



Concept Note

“Potential Regional Activities related to Decentralized Water Management (DcWM) in the Partner Countries”

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THE SWIM AND H2020 SUPPORT MECHANISM PROJECT (2016-2019)

The SWIM-H2020 SM is a Regional Technical Support Program that includes the following Partner Countries (PCs): Algeria, Egypt, Israel, Jordan, Lebanon, Libya, Morocco, Palestine, [Syria] and Tunisia. However, in order to ensure the coherence and effectiveness of Union financing or to foster regional co-operation, eligibility of specific actions will be extended to the Western Balkan countries (Albania, Bosnia Herzegovina and Montenegro), Turkey and Mauritania. The Program is funded by the European Neighborhood Instrument (ENI) South/Environment. It ensures the continuation of EU's regional support to ENP South countries in the fields of water management, marine pollution prevention and adds value to other important EU-funded regional programs in related fields, in particular the SWITCH-Med program, and the Clima South program, as well as to projects under the EU bilateral programming, where environment and water are identified as priority sectors for the EU co-operation. It complements and provides operational partnerships and links with the projects labelled by the Union for the Mediterranean, project preparation facilities in particular MESHIP phase II and with the next phase of the ENPI-SEIS project on environmental information systems, whereas its work plan will be coherent with, and supportive of, the Barcelona Convention and its Mediterranean Action Plan.

The overall objective of the Program is to contribute to reduced marine pollution and a more sustainable use of scarce water resources. The Technical Assistance services are grouped in 6 work packages: WP1. Expert facility, WP2. Peer-to-peer experience sharing and dialogue, WP3. Training activities, WP4. Communication and visibility, WP5. Capitalizing the lessons learnt, good practices and success stories and WP6. Support activities.



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1. INTRODUCTION

1.1 BACKGROUND

During the SWIM-H2020 SM Fact Finding (FF) missions in 2016, and in the follow-up expression of interest of the Partner Countries' (PCs) National Focal Points (NFPs) regarding the expert facility activities (WP1 of the SWIM-H2020 SM workplan), decentralized management (DcWM) emerged as one of the priority themes for the region. More specifically, Egypt, Lebanon, Morocco and Tunisia requests under the Expert Facility (WP1) relate directly to decentralized water management aspects, namely: (i) EFS-EG-1: Improve Watershed Management (decentralized level), local governance and capacity building; (ii) EFS-LB-1: IWRM at the river basin scale, with a focus on capacity building and implementation aspects, (iii) EFS-MO-1: Improve River Basin Management (supporting decentralization), local governance and participatory approaches in ways compatible to the WFD, through interlinked activities, and (iv) EFS-TN-1: Support the development of good governance practices at the local level (decentralized water management).

Along these lines, and as part of its workplan, SWIM-H2020 SM has also launched a series of Regional Activities (REG-4, REG-5, ST-5, P2P-7, P2P-8) on "Decentralized Water Management (DcWM) in the Partner Countries". The current Concept Note aims at framing the regional activities that can be undertaken, and is based on the discussions and findings of the "REG-4: 1st Regional Training on DcWM" held in Brussels, Belgium on 24-25 July 2017, which had the specific theme "Sharing of experiences from the implementation of the EU Water Framework Directive (WFD) as an instrument for promoting decentralized water management".

In many developed and developing countries the limitation of centralized water management models is becoming increasingly evident, and thus there is a shift towards decentralized water management schemes and approaches, owing to the capacity of decentralized systems to enhance water security and minimize environmental degradation (Domenech, 2011¹).

Decentralized systems are generally understood as being localized water supply and/or wastewater systems that are sourced close to the point of use (Cook et al., 2009²). A decentralized approach that provides water and wastewater services can involve an amalgam of systems at the onsite (or allotment) scale and those at the cluster or development scale. Decentralized systems may or may not be integrated with a centralized system. In a decentralized system, water supply can be covered by a portfolio of local water sources including stormwater, rainwater, wastewater and greywater. These local water sources, which have traditionally been treated as «nuisances» in urban areas, are nowadays highly recognized as valuable resources (PAP/RAC, 2007³).

¹ Domenech, L. 2011. Rethinking water management: From centralised to decentralised water supply and sanitation models. Documents d'Anàlisi Geogràfica 2011, vol. 57/2, pp. 293-310

² Cook, S., Tjandraatmadja, G., Ho, A., Sharma, A. 2009. Definition of Decentralised Systems in the South East Queensland Context. Urban Water Security Research Alliance Technical Report No. 12.

³ PAP/RAC, 2007. «Integrated Coastal Urban Water System Planning in Coastal Areas of the Mediterranean». Volume I. Principles and Planning. Split: PAP/RAC.

