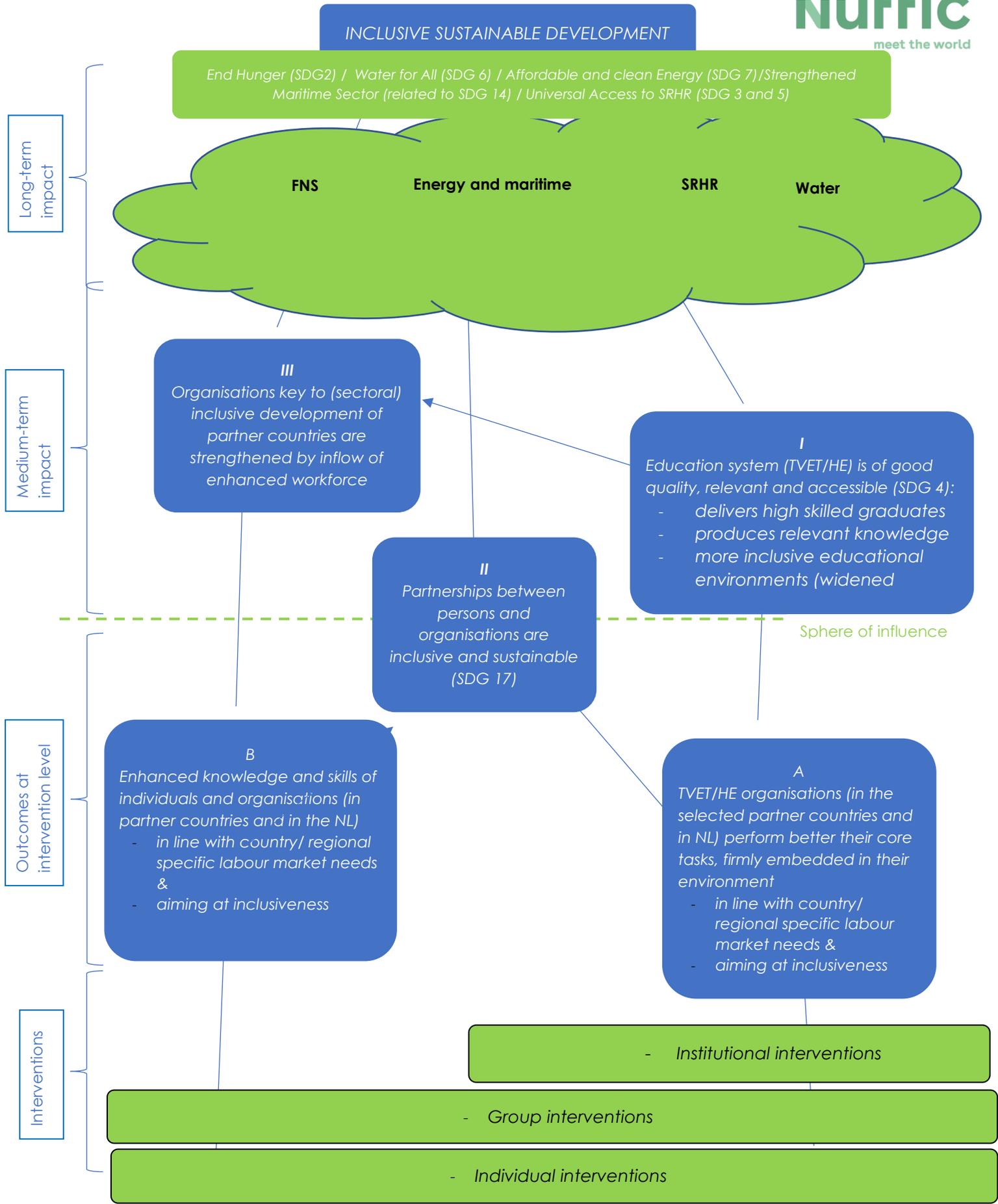
- *Flexibility:*
This concerns flexibility in implementing the programmes as far as themes, countries, duration and financing methods are concerned, depending on the demand and the context. Flexibility is also required in any modifications that need to be made in response to changes in the context within which the programme is implemented.
- *Demand-driven approach:*
Is key with regard to ownership, sustainability and the efficient use of resources. Important components include collaboration between Southern and Northern institutions, a comprehensive analysis based on available knowledge and reports, and the use of alumni.
- *Complementarity:*
The Knowledge Development Programme must be closely aligned with other centralised and decentralised programmes.
- *Co-financing:*
Where worthwhile and possible, the programme must stimulate co-financing.
- *Inclusion:*
The programme provides opportunities for marginalised and discriminated groups and integrates a gender perspective.
- *Focus on results:*
The programme focuses on presenting results stemming from knowledge development at individual, institutional and group levels.
- *Alumni:*
The programme creates a connection between knowledge professionals in the Southern region and the Netherlands. The new programme therefore places greater emphasis on alumni policy in all instruments.

