

## Annex 1: Results Matrix of the module

**Name of the TC module**  
**Nile Delta Water Management Programme**

**Country**  
**Egypt**

**Project number**  
**2019.2006.5**

**Results matrix created on**  
**28.05.2021**

**Project lifetime**  
**07/2021 until 06/2024**

| Objectives   | Indicators   | Means of verifications  | Assumptions                 |
|--|--|---|-----------------------------|
| <p><b>Programme objective</b><br/>           Through integrated water re-source management with special attention to the effects of climate change and with the involvement of local civil society water security and efficiency is increased in a region of Egypt and the local and regional conflict potential is reduced.</p> | <p><b>Programme objective indicator 1</b><br/>           5.850.000 persons are supported through the improvement of irrigation and drainage channels<br/>           Baseline value: 0 persons<br/>           Target value: 5.850.000 persons</p>   | <p>Reports of the Ministry for Water and Irrigation (MWRI); Reports of the implementing consultants.</p>  | <p>Not to be filled out</p> |
|  | <p><b>Programme objective indicator 2</b><br/>           A contribution has been made to increase the agricultural productivity of smallholder farmers in TC intervention areas at the end of selected irrigation channels.<br/>           Baseline value: Z = productivity in tons/feddan in 2020 (Z is measured for the following crops: rice, maize, cotton)<br/>           Target value 2023: Z + 5%</p> | <p>Possible sources: Analysis of aerial photographs, satellite images of MALR, or analyses of the surveys by the newly introduced "Smart card" / "Economic Sector" or specific surveys.</p> |                             |
|  | <p><b>Programme objective indicator 3</b><br/>           263,000 people have received a new or improved access to sanitation and 88,500 people have received new/improved access to sanitation through created capacities.<br/>           Baseline value: 0<br/>           Target value: 263.000/88.500</p>  | <p>Reports of the HCWW; reports of the implementing consultants</p>   |                             |

| Objectives   | Indicators   | Means of verifications   | Assumptions  |
|--|--|--|--|
|  | <p><b>Programme objective indicator 4</b><br/>                     Reduction of technical and administrative water losses in 6 governorates in the Nile Delta.<br/>                     Baseline value: Technical losses (water volume in cubic meter per month) and administrative losses (collection) are on average 30%.<br/>                     Target value: Reduction of technical and administrative water losses (combined) by 10%.</p> | <p>Reports of the <i>Affiliated Companies/ Consultants</i></p>   |  |
| <p><b>Module Objective</b><br/>                     Framework conditions for an efficient use of water in water supply and wastewater management as well as in irrigated agriculture in the Nile Delta are improved.</p> | <p><b>Module objective indicator 1</b><br/>                     The water loss information provided by the HCWW for the national water strategy is based on measured data from ca. 100 districts [DMAs].<br/>                     Baseline value: 0 (data is not recorded in a structured manner)<br/>                     Target value: Provided information on water losses is based on measured data from 100 districts (2022)</p>            | <p>Analysis of the documentation of the information prepared by the HCWW for the water strategy in the year 2022, among others with regard to the number of districts, sources, method of measurement/survey methodology and plausibility.</p> | <p>The political framework ensures sufficient continuity to implement the measures required to achieve the project's objectives.</p> |
|  | <p><b>Module objective indicator 2</b><br/>                     In 3 out of 25 ACs, the verification of the achievement of targets for efficient water use is based on the monitoring system of business plans.<br/>                     Baseline value: 0 (monitoring system not yet established)<br/>                     Target value: Review of the target achievement based on monitoring system in 3 out of 25 ACs. (2023)</p>             | <p>Evaluation of the yearly progress reports by the ACs to the HCWW on the achievement of targets and comparison with the information from the monitoring system of the ACs (evaluation in year 2023)</p>                                      |  |
|  | <p><b>Module objective indicator 3</b><br/>                     1,000 out of estimated 2,000 smallholder farmers have used the new services on the improvement of water efficiency offered by 18 agricultural cooperatives in 4 governorates.</p>  | <p>Sample survey of smallholder farmers on the use of services to improve water use efficiency at the farm level (survey to be conducted in early 2024).</p>   |  |