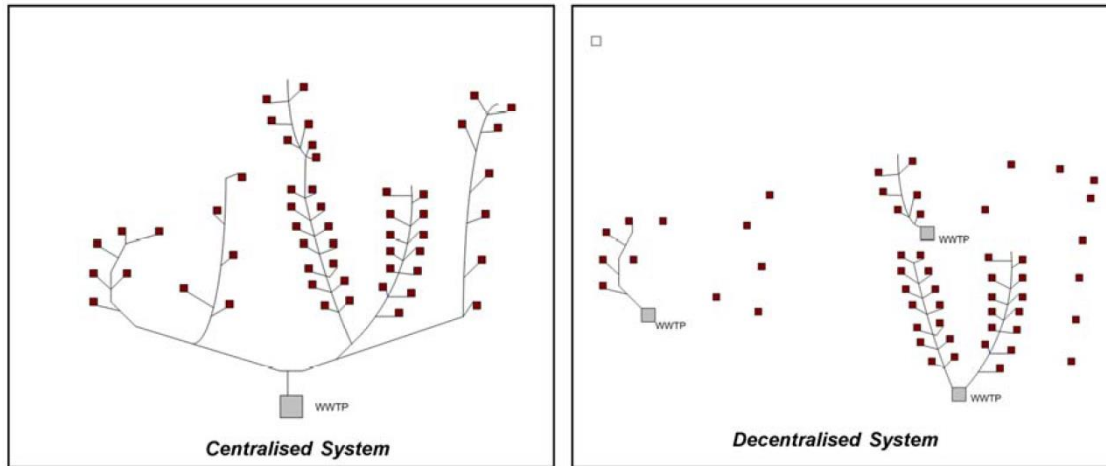


Figure 1.1: Centralized approach versus decentralized approach. (Source: adapted from Geisinger and Chartier, 2005⁴).

People and governments may perceive DcWM in different ways, e.g. the management of water resources (quantity and quality) at the local/ river basin level or the on-site water supply systems managed by individuals. DcWM may involve different scales: onsite scale, cluster or development scale, distributed systems (Cook et al., 2009²):

- Onsite scale: Treatment technologies and/or management systems that provide water and wastewater services at the scale of an individual lot (Mitchell et al. 2008), e.g. rainwater tanks, greywater recycling. These systems are owned by allotment holders.
- Cluster or development scale: These systems generally operate under some form of common ownership model and service two or more dwellings or a whole development, with water sourced or wastewater treated in proximity to the dwellings (Geisinger and Chartier, 2005).
- Distributed systems. These systems generally provide services to very large developments and the services are owned and operated by water utilities.

The implementation of decentralized water systems requires a series of changes in the formal and informal water management institutional framework. The top-down model associated to centralized approaches is replaced by a multi-level governance model that involves a higher number of actors and the creation of new inter-relations between actors. (Domenech, 2011¹). These new institutional arrangements can lead to the atomization of the power held over the water cycle by governments and large water supply companies and to its redistribution between civil society stakeholders, and small companies (Domenech, 2011¹).

Achieving the transition to DcWM models, and the implementation of decentralized water management alternatives, requires incremental changes to take place at different levels and sectors, and numerous pre-conditions to be met: public acceptability of users and other social actors needs to be guaranteed; costs need to be reasonable and recoverable; health, technical and environmental risks need to be acceptable; new regulations and incentives need to be made properly designed; social learning processes and adaptation capacities need to be developed (Domenech, 2011¹). It is understood that although governments are called upon to assume a leading role in this transition

⁴ Geisinger, D. and Chartier, G. (2005) Managed onsite/decentralised wastewater systems as long term solutions, *Clearwaters*, 35, pp. 6-11.



process, the active involvement of the local actors and key stakeholders is equally critical in order to materialize and sustain this transformation.

Table 1.1: Main features of centralized and decentralized water management (Source: Domenech, 2011¹)

Factor	Centralised water management	Decentralised water management
Scale	Large scale systems.	Small scale systems (domestic).
Type of water sources	Distant and local water sources.	Local water sources.
Governance	Top-down governance model.	Multi-level governance model.
Ownership	Water supply and sanitation infrastructure is owned by the public sector.	Water supply and sanitation systems are owned by private individuals.
Control of the water cycle (power)	Controlled by the public sector and/or private companies.	Controlled by private individuals.
Participation	Very limited public participation in water management.	Active public participation in water management.
Awareness	Citizens are alienated from the water cycle.	Citizens become more aware of the water cycle.
Cost sharing	Highly subsidised.	Full cost recovery.
Water quality	Very high water quality for all uses.	Different water qualities and fit-for-purpose water use.
Health risks	Health risks are very controlled.	Risk management by the individuals is required.
Environmental impacts	Environmental impacts are significant.	Environmental impacts are reduced.
Social conflicts	Dam construction and water transfers usually give rise to social conflicts between regions.	Social conflicts are less likely.
Resilience capacity	Limited adaptation capacity to extremesituations.	Enhanced capacity of adaptation to different situations.

1.2 OBJECTIVES OF THE CONCEPT NOTE

The activities to be undertaken by SWIM-H2020 SM related to DcWM cover a wide spectrum of themes from science to policy, and cut across the project's Work Packages of the Technical Assistance services: Expert Facility, peer-to-peer experience sharing and dialogue, training activities, etc. The current concept note aims at:



- Identifying relevant regional capacity building activities (training workshops, peer-to-peer, study tours) related to Decentralized Water Management (DcWM) based on the input received by the PCs during the “REG-4: 1st Regional Training on DcWM held in Brussels, Belgium on 24-25 July 2017, which had the specific theme “Sharing of experiences from the implementation of the EU Water Framework Directive (WFD) as an instrument for promoting decentralized water management”, as well as based on input provided at a national level by the project countries as requested by the project for all Peer to Peer activities under the project.
- Possible grouping of the identified activities and prioritization of the DcWM regional activities on the basis of criteria, such as popularity, feasibility within the available resources, expected impact, etc.
- Suggesting a Roadmap for the implementation of the selected DcWM regional activities

2. REGIONAL ACTIVITIES ON DcWM

2.1 METHODOLOGY

The following steps have been followed in the current Concept Note in order to identify and prioritize relevant DcWM regional activities:

- Collection of written input (through Questionnaires) from the PCs touching on key issues related to the implementation of DcWM (ref. to Annex 6.3 in the REG-4 Workshop Report)
- Collection of written input and open discussion with PCs during the “REG-4: 1st Regional Training on DcWM” held in Brussels, Belgium on 24-25 July 2017, in order to jointly identify with them a list of potential DcWM regional activities linked to their priority needs (ref. to Table 2.2)
- Subsequent collection of written input from the PCs National Focal Points (NFPs) on priority topics in relation to peer-to-peer (P2P) regional activities on DcWM (ref. to Table 2.2)
- Analysis of the objectives and expected outputs of the identified regional activities, possible grouping and prioritization of the DcWM regional activities on the basis of criteria, such as popularity, feasibility within the available resources, expected impact, etc.