Annex 2 Overview NFP/TMT Projects Mozambique

Sector/ NFP	Name requesting organisation	Dutch institution	Title	Start date	End date
Other	Ministry of Economy and Finance	CIS-VU	Spatial assessment of poverty and food security in Mozambique	01-05-2016	31-07-2017
Sexual and reproductive Health and rights	Lúrio University	Koninklijk Instituut voor de Tropen	Management and Research training for Lúrio University	01-10-2015	30-11-2015
Water and sanitation	Administração Regional de Águas do Centro (ARA-Centro)	FutureWater	Training in Water Resources and Allocation Models to Support Decision Making for ARAs	15-06-2015	31-12-2015
Water and sanitation	Universidade Zambeze, Faculty of Environmental and Natural Resources Engineering	Noordelijke Hogeschool Leeuwarden	Capacity building in Sanitation Engineering with focus on Water	01-04-2016	09-04-2017
Food security	Cartography and Land Administration Institute	Universiteit Twente, Faculteit ITC	New Approaches in Land Administration and Cadastre	03-11-2014	14-11-2014
Water and sanitation	Administração Regional de Águas do Sul	FutureWater	Training in Water Resources Modelling to Support Decision Making for ARA-Sul	01-06-2016	31-12-2016
Private sector development/	New Horizons Mozambique	Shape Your World!	New Horizons Leadership	14-06-2016	31-01-2017

entrepneurship			Development		
Food security	Direcção Nacional de Terras e Florestas	Universiteit Twente, Faculteit ITC	Principles and basic procedures in land administration with emphasis on low-cost cadastral mapping tools	19-10-2015	30-10-2015
Food security	Associação Rural de Ajuda Mútua	Universiteit Twente, Faculteit ITC	The Use of Community Land Value Approach (CaVaTeCo) for ORAM Staff, Mozambique	01-03-2017	31-8-2017
Water and sanitation	National Directorate for Water Resource Management	Stichting IHE Delft	Operational Water Management in support of a National Flood and Drought Control Unit for Mozambique	01-09-2017	31-10-2017
Sexual and reproductive Health and rights	Lúrio University	Koninklijk Instituut voor de Tropen	One student, one family module: to increase the impact of an innovative teaching method for health, nutrition and food security	01-07-2017	31-1-2018
Food security	Ministry of Land, Environment and Rural Development, Rural Markets Promotion Programme	Wageningen UR Centre for Development Innovation	Nutrition sensitive programming for food and nutrition security of rural small-scale farmer	01-09-2017	30-04-2018

			households in Northern Mozambique		
Refresher course	Radio Mozambique	Radio Nederland Training Centre	Multimedia Journalism: Changing Perspectives on Women's Rights	2016	2016



Annex 4. Monitoring & Evaluation Frameworks of the OKP programme in Mozambique

- This matrix is intended to make clear that all FNS interventions within Orange Knowledge Programme should be geared to contribute coherently and measurably to common long term impacts, as defined by the Ministry of Foreign Affairs of the Netherlands (<https://www.dutchdevelopmentresults.nl/theme/food>);
- It is important to be aware that this matrix is subject to adjustments, in line with the Dutch development policy;
- When designing an FNS intervention, projects have to **contribute at least to one long term impact**;
- The **indicators in bold** are compulsory;
- Nuffic is currently developing an online instrument based on this matrix intended to facilitate the monitoring and evaluation of Orange Knowledge projects;
- When calls for proposals will be published per country, this matrix can be made more specific by focussing on a specific long-term impact or choosing more compulsory indicators, depending on the country focus.