| Objectives  | Indicators  | Means of verifications   | Assumptions   |
|---|---|--|---|
|   | Baseline Value: 0 (cooperatives are not offering new services)<br>Target value: 1.000 small holder farmers (2023)   |  |   |
|   | <p><b>Module objective indicator 4</b></p> 20,000 out of the 80,000 smallholder farmers that have been advised in 4 governorates confirm with examples that they have applied the agricultural extension recommendations for efficient water use.<br>Baseline value: 15,000 smallholder farmers have been advised, no confirmation on application.<br>Target value: 20,000 smallholder farmers confirm the application (2024) | Sample survey among smallholder farmers on the application of the recommendations (e.g., on climate resilience of varieties, seeds, water-saving cultivation patterns, agricultural practices) distributed via different channels (Farmer Field Schools, digital media, cooperatives) (survey mid of 2024) |   |
|   | <p><b>Module objective indicator 5</b></p> 160 women groups in 4 governorates have applied 1 out of 5 promoted water efficient measures for the improvement of their income.<br>Baseline value: 20 women groups<br>Target value: 160 women groups (2024)  | Evaluation of monitoring reports from the agricultural extension service on the use of water-efficient measures (e.g., hydroponics with and without fish culture, barley or mushroom cultivation on rice straw) by women's groups (evaluation mid-2024).   |   |
| <p><b>Output 1</b></p> Management capacities of water and wastewater ACs for an efficient water use are strengthened. | <p><b>Output indicator 1.1</b></p> In the business plans of 3 ACs, company-specific targets for more efficient water use are defined.<br>Baseline value: 0 (currently no business plans)<br>Target value: Business plans of 3 ACs (2022)  | Yearly evaluation of the business plans of ACs with regard to defined targets for efficient water use (e.g., water losses reduction, fee collection, consumption measurement, reduction of illegal connections) (evaluation starting as of 2022)   | Responsibilities of the HCWW and the ACs for water supply and wastewater management remain unchanged.<br><br>The role of the HCWW as key partner for the implementation of measures and |

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|---|--|--|---|
|   | <p><b>Output indicator 1.2</b><br/>15 out of 75 participants in the leadership development programme of ACs are female professionals.<br/>Baseline value: 0 (no leadership development programme of ACs existing)<br/>Target value: 15 out of 75 participants (2024)</p>   | <p>Gender-specific evaluation of the lists of participants in the management development program (evaluation 2024)</p>   | <p>the upscaling of approaches is continuously met by support from the MoHUUC.<br/><br/>Political and economic conditions (such as subsidy policies, water tariffs, energy costs) continue to provide incentives to increase the operational and energy efficiency of ACs.</p>  |
| <p><b>Output 2</b><br/>Measures for efficient water use and climate-sensitive operation of water and wastewater systems have been initiated by ACs.</p> | <p><b>Output indicator 2.1</b><br/>Commercial and physical water losses in 2 industrial areas (each with estimated 40 companies) and 18 communities (with a total of estimated 100,000 customers) [DMAs/DMZs] have been reduced by an average of 15%.<br/>Baseline value: estimated 45% of commercial and physical water losses (combined).<br/>Target value: reduction by an average of 15% to estimated 30% commercial and physical water losses (combined) (2024)</p> | <p>Verification of the achieved loss reduction based on an evaluation of meter readings and fee revenues by the ACs in the municipalities and industrial areas before and after implementation of the measures (verification 2024).</p>  | <p>The political and structural framework conditions as well as the financial and personnel capacities of the MALR ensure/allow an expansion of the measures.<br/><br/>Agricultural cooperatives are ready and have the necessary resources to expand their services in accordance with the new law for cooperatives.<br/><br/>Political stakeholders from the MALR and MWRI support the cooperation and coordination between their departments at district and governorate levels.</p> |
|   | <p><b>Output indicator 2.2</b><br/>8 out of 25 ACs have used the <i>Energy Decision Support System (EnDSS)</i> to identify measures in their annual energy efficiency plans.<br/>Baseline value: 0 (EnDSS not yet operational)<br/>Target value: 8 out of 25 ACs (2023)</p>  | <p>Analysis of the yearly energy efficiency plans of the ACs according to E-DSS results (analysis starting as of 2023)</p>   | <p>The legal and political framework conditions continue to allow the inclusion of civil society organisations (e.g. women groups) in project activities.</p>   |
| <p><b>Output 3</b><br/>The range of advice and services for smallholder farmers on water-saving cultivation practices has been improved.</p>            | <p><b>Output indicator 3.1</b><br/>10 extension programmes with recommendations on water-saving cultivation practices are jointly developed by the agricultural extension service and research centres of MALR for dissemination via different information channels in 4 governorates.</p>   | <p>Technical evaluation of the documentation of seasonal recommendations (approx. 2 per growing season) of the agricultural advisory service and the research centres, e.g., regarding climate resilience of varieties, seeds, water-saving cultivation patterns and agri-</p> |   |