Table 2.1: DcWM regional activities identified by the PCs during the “REG-4: 1st Regional Training on DcWM”, Brussels, 24-25/07/2017”

Country	Peer-to-Peer “Demand”	Peer-to-Peer “Offer”	Suggested Topics for the REG-5
ALGERIA	<ul style="list-style-type: none"> ▪ Elaborating guidelines for implementing DcWM at the basin level ▪ EU experiences in getting civil society involvement ▪ River restoration of water 	<ul style="list-style-type: none"> ▪ Masterplans on water resources quantity management (supply and resupply of the resources, better balance between demand and supply taking 	<ul style="list-style-type: none"> ▪ Setting out the scope of protection of surface water bodies, delineation of protection zones for surface water bodies ▪ Developing a GIS connected to water management at the national



	<p>courses</p>	<p>into accounts all dams, water transfers, reuse of wastewater, etc.)</p> <ul style="list-style-type: none"> ▪ Experience of Agencies in collecting the fees for people not connected to the public agencies (i.e. mainly industries) 	<p>level</p> <ul style="list-style-type: none"> ▪ Role of NGOs in the Basin Councils ▪ Wastewater reuse (WWR) for agriculture (thresholds and standards, legislation) ▪ Setting up a project for Groundwater Contracts (commitment on quotas for groundwater abstractions)
<p>EGYPT</p>	<ul style="list-style-type: none"> ▪ Management of Water Information Systems with stakeholders and users' associations, for decision making at local level (i.e. not only for the governmental bodies, but also the from users' side). Link different systems at different scales to the decision-making and the higher-level system ▪ Modernization of irrigation systems (e.g. surface to drip systems). New systems/tools to support the modernization (incentives, cost recovery, financial mechanisms, awareness, but also technical tools of cost-effectiveness assessment) ▪ Assessment of the decentralization process itself with the purpose of re-adjusting: evaluation of the impact of decentralization, of the overall efficiency of the system and of the process (pros, cons), and of its effects on water resources, on humans, etc. ▪ Support to the Young 	<ul style="list-style-type: none"> ▪ How to include the decentralization into the national water policies and strategies ▪ How to include decentralization and participation into the Water Law and legislation. ▪ Participation of the civil society ▪ Groundwater issues, e.g. delineation of groundwater protection zones, methods for digging wells, etc. 	<ul style="list-style-type: none"> ▪ Public participation in the development of Programmes of Measures (PoMs) at the local and regional level ▪ Climate change and short-term protection (NGO representative)



	Professional Forum, capacity building on DcWM (NGO representative)		
JORDAN	<ul style="list-style-type: none"> ▪ Concepts & principles of DcWM ▪ Technical solutions at the local level ▪ Engagement and participation methods 	<ul style="list-style-type: none"> ▪ Technical expertise in GIS ▪ Groundwater Highland Forum (stakeholders' participation in implementing the groundwater management policies) ▪ Development of guidelines for the delineation of Groundwater protection zones using participatory approaches (engagement of stakeholder in the development of guidelines for protection zones) 	<ul style="list-style-type: none"> ▪ Technical solutions on non-conventional water resources and on Water Demand Management at the local level ▪ IWRM planning at the level of surface water basins
ISRAEL	<ul style="list-style-type: none"> ▪ Flood risk management at the local level, flood protection ▪ Public participation in the assessment of flood risk management 	<ul style="list-style-type: none"> ▪ Drought management at the basin scale ▪ Municipal Water management and wastewater treatment (WWT) at the local level 	<ul style="list-style-type: none"> ▪ Flood risk management and assessment at the local level ▪ Public participation in the assessment of flood risk management
LEBANON	<ul style="list-style-type: none"> ▪ Enhancement of decentralization through adaptation/ upgrading of the legislation (reform) ▪ National water Information systems ▪ Twinning with an EU country on the topic of water bodies' characterization and risk assessment and the WFD 	<ul style="list-style-type: none"> ▪ Water supply management guidelines for Business plans and Masterplans 	<ul style="list-style-type: none"> ▪ Groundwater management (incl. delineation and risk management of groundwater bodies) ▪ WFD: from administration to river basin management ▪ Initiation and development of National Water Information Systems
MOROCCO	<ul style="list-style-type: none"> ▪ Setting up a mechanism for participatory water management at the local/ decentralized level ▪ How to achieve water reuse of the treated waste water (TWW), more specifically 	<ul style="list-style-type: none"> ▪ The institutional and regulation frameworks to ensure participation of stakeholders and public consultation in the planning of IWRM ▪ Process for setting up 	<ul style="list-style-type: none"> ▪ Water reuse and decentralization ▪ Users' involvement in the protection of groundwater at the local level ▪ Methods for reservoirs' desiltation ▪ Desalination coupled with renewable energy