* Direct: target group who have been reached during project period by the new or revised outreach programme or have followed the new or revised curricula/short courses.

** Indirect: target group reached beyond the project period by graduates of the new or revised curricula/short courses.

Objective 1 (FNS): Contribute to end hunger, achieve food security and improved nutrition and promote sustainable agriculture (SDG 2)			
Long-term impact at programme level (link with FNS ToC)			
Long term impact	Long term impact indicator	Medium-term impact indicator (at country level)	Outcome indicator (at project level)
1) Reduce malnutrition	- <i>Number of people lifted out of undernourishment (indirectly**)</i>	- number of undernourished people with improved food intake (indirectly**) - number of undernourished people with improved access to healthy/diverse food (indirectly**)	- number of undernourished people with improved food intake (directly*) - number of undernourished people with improved access to healthy/diverse food (directly*)

		– number of undernourished people whose nutritional situation became more resilient to shocks (indirectly**)	– number of undernourished people whose nutritional situation became more resilient to shocks (directly*)
2) Promote agricultural growth	- Number of family farms (sub-sector, male/female; age: % < 35) that doubled their productivity and / or income (directly* and indirectly**)	<ul style="list-style-type: none"> – number of family farms (sub-sector, male/female, age: % < 35) with increased productivity and/or income (indirectly**) – number of family farms (sub-sector, male/female, age: % < 35) with improved access to input and/or output markets (indirectly**) – number of family farms (sub-sector, male/female, age: % < 35) whose farming enterprise became more resilient to shocks (indirectly**) 	<ul style="list-style-type: none"> – number of family farms (sub-sector, male/female, age: % < 35) with increased productivity and/or income (directly*) – number of family farms (sub-sector, male/female, age: % < 35) with improved access to input and/or output markets (directly*) – number of family farms (sub-sector, male/female, age: % < 35) whose farming enterprise became more resilient to shocks (directly*)
Objective 2 (Energy and Maritime): Contribute to ensure access to affordable, reliable, sustainable and modern energy for all, (SDG 7) and a strengthened maritime sector (related to SDG 14)			
Long-term impact at programme level (in relation to the defined SDGs)			
Long term impact	Long term impact indicator	Medium-term impact indicator (at country level)	Outcome indicator (at project level)
1) Energy: ensure access to affordable, reliable, sustainable and modern energy services.	- (local) relevant actors accelerate the transition to an affordable, reliable and sustainable energy system by investing in	<ul style="list-style-type: none"> - Number of people with access to renewable, clean electricity; - share of renewable energy in the global energy mix substantially increased, in urban and rural areas. - Enhanced international cooperation to facilitate access to energy education and research, including renewable energy and 	<ul style="list-style-type: none"> - improved access to affordable, renewable and clean energy (particularly in remote areas) - increased number of people trained as trainers and finding employment in the renewable energy market and technology.

	<i>renewable energy education and resources, prioritizing energy efficient practices, and adopting clean energy technologies and infrastructure.</i>	energy efficiency, towards the transition from fossil to renewable energy.	- number of businesses involved in energy activities - number of energy related (inter)national policies/laws contributed to
2) Maritime: improved knowledge, safety and security of international shipping.	<i>- Increased capacity and skills regarding (international) shipping.</i>	- Number of maritime relevant education and knowledge institutions that perform better and offer relevant, internationally accepted education and (practical) training, in the maritime industry, and the interface of oil and gas and maritime (e.g. seafarers, maritime and (port) management executives, traffic control, pilotage and cargo handling).	- Education and training institutions (at TVET and higher education level) are offering education and training in accordance with the international maritime (legal) frameworks and the needs of the country. - number of businesses involved in the maritime sector - number of maritime related (inter)national policies/laws contributed to
Objective 3 (SRHR): Contribute to universal access to sexual and reproductive health and rights (SDG 3 and 5)			
Long-term impact at programme level (link with SRHR ToC)			
Long term impact	Long term impact indicator	Medium-term impact indicator (at country level)	Outcome indicator (at project level)
1) More respect for the sexual and reproductive rights of groups who are	<i>- % of ever-partnered women and girls aged 15 years and older</i>	<i>- whether and how SRHR frameworks have been adopted and incorporated into national policies (current and observable changes) (indirectly**)</i>	<i>- whether and how SRHR frameworks have been adopted and incorporated into national policies (current and observable changes) (directly*)</i>