| Objectives  | Indicators   | Means of verifications  | Assumptions |
|---|--|---|-------------|
|   | Baseline value: 2 extension programmes with recommendations<br>Target value: 10 extension programmes with recommendations (2024)   | cultural practices on the basis of defined criteria (seasonal measurement/survey from 2022).  |             |
|   | <b>Output indicator 3.2</b><br>18 agricultural cooperatives each offer 2 additional services for water-efficient farming practices to their member farmers.<br>Baseline value: 0 (no additional services)<br>Target value: 18 agricultural cooperatives with each 2 additional services (2023)   | Evaluation of reporting by cooperatives and randomised checks of services offered (e.g., repair centres and spare parts procurement for irrigation infrastructure, joint marketing of agricultural products, advisory services for farms) (measurement/survey end 2023) |             |
| <b>Output 4</b><br>Innovative measures and digital applications for efficient water use by smallholder farmers have been initiated. | <b>Output indicator 4.1</b><br>During the cropping season, 10 out of the total 25 soil and water departments at district level in 2 governorates have submitted 14-day geo-referenced maps with current cropping patterns to the district-level offices of the MWRI for demand planning.<br>Baseline value: 4 out of 25 departments<br>Target value: 10 out of 25 departments (2024) | Evaluation of the transmission protocols and analysis of the maps with regard to the cropping patterns of the farms (measurement/survey 2024).  |             |
|   | <b>Output indicator 4.2</b><br>50 smallholder farmers are implementing climate-sensitive and water-efficient farming practices in 2 demonstration sites.<br>Baseline value: 0 (demonstration sites have not been established)<br>Target value: 50 farmers in 2 sites (2023)  | Analysis of the project documentation by the agricultural extension service on demonstration site operations with estimated at 20 hectares (e.g., drip and sprinkler systems, salt concentration monitoring, use of solar-powered pumps) (measurement 2023).            |             |
| <b>Output 5</b>   | <b>Output indicator 5.1</b>  | Review of the guideline with agreements on gender-specific campaigns.   |             |

| Objectives   | Indicators  | Means of verifications  | Assumptions |
|--|---|---|-------------|
| The participation of civil society and women groups in water use efficiency has been strengthened. | 1 Guideline for gender-specific water-saving campaigns is agreed upon between NGO-Federation and the HCWW's Civic Engagement Department.<br>Baseline value: 0 (no guideline for campaigns)<br>Target value: 1 guideline (2023)  | Analysis of documents on the coordination process between the federation and the HCWW (analysis 2022)   |             |
|  | <b>Output indicator 5.2</b><br>160 women groups in 4 governorates have been qualified by the agricultural extension service on the use of water efficient measures to improve their income.<br>Baseline value: 20 women groups<br>Target value: 160 women groups (2024) | Evaluation of the documents on the training measures (e.g., hydroponics with and without fish farming, barley or mushroom cultivation on rice straw) with regard to content and number of participants (evaluation 2024). |             |