	<p>how to increase the awareness/ sensibilization and acceptability of the end-users</p> <ul style="list-style-type: none"> ▪ Ensure a water information system that is efficient, sustainable and accessible to all users, stakeholders and authorities 	<p>twinning projects related to the Water Framework Directive (WFD), and promoting/sharing the experiences of the WFD twinning project of Morocco</p>	
PALESTINE	<ul style="list-style-type: none"> ▪ Technical support for Joint Water Councils (strengthening of their technical experience/ capacity to run the Councils through webinars, discussions, meetings, etc.) ▪ Development of groundwater protection zones ▪ Funding a pilot project on motivation and awareness on DcWM ▪ Clarification of roles and responsibilities for IWRM at local level. Avoiding/managing overlaps and conflicts between the Water Resources Councils and the Municipalities, and the NGOs ▪ Operation and maintenance of groundwater wells ▪ Creating a web portal to share experiences and good practices from other countries (case studies, success stories, guidance documents, etc.) 	<ul style="list-style-type: none"> ▪ Conduct trainings on the subject of DcWM ▪ Practical experiences from the development and operation of the Joint Water Councils ▪ Exchange of data and information between stakeholders 	<ul style="list-style-type: none"> ▪ More in depth and practical hands-on training on DcWM topics, with practical exercises and case studies' analysis to be able to transfer the experiences back to their countries and train additional personnel. Focus on tools, and extend the duration of the workshop ▪ Water Footprint / Water accounts approach for water management
TUNISIA	<ul style="list-style-type: none"> ▪ Improving the legal framework for decentralization ▪ Participatory approach for 	<ul style="list-style-type: none"> ▪ Conflict resolutions and management ▪ Local conflict management on inter-regional water 	<ul style="list-style-type: none"> ▪ Capacity building in accrediting entities to drain projects, financing from the Green Climate Fund ▪ Institutional, technical and



	<p>local assessment of previous (past) projects</p> <ul style="list-style-type: none">▪ Technical solutions for "conventional" wastewater (tertiary treatment of WW)▪ Flood risk management, early warning systems for flood risk▪ Real-time monitoring system for dams, radar system to control precipitations▪ Global Information Systems and local technical solutions for implementing decentralized water databases (which can feed the national water information system NWIS)▪ Control of illegal wells, institutional support and equipment, and find a mechanism to prohibit the over-exploitation. Customization of the mechanism for Tunisia (maybe through awareness raising campaigns?)▪ Improve the efficiency of the irrigation water supply network in association with the local support, in particular awareness raising to avoid vandalism▪ Integrate climate change in strategic studies on water resources planning, using green funds	<p>allocation and water transfers (including management of the related social pressures, protests, etc.)</p> <ul style="list-style-type: none">▪ Mobilization of human resource of young people	<p>financial support for conventional water supervision and management</p> <ul style="list-style-type: none">▪ Sustainability assessment and evaluation of previous projects and strategies and their level of impact▪ Dam water management and exploitation (with training on new ways to control and supervise in real-time; software and hardware)
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Table 2.2: Requests for peer-to-peer on DcWM identified by the NFPs through the SWIM-H2020 SM Guidelines Table distributed on 7th August 2017

Country	Peer-to-Peer “Demand”	Peer-to-Peer “Offer”
ALGERIA		
EGYPT	Water Users’ Associations (WUAs) legislation	Decentralized water resources planning Formation of WUAs
JORDAN	Water Distribution System at Water Companies Concepts & principles of DcWM Technical and capacity building solutions at the local level Public engagement and participation methods	Development of guidelines for the delineation of Groundwater protection zones using participatory approaches (engagement of stakeholder in the development of guidelines for protection zones) Safe Drinking Water System (Water Treatment)
ISRAEL	Flood risk management at the local level, flood protection (request for a peer from Malta)	
LEBANON	Decentralized water resources planning	
MOROCCO	Decentralized Water Management	Decentralized water resources planning
PALESTINE	Decentralized water resources planning Strengthening Governance Reducing water systems’ failure risk; long term reliability, operation and maintenance costs, Appropriate costing, Quality of service indicators (measure and monitor the performance)	
TUNISIA	Governance at the local level	Water Users’ Associations (WUAs) legislative framework

2.2 ANALYSIS OF THE DCWM REGIONAL ACTIVITIES

In this section the DcWM regional activities identified by the PCs are analysed in detail. For each activity the PCs that have requested it, the type of the activity, its objective and output have been identified. Finally an expert ranking according to specific criteria (popularity, added value, expected impact, constraints) has been performed for the activities to conclude on “best candidate topics”.

2.2.1 Activity REG-5: On-site training on DCWM

During the REG-4 workshop topics of interest for the upcoming REG-5 have been collected by the PCs, as presented in Table 2.1. In this section a grouping and analysis of these topic/ sub-topics is presented (Table 2.3), in an effort to conclude on “best candidate topics” for REG-5 (ref. Table 2.4), on the basis of specific criteria (popularity, added value at the regional level, expected impact at the regional level, constraints).



Topic: Various topics for the REG-5 have been requested by the PCs (see tables below with topics 1-6)

Requested by: Algeria, Egypt, Jordan, Israel, Lebanon, Morocco, Palestine, Tunisia (all PCs)

Type of Activity: Workshop (REG-5)

Objective: Training of technical staff on selected topics related to DcWM, and further building on the regional activity REG-4

Output: Improved knowledge of the participants on the selected topics, improved technical capacity, knowledge propagation from the participants to their colleagues back home.

Table 2.3: Grouping of the suggested REG-5 topics

TOPIC 1:	
Public participation in DcWM	
Specific topic requested by the PCs	
Role of NGOs in the Basin Councils	ALGERIA
Public participation in the development of Programmes of Measures (PoMs) at the local and regional level	EGYPT
Public participation in the assessment of flood risk management	ISRAEL
Users' involvement in the protection of groundwater at the local level	MOROCCO
TOPIC 2:	
Groundwater issues	
Specific topic requested by the PCs	
Setting up a project for Groundwater Contracts (commitment on quotas for groundwater abstractions)	ALGERIA
Groundwater management (incl. delineation and risk management of groundwater bodies)	LEBANON
Users' involvement in the protection of groundwater at the local level	MOROCCO
TOPIC 3:	
Water Information Systems	
Specific topic requested by the PCs	
Developing a GIS connected to water management at the national level	ALGERIA
Initiation and development of National Water Information Systems	LEBANON
Water Footprint / Water accounts approach for water management	PALESTINE



TOPIC 4:

Use of non-conventional water resources at the local level

Specific topic requested by the PCs	
Wastewater reuse (WWR) for agriculture (thresholds and standards, legislation)	ALGERIA
Technical solutions on non-conventional water resources and on Water Demand Management (WDM) at the local level	JORDAN
Water reuse and decentralization	MOROCCO
Desalination coupled with renewable energy	

TOPIC 5:

Various issues related to surface water

Specific topic requested by the PCs	
Setting out the scope of protection of surface water bodies, delineation of protection zones for surface water bodies	ALGERIA
IWRM planning at the level of surface water basins	JORDAN
Flood risk management and assessment at the local level	ISRAEL
Methods for reservoirs' desiltation	MOROCCO
Dam water management and exploitation (with training on new ways to control and supervise in real-time; software and hardware)	TUNISIA

TOPIC6 :

Various issues related to IWRM implementation and planning at the local level

Specific topic requested by the PCs	
Climate change and short-term protection	EGYPT
Technical solutions on Water Demand Management at the local level	JORDAN
Water Framework Directive (WFD): from administration to river basin management	LEBANON
IWRM planning at the level of surface water basins	
Institutional, technical and financial support for conventional water supervision and management	TUNISIA
Capacity building in accrediting entities to drain projects, financing from the Green Climate Fund	
Sustainability assessment and evaluation of previous projects and strategies and their level of impact	



Table 2.4: Scoring and ranking of the potential REG-5 topics

TOPICS	CRITERIA				Overall score (<i>H=high</i> , <i>M=medium</i> , <i>L=low</i>)
	Popularity	Added value (at the regional level)	Expected impact (at the regional level)	Constraints	
1: Public participation in DcWM	High Requested by 4/8 PCs	High Public participation in water management in week in the region. Capacity building on how to implement participatory approaches and methods is valuable	Medium Setting-up public participation mechanisms is a stepwise process that requires time, thus the impacts develops over a longer time period	Medium It is important to have the right participants who are involved in this process	M-H
2: Groundwater issues	Medium Requested by 3/8 PCs	High The activity can lead to the development of common/ harmonized approaches	High Specific methods and tool can be transferred and adopted by the PCs	Medium It is important to have the right participants who are involved in this process	M-H
3: Water Information Systems (WIS)	Medium Requested by 3/8 PCs	High Data flow and data exchange processes among stakeholders are week in the region. Capacity building on how to develop holistic information	Medium Setting-up on this mechanism is a stepwise process, which requires a series of trainings and follow-up. It is also very much country dependent (no	Medium It is important to have the right participants who are involved in this process (mix of policy/decision makers, data providers, IT staff, etc.)	M



		systems which allow for robust data exchange, retrieval and visualization in a transparent manner is valuable	one solution fits all) since the WIS NEED to be tailored and adopted to the specificities of the PC		
4: Use of non-conventional water resources at the local level	Medium Requested by 3/8 PCs	Medium The requested sub-topics varied significant among the PCs and cannot be addressed horizontally	Low There are other regional activities in the work programme (REG-8, P2P-10) addressing these issues, and are expected to have a greater impacts	Significant There are other regional activities in the work programme (REG-8, P2P-10) addressing these issues, confusions can be created if addressed under the DcWM as well	L
5: Various issues related to surface water	Medium Requested by 4/8 PCs, yet heterogeneity in the sub-topics	Low The requested sub-topics varied among the PCs, and don't add in this sense to a regional approach	Low The requested sub-topics varied among the PCs, and cannot bring in this sense a direct regional impact	Significant The sub-topics are too diverse to identify a common audience across the PCs, and are not of interest to a critical mass of the PCs	L
6: Various issues related to IWRM implementation and planning at the local level	Medium Requested by 4/8 PCs, yet heterogeneity in the sub-topics	Low The requested sub-topics varied among the PCs, and don't add in this sense to a regional approach	Low The requested sub-topics varied among the PCs, and cannot bring in this sense a direct regional impact	Significant The sub-topics are too diverse to identify a common audience across the PCs, and are not of interest to a critical mass of the PCs	L



2.2.2 Activity P2P-7 and P2P-8: Peer-to-peer on DcWM

During the REG-4 workshop topics of interest for a Peer-to-Peer (P2P) on DcWM have been collected by the PCs, as presented in Table 2.1, both on the “demand” and “offer” side. In this section a grouping and analysis of these topic/ sub-topics is presented (Table 2.5), in an effort to conclude on “best candidate topics” for P2P activities REG-7 and REG-8 (ref. Table 2.6 – overall comment), on the basis of specific criteria (popularity, added value at the regional level, expected impact at the regional level, constraints.

Topic: Peer-to-peer on DcWM issues

Requested by: Algeria, Egypt, Jordan, Israel, Lebanon, Morocco, Palestine, Tunisia (all PCs)

Type of Activity: Peer-to-peer (P2P)

Objective: Peer-to-peer training on selected issues related to DcWM

Output: Improved knowledge on selected issues related to the DcWM, capacity building among the PCs, establishment of cooperation and alliances among the PCs.

Table 2.5: Grouping of the suggested Peer-to-peer (P2P) topics

TOPIC 1: Guidelines from implementing DcWM at the river basin level (incl. how to reform the legislation, how to draft role & responsibility allocation schemes)			
Peer-to-Peer related “Demand”		Peer-to-Peer related “Offer”	
Elaborating guidelines for implementing DcWM at the basin level	ALGERIA	- How to include the decentralization into the national water policies and strategies, the Water Law and the legislation	- EGYPT
Concepts & principles of DcWM	JORDAN		
Enhancement of decentralization through adaptation/ upgrading of the legislation (reform)	LEBANON	- Conduct trainings on the subject of DcWM - The institutional and regulation frameworks to ensure participation of stakeholders and public consultation in the planning of IWRM	- PALESTINE
Clarification of roles and responsibilities for IWRM at local level. Avoiding/managing overlaps and conflicts between the Water Resources Councils and the Municipalities, and the NGOs	PALESTINE		- MOROCCO
Improving the legal framework for decentralization	TUNISIA	- Practical experiences from the development and operation of the Joint Water Councils	- PALESTINE



TOPIC 2:

Water Information Systems: management/ linking of various systems at the local scale, information flow, exchange and sharing towards informed decision-making at the local level

Peer-to-Peer related “Demand”		Peer-to-Peer related “Offer”	
Management of Water Information Systems with stakeholders and users’ associations, for decision making at local level (i.e. not only for the governmental bodies, but also the from users’ side). Link different systems at different scales to the decision-making and the higher-level system	EGYPT	Exchange of data and information between stakeholders	PALESTINE
National water Information systems	LEBANON		
Ensure a water information system that is efficient, sustainable and accessible to all users, stakeholders and authorities	MOROCCO		
Systems and local technical solutions for implementing decentralized water databases (which can feed the national water information system NWIS)	TUNISIA		

TOPIC 3:

Sharing of experience how to mobilize and achieve public participation in DcWM, and related participatory methods/ mechanisms

Peer-to-Peer related “Demand”		Peer-to-Peer related “Offer”	
EU experiences in getting civil society involvement	ALGERIA	- How to include participation into the Water Law and legislation - Participation of the civil society Groundwater Highland Forum (stakeholders’ participation in implementing the groundwater management policies) - The institutional and regulation frameworks to ensure participation of stakeholders and public consultation in the planning of IWRM	- EGYPT
Engagement and participation methods	JORDAN		- JORDAN
Public participation in the assessment of flood risk management	ISRAEL		
Setting up a mechanism for participatory water management at the local/ decentralized level	MOROCCO		
Participatory approach for local assessment of previous (past) projects	TUNISIA		- MOROCCO



TOPIC 4:

Groundwater issues

Peer-to-Peer related "Demand"		Peer-to-Peer related "Offer"	
Development of groundwater protection zones	PALESTINE	- Groundwater issues, e.g. delineation of groundwater protection zones, methods for digging wells, etc.	- EGYPT
Operation and maintenance of groundwater wells	PALESTINE		
Control of illegal wells, institutional support and equipment, and find a mechanism to prohibit the over-exploitation. Customization of the mechanism for Tunisia (maybe through awareness raising campaigns?)	TUNISIA	- Development of guidelines for the delineation of Groundwater protection zones using participatory approaches (engagement of stakeholder in the development of guidelines for protection zones)	- JORDAN

TOPIC 5:

Awareness raising on some specific issue encountered at the local level

Peer-to-Peer related "Demand"		Peer-to-Peer related "Offer"	
How to achieve water reuse of the treated waste water (TWW), more specifically how to increase the awareness/ sensibilization and acceptability of the end-users	MOROCCO	- Participation of the civil society Groundwater Highland Forum (stakeholders' participation in implementing the groundwater management policies)	- JORDAN
Funding a pilot project on motivation and awareness on DcWM	PALESTINE		
Awareness raising to avoid vandalism of the irrigation water supply network (and thus improve its efficiency)	TUNISIA		
Awareness raising to prohibit overexploitation of groundwater and illegal wells	TUNISIA		

TOPIC 6:

Capacity building to specific local associations/ organizations



Peer-to-Peer related “Demand”		Peer-to-Peer related “Offer”	
Support to the Young Professional Forum, capacity building on DcWM	EGYPT		
Technical support for Joint Water Councils (strengthening of their technical experience/ capacity to run the Councils through webinars, discussions, meetings, etc.)	PALESTINE		

TOPIC 7:

Various themes (unclassified)

Peer-to-Peer related “Demand”		Peer-to-Peer related “Offer”	
River restoration of water courses	ALGERIA	- Conflict resolutions and management - Local conflict management on inter-regional water allocation and water transfers (including management of the related social pressures, protests, etc.) - Water supply management guidelines for Business plans and Masterplans - Process for setting up twinning projects related to the Water Framework Directive (WFD), and promoting/sharing the experiences of the WFD twinning project of Morocco - Municipal Water management and wastewater treatment (WWT) at the local level - Technical expertise in GIS	- TUNISIA
Modernization of irrigation systems (e.g. surface to drip systems). New systems/tools to support the modernization (incentives, cost recovery, financial mechanisms, awareness, but also technical tools of cost-effectiveness assessment)	EGYPT		- TUNISIA
Assessment of the decentralization process itself with the purpose of re-adjusting: evaluation of the impact of decentralization, of the overall efficiency of the system and of the process (pros, cons), and of its effects on water resources, on humans, etc.	EGYPT		- LEBANON
Technical solutions at the local level	JORDAN		
Flood risk management at the local level, flood protection	ISRAEL		- MOROCCO
Twinning with an EU country on the topic of water bodies’ characterization and risk assessment and the WFD	LEBANON		
Technical solutions for “conventional” wastewater (tertiary treatment of WW)	TUNISIA		
Flood risk management, early warning systems for flood risk	TUNISIA		- ISRAEL
Real-time monitoring system for dams, radar system to control precipitations	TUNISIA		



Integrate climate change in strategic studies on water resources planning, using green funds	TUNISIA	- Drought management at the basin scale	- JORDAN - ISRAEL
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Table 2.6: Ranking on the potential P2P topics on DcWM

Topic	Demand from PCs	Offer from PCs	Offer from EU country	Overall comment	Ranking
TOPIC 1: Guidelines from implementing DcWM at the river basin level (incl. how to reform the legislation, how to draft role & responsibility allocation schemes)	Algeria Jordan Lebanon Palestine Tunisia	Egypt Palestine Morocco		Too diverse requests, many sub-topics	Medium
TOPIC 2: Water Information Systems: management/ linking of various systems at the local scale, information flow, exchange and sharing towards informed decision-making at the local level	Egypt Lebanon Morocco Tunisia	Palestine	Austria	Good match between “demand” and “offer”	High
TOPIC 3: Sharing of experience how to mobilize and achieve public participation in DcWM, and related participatory methods/ mechanisms	Algeria Jordan Israel Morocco Tunisia	Egypt Jordan Morocco		Too diverse requests, many sub-topics. Not good match between “needs” and “offers” in terms of sub-topics. Better to be addressed through a training session	Medium
TOPIC 4: Groundwater issues	Palestine Tunisia	Egypt Jordan	-	Good match between “demand” and “offer”	High
TOPIC 5: Awareness raising on some specific issue encountered at the local level	Morocco Palestine Tunisia	Jordan	-	Too diverse requests, many sub-topics. Not good match between “needs” and “offers” in terms of sub-topics.	Medium
TOPIC 6: Capacity building to specific local	Egypt Palestine	-	-	Very specific requests, more towards technical	Low



associations/ organizations				support, no matching “offer”.	
TOPIC 7: Various themes (unclassified) Flood risk management at the local level, flood protection	Israel Tunisia	-	Malta	Too diverse requests, many sub-topics. The sub-topic “flood risk management” was requested by more than one PC, and it can be covered by a peer in Malta.	Medium-High

2.2.3 Activity ST-5: Study Tour on DcWM

Topic: Study Tour related to DcWM

Requested by: Algeria, Egypt, Jordan, Israel, Lebanon, Morocco, Palestine, Tunisia (all PCs)

Type of Activity: Study Tour (ST)

Objective: Undertake a Study Tour in an area/ country with good experience and practices on DcWM issues, covering regulatory and organizational issues of decentralized water management, dealing also with drafting and implementation of management plans at sub-national level.

Output: Exchange of experiences on issues related to the DcWM, capacity building for the PCs, establishment of cooperation within the region and beyond

Table 2.7: Evaluation of the Activity ST-5 (Study Tour on DcWM)

Criteria	Score	Comment
popularity	High	Requested by 8/8 PCs
Added value (at the regional level)	High	Exposure to real-case applications, opportunity to meet international motivated professionals and exchange with them
Expected impact (at the regional level)	High	Enhanced knowledge of the trainees on selected issues related to the DcWM through exchanges with the Study Tour staff, capacity building for the PCs, establishment of cooperation and alliances within the region and beyond. New vision towards cooperation and partnerships, new emerging opportunities for joint projects.
Constraints	Medium	Constraints apply: The success of a Study Tour is also strongly based on the willingness and motivation of the PCs participants to exchange with the professionals at the site and propagate the knowledge gained to their colleagues at home. It also needs to be mentioned that one Study Visit can not necessarily cover all aspects/request, as it may provide a good practice example for one certain issue. Transfer of knowledge to the PC participants is also subject to their own interaction with the study tour professionals.



2.2.4 ACTIVITY Other: Regional e-platform

During the REG-4 workshop a request to develop a regional product, namely and e-platform to share and exchange best practices has been raised.

Topic: Development of a regional e-platform on DcWM

Requested by: Palestine

Type of Activity: Product-oriented (Joint regional work to develop a web platform)

Objective: Development of an e-platform (web portal) for exchange on best practices, success stories, PCs experiences on DcWM from the region.

Output: A common e-platform for exchange of information across the region. Capacity building and cross-fertilization in terms of sharing of experiences, best practices, good/bad examples and applications, etc. on DcWM topics.

Table 2.8: Evaluation of developing a regional e-platform

Criteria	Score	Comment
Popularity	Low	Requested by 1/8 PCs
Added value (at the regional level)	High	The proposed e-platform allows for exchange of best practices and experiences which is valuable in resolving technical as well as governance issues
Expected impact (at the regional level)	High	The activity will help staff and stakeholders at various levels (local to national, technical to policy and decision-makers) to share experiences, learn on good practices from the region and “educate” themselves around DcWM aspects.
Constraints	Significant constrains (= Low score)	<p>Constraints apply: The development of such a regional product (Web platform) requires significant input from the PCs and different sectorial stakeholders. Furthermore, if the platform is used for data exchange agreements among the PCs are necessary regarding the data sharing, ownership, rights, intellectual property rights (IPR), etc. Thus a real commitment is required from the PCs’ side, not only to start-up the platform, but also to maintain it and update it with new information.</p> <p>The SWIM-H2020 could support this work, and coordinate the design and development process, yet specific input and feedback will rely on the PCs. Unfortunately no resources are available at this stage for such a task. It has to be noticed that a similar request was brought up in the REG-6 workshop on Drought Risk Management Mainstreaming (DRMM) where a platform for the exchange of relevant practices and data was proposed. It seems that such a collaborative platform (which could cover different topics) is an added-value product so the SWIM-H2020 will inform the Commission.</p>



3. ROADMAP FOR THE DcWM REGIONAL ACTIVITIES

3.1 REGIONAL ON-SITE TRAINING

The upcoming REG-5 regional training will touch on regulatory and organizational issues of decentralized water management. Capacity building methods will combine workshop and study tour activities (linked to ST-5). Thematically, REG-5 will build on the conclusions of the REG-4 workshop.

At REG-4 it was observed that the term decentralized approach / administration is understood differently by participants. At REG-5, one session will focus on the elaboration of a mutual understanding of key terminology. Additional session will focus on specific topics, as presented in the previous chapter 2.2.1 and ranked up in Table 2.4, such as:

- Public participation in DcWM, e.g. sharing of experience how to mobilize and achieve public participation in DcWM, and related participatory methods/ mechanisms
- Groundwater issues, e.g. delineation and risk management of groundwater bodies, users' involvement in the protection of groundwater at the local level
- Water Information Systems (WIS), in the broader sense, e.g. how stakeholders in a decentralised set-up cooperate with each other and exchange information (data)

The agenda of the workshop will include the on-going peer-to-peer process and a discussion on how to develop it further.

Recommendations/ Follow-up actions:

A Regional on-site training (REG-5) will be held in mid to late-2018 focusing on (but not limited to) the topics identified above. The REG-5 will be held in Vienna, Austria and will be combined with a Study Tour (ST-5).

The Agenda will be drafted taking also into account the peer-to-peer on DcWM (P2P-7, P2P-8) topics and process

3.2 STUDY TOUR

The upcoming Study Tour related to the topic of DcWM (ST-5) will be held back-to-back with the REG-5 regional on-site training.

During the study tour, the participants will visit decentralised management administrations which are responsible for different aspects of water management; for example, concerning groundwater management (regional level) or water supply and wastewater treatment management (municipal level).



The suggested duration of ST-5 is 1,5-2 tour and will be organised in Vienna and neighbouring Austrian Federal States (provinces).

Recommendations/ Follow-up actions:

A Study Tour (ST-5) will be held in mid to late-2018, back-to-back with the regional on-site training REG-5. The participants will visit decentralised management administrations which are responsible for different aspects of water management in Vienna and neighbouring Austrian Federal States (provinces).

3.3 PEER-TO-PEER

The Peer-to-Peer (P2P) activities related to DcWM (P2P-7 and P2P-8) will focus on the following specific topics, as presented in the previous chapter 2.2.1 and ranked up in Table 2.6:

- Water Information Systems: management/ linking of various systems at the local scale, information flow, exchange and sharing towards informed decision-making at the local level
- Groundwater issues
- Flood risk management at the local level, flood protection

Since the P2P is a wider process under the SWIM-H2020 SM project, and an overall balance needs to be maintained across the number of P2P where the PCs are involved in, the following activities are suggested for the P2P on DcWM in agreement with the PCs' NFPs overall priorities across all SWIM-H2020 SM P2P activities.

Table 3.1: P2P-7 and on DcWM

Topic	Recipient	Peer	Coach
Water Information Systems (WIS) Management/ linking of various systems at the local scale, information flow, exchange and sharing towards informed decision-making at the local level <i>(specific topic to be decided)</i> - National water information systems	Lebanon	Austria (Umweltbundesamt)	Austria (Umweltbundesamt)
Groundwater issues <i>(specific topic to be decided)</i> - Development of groundwater protection zones - Operation and maintenance of groundwater wells	Palestine	Egypt	Austria (Umweltbundesamt)
Flood risk management at the local level, flood protection <i>(specific topic to be decided)</i>	Israel	Malta	Greece (LDK)



Recommendations/ Follow-up actions:

A peer-to-peer mechanism will be set up by early 2018 led by the SWIM-H2020 partner Umweltbundesamt (UBA Vienna) and LDK, who will act as coaches in the different groups. In the case of the P2P on Water Information Systems (WIS) Umweltbundesamt will also act as an EU Peer.

The SWIM-H2020 SM team will coordinate the start-up of the activities, and will monitor/ follow-up on them, but it is up to the PCs to actually implement and materialize them. The following tentative schedule is proposed:

Step 1: Introductory phase (duration: 1 month)

During this phase the following activities will be undertaken:

- Circulation to the PCs and the peers from the identified EU countries (Malta, Austria) of the 3 selected topics of Table 2.9. above
 - P2P on Water Information Systems (WIS) (Austria → Lebanon)
 - P2P on Groundwater issues (Egypt → Palestine)
 - P2P on Flood