<p>currently denied these rights.</p>	<p><i>subjected to physical, sexual or psychological violence by a current or former intimate partner in the previous 12 months, by form of violence and by age</i></p>	<ul style="list-style-type: none"> - changes in laws, guidelines, and (health) policies and practices leading to decrease of barriers to SRH and HIV/AIDS services (indirectly**) - satisfaction with degree to which SRHR barriers facing discriminated and vulnerable groups have been reduced (indirectly**) - description of types and evidence of effective usage of accountability mechanisms to address violation of rights (indirectly**) - whether or not legal frameworks are in place to promote, enforce and monitor equality and non-discrimination on the basis of sex (indirectly**) - number of recorded cases of discrimination and violence against key populations, women and girls in relation to SRHR issues (indirectly**) - number of key populations reached by communities and advocacy networks with SRHR and HIV/AIDS information (indirectly**) - number of key populations having received SRHR and HIV/AIDS services (indirectly**) 	<ul style="list-style-type: none"> - changes in laws, guidelines, and (health) policies and practices leading to decrease of barriers to SRH and HIV/AIDS services (directly*) - satisfaction with degree to which SRHR barriers facing discriminated and vulnerable groups have been reduced (directly*) - description of types and evidence of effective usage of accountability mechanisms to address violation of rights (directly*) - whether or not legal frameworks are in place to promote, enforce and monitor equality and non- discrimination on the basis of sex (directly*) - number of recorded cases of discrimination and violence against key populations, women and girls in relation to SRHR issues (directly*) - number of key populations reached by communities and advocacy networks with SRHR and HIV/AIDS information (directly*) - number of key populations having received SRHR and HIV/AIDS services (directly*)
<p>2) Better public and private health care for family planning, pregnancies and</p>	<ul style="list-style-type: none"> - coverage of DTP3 immunisation - % of HIV infected pregnant women receiving PMTCT 	<ul style="list-style-type: none"> - number of health workers trained in ANC and PNC, safe delivery and abortion care (indirectly**) - % of births attended by skilled health personnel (indirectly**) 	<ul style="list-style-type: none"> - number of health workers trained in ANC and PNC, safe delivery and abortion care (directly*) - % of births attended by skilled health personnel (directly*)

<p>childbirth, including safe abortions.</p>	<p>– <i>maternal mortality ratio</i></p>	<p>– number of comprehensive safe (post-)abortion care services provided (indirectly**) – type and number of initiatives to promote private sector involvement in SRH and HIV/AIDS services (indirectly**) – coverage of the Minimum Initial Service Package, including basic emergency obstetric care (BeMOC) (indirectly**)</p>	<p>– number of comprehensive safe (post-)abortion care services provided (directly*) – type and number of initiatives to promote private sector involvement in SRH and HIV/AIDS services (directly*) – coverage of the Minimum Initial Service Package, including basic emergency obstetric care (BeMOC) (directly*)</p>
<p>3) Better information and greater freedom of choice for young people about their sexuality.</p>	<p>– <i>adolescent birth rate (aged 10-14 years; aged 15-19 years) per 1,000 women in that age group</i></p>	<p>– number of youth who participate in policy and decision-making bodies and perceive their participation as meaningful (indirectly**) – % of young people reached with comprehensive, correct information on sexuality, HIV/AIDS, STIs, pregnancy and contraception (indirectly**) – number of health facilities that adopt and implement youth-friendly SRHR and HIV/AIDS services – % of women (20-24yr) who were married or in union before ages 15 and 18 (indirectly**) – % of girls and women (15-49yr) who have undergone FGM/C (indirectly**) – condom use by young people at last high-risk sex (indirectly**)</p>	<p>– number of youth who participate in policy and decision-making bodies and perceive their participation as meaningful (directly*) – % of young people reached with comprehensive, correct information on sexuality, HIV/AIDS, STIs, pregnancy and contraception (directly*) – number of health facilities that adopt and implement youth-friendly SRHR and HIV/AIDS services – % of women (20-24yr) who were married or in union before ages 15 and 18 (directly*) – % of girls and women (15-49yr) who have undergone FGM/C (directly*) – condom use by young people at last high-risk sex (directly*)</p>
<p>Objective 4 (Water): Contribute to ensuring availability and sustainable management of water and sanitation for all (SDG 6)</p>			
<p>Long-term impact at programme level (link with Water ToC)</p>			

Long term impact	Long term impact indicator	Medium-term impact indicator (at country level)	Outcome indicator (at project level)
<p>1) Water is used sustainably and equitably, ensuring the needs of all sectors and the environment</p>	<p>- Number of people having enough water of good quality throughout the year</p>	<ul style="list-style-type: none"> - number of river basin delta organisations supported on water management (indirectly) - number of professionals trained in water management (indirectly) - number of people benefitting from operational plans for integrated water resources management of basins (indirectly) - area of basins with an operational plan for integrated water resources management (indirectly) - number of people supported for protection against floods (indirectly) - number of people supported for improved irrigation and drainage (indirectly) - number of people supported for improved watershed protection (indirectly) - number of people supported for safe drinking water and adequate sanitary facilities (indirectly) 	<ul style="list-style-type: none"> - number of river basin delta organisations supported on water management (directly) - number of professionals trained in water management (directly) - number of people benefitting from operational plans for integrated water resources management of basins (directly) - area of basins with an operational plan for integrated water resources management (directly) - number of people supported for protection against floods (directly) - number of people supported for improved irrigation and drainage (directly) - number of people supported for improved watershed protection (directly) - number of people supported for safe drinking water and adequate sanitary facilities (directly)

* Direct: target group (undernourished people / farm holders) who have been reached by the new or revised outreach programme or have followed the new or revised curricula / short courses.

** Indirect: target group (undernourished people / farm holders) reached by graduates of the new or revised curricula / short courses.

Medium-term impact	Indicator
<p>I. Education system (TVET/HE) is of good quality, relevant and accessible</p> <ul style="list-style-type: none"> - delivers high skilled graduates - produces relevant knowledge - more inclusive educational environments (widened participation) 	<ul style="list-style-type: none"> → <i>Education</i> <ul style="list-style-type: none"> - number of knowledge institutions that perform better - number of graduates (self) employed (male/female) - number of jobs supported/created - number of revised/newly developed curricula in NL and/or Southern partner organisation that integrate research results - number of knowledge institutions with an increased participation of students from minorities - education system represents needs of labour market/gender - graduate satisfaction (employed/non employed/self-employed) (male/female) - employers' satisfaction over the graduates' skills and knowledge → <i>Research</i> <ul style="list-style-type: none"> - number of research results/contributions translated into policy advice at national, regional or local level → <i>Society</i> <ul style="list-style-type: none"> - number of beneficiaries reached with knowledge, skills and techniques (indirectly**) - number of services to community (indirectly**) - number of businesses co-investing in activities - number of improvements in (inter)national policies/laws (indirectly**)
<p>II. Partnerships between persons and organisations are inclusive and sustainable</p>	<ul style="list-style-type: none"> - number of MoUs or other types of formal collaboration agreements exist 1, 3, 5 years after end of project - number of joint (research) proposals submitted and financed - number of joint publications - number of joint/double degrees offered - number of academic staff of partner country still cooperates with academic staff of other education organisation(s) - number of scholarship holders that became members of the alumni association of their host university (of applied sciences) (male/female) (NL/other) - number of Dutch training education organisations that have improved their training methods - number of staff of Dutch training education organisations that have gained new insights and ways of working
<p>III. Organisations key to (sectoral) inclusive development of partner countries are</p>	<ul style="list-style-type: none"> → <i>Individual</i> <ul style="list-style-type: none"> - % of alumni who state that they have applied in their workplace the knowledge and skills gained from the interventions - % of alumni promoted to more strategic positions within their own organisation or other organisation

<p>strengthened by inflow of enhanced workforce</p>	<ul style="list-style-type: none"> - narratives from alumni on policy and procedural changes, inclusive development, and innovations as a result of interventions → <i>Organisational</i> - % employer satisfaction on suitability of the training for the organisation - % of alumni still employed by the organisation that nominated them - % employers that states that their department/organisation has become more effective because of OKP intervention - % of alumni who have applied the acquired knowledge and skills within their working environment - testimonials from employers on organisational changes (implemented procedure/techniques, work ethic etc. due to trained staff (critical mass))
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Outcomes at project level	
Outcome	Indicator
<p>A. TVET/HE organisations (in the selected partner countries and in NL) perform better their core tasks, firmly embedded in their environment, in line with country/regional specific labour market needs & aiming at inclusiveness</p>	<ul style="list-style-type: none"> → <i>Education</i> - number of knowledge institutions supported directly - increased participation of students from minorities - number of teachers/ trainers have gained qualitative and relevant knowledge and skills to develop and offer the revised/developed study programmes (# trainers trained, male/female/minorities/PhD/MSc/short training) - number of graduates delivered (male/female/minorities degree/non-degree) (directly*) - number of curricula for degree, non-degree and short courses revised/newly developed - number of students enrolled in revised/newly developed study programmes (male/female) - student satisfaction (male/female) → <i>Research</i> - number of research strategies/agenda/methodologies revised/strengthened and implemented - number of relevant publications (level, gender, inclusion) - number of relevant innovations → <i>Society</i>

	<ul style="list-style-type: none"> - number of beneficiaries reached with knowledge, skills and techniques (directly*) - number of MoUs or other types of collaboration agreements signed (education, private, public, surrounding community) (in NL, own country, other country) - number of students performing an internship or practical work (male/female) - number of SMEs supported - number of improvements in (inter)national policies/laws (directly*) - <i>Organisational</i> - improved gender equality and gender awareness in the knowledge institution - number of organisations revised/developed and implemented a strategic plan - number of organisations revised/developed institutional mechanism for quality assurance - number of organisations with a revised/developed system to register and monitor its alumni - number of organisations have developed and implemented a system to regularly survey the satisfaction of students, short courses participants, graduates and/or employers - number of facilities established/strengthened (laboratories, libraries, resource centre, practical application unit, living lab) - % of men and women in management of faculty/department - % of men and women of teaching staff of faculty/department - number of organisations with improved policies or procedures to encourage access to education of minorities - diversity in management and teaching staff (i.e. balance junior/senior staff, women/men, minorities) - number of organisations with policies and procedures to ensure an environment which is gender sensitive - number of organisations with policies and procedures to ensure an environment which is conducive for minorities
<p>B. Enhanced knowledge and skills of individuals and organisations (in partner countries and in the NL) in line with country/regional specific labour market needs &</p>	<p>→ <i>Individual</i></p> <ul style="list-style-type: none"> - number of scholarship holders*** that have successfully completed course/training (level/male/female/minorities) - % scholarship holders***/alumni satisfaction - % of scholarship holders***/alumni employed post-study within region and same employer (men/women) - % of scholarships awarded to women - % of scholarships awarded to minorities - % of quota for scholarships for women - % of quota for scholarships for minorities - number of stimulating measures/extra facilities aimed at preparation, supervision and aftercare of female candidates

<p>aiming at inclusiveness</p>	<ul style="list-style-type: none"> - number of stimulating measures/extra facilities aimed at preparation, supervision and aftercare of minorities - % alumni who state that they have acquired new knowledge and skills; e.g. problem solving, effective communication - % alumni who are promoted to a more strategic position post-study - changes in personal, academic and professional attitudes and attributes through training and education programmes - improved gender equality and gender awareness in the workplace <p>→ <i>Organisational</i></p> <ul style="list-style-type: none"> - number of organisations strengthened by individual and/or group training (private/public) - % of alumni who have applied the acquired knowledge and skills within their working environment - employers satisfaction on the added value of return scholars to the initial working environmental - number of organisations with institutional mechanism for quality assurance - number of organisations developed and implemented a gender strategy
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*** Scholarship holders: for the purpose of the Orange Knowledge Programme Tailor-Made Training participants in Tailor-Made Trainings are also considered scholarship holders.