| Outputs         | Key activities in Outputs   | Assumptions   |
|-----------------|---|---|
| <b>Output 1</b> | <ul style="list-style-type: none"> <li>Development of a monitoring system for the management (Chairman and general directors) of the ACs with key operational indicators derived from the business plans of the ACs, combined with data quality assurance.</li> <li>Implementation of a gender-specific leadership development program for selected professionals from all ACs.</li> <li>Development of guidelines for the contract management (minimum requirements and standard specifications for different types of contracts) and implementation of training measures for professionals from the contract departments of ACs and of the New Urban Communities Authority (NUCA).</li> <li>Development of standard operating procedures for warehouses, including implementation of water integrity measures to improve internal controls, e.g., introduction and application of QR codes for ACs and HCWW.</li> </ul> | <p>Esp. the smaller ACs have sufficient personnel resources to implement the measures.</p> <p>Water and wastewater companies and NUCA allow insight into contracts for private sector participation, e.g., sewage sludge use and energy generation from sewage sludge.</p> <p>NUCA accepts the consulting and training offer on contract management and operation of water desalination plants.</p> <p>HCWW and ACs continue to support the consistent implementation of processes for the reduction of corruption risks.</p> |
| <b>Output 2</b> | <ul style="list-style-type: none"> <li>Upscaling approaches for the reduction of physical and commercial water losses in communities and industrial areas.</li> <li>Application of the digital energy efficiency decision support system [EnDSS] to identify energy saving measures in 8 ACs, including action plans for energy saving and certification of additional energy managers.</li> </ul>  | <p>Cooperatives take on additional tasks based on the new cooperatives law and can implement financially viable business models.</p> <p>Agricultural extension services and agricultural research centers can agree on common recommendations for smallholder farms.</p>  |

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|------------------------|--|--|
|                        | <ul style="list-style-type: none"> <li>• Promote the use of sewage sludge in selected ACs (e.g., private sector participation, twinning, model contracts).</li> <li>• Develop and implement training modules for operation and maintenance of drinking water desalination plants (ACs and NUCA).</li> <li>• <i>Consolidation of the digital Energy, Water Supply and Wastewater Decision Support Systems, including financial modules.</i></li> <li>• <i>Capacity building for junior technicians on O+M to qualify for world skills competition.</i></li> </ul>   |  |
| <p><b>Output 3</b></p> | <ul style="list-style-type: none"> <li>• Development of extension modules and audio-visual materials on water-saving cultivation practices, including crop selection, irrigation techniques and requirements, cultivation methods, greenhouses, etc.</li> <li>• Dissemination of extension messages to smallholder farmers through FFS, training of key farmers, and social media campaigns using Facebook and WhatsApp.</li> <li>• Develop bylaws and business models for district and village level cooperatives for services to smallholder farmers (e.g., maintenance, repair and spare parts supply for irrigation infrastructure including solar pumps, greenhouses, marketing).</li> <li>• <i>Introduction of additional services in 6 district- and 12 village level cooperatives in line with business models</i></li> </ul>  |  |
| <p><b>Output 4</b></p> | <ul style="list-style-type: none"> <li>• Enhance the digital capacity of extension centres and GIS units at the district level, including training agricultural extension agents in the operation of modernized irrigation systems, digital applications, and social media.</li> <li>• Train pump operators and staff of Water User Associations, cooperatives, technicians on the operation and maintenance of the improved irrigation infrastructure.</li> <li>• Improve and upscale coverage with digital maps (irrigation infrastructure, cropping patterns, soil and groundwater salinity) and provision of sensors to measure salinity of water and soil.</li> <li>• Strengthen exchange formats for water demand planning between the MALR and the MWRI at the district and governorate levels.</li> <li>• Establishment of demonstration sites with water-efficient irrigation methods (e.g., drip and sprinkler systems, monitoring of salinity in water and soil, solar-powered pumps).</li> </ul> |  |

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|-----------------|--|--|
| <b>Output 5</b> | <ul style="list-style-type: none"><li>• Design and implementation of awareness campaigns, including water conservation, for public outreach with a special focus on women, youth as well as children and in collaboration with ACs, the NGO-Federation and the HCWW's Civic Engagement department.</li><li>• <i>Support and capacity building for the Federation of Water NGOs with regard to coordination of activities of its members in cooperation with the civic engagement departments of HCWW and ACs.</i></li><li>• Training of women groups by agricultural extension centres and FFS on income-generating water-saving farming practices (e.g., hydroponics with and without fish farming, barley or mushroom farming on rice straw).</li><li>• Installation of demonstration units for the income-generating water-saving farming practices for women groups.</li><li>• Training and campaigns to enable smallholder farmers to use the national complaint management system.</li></ul> |  |
|-----------------|--|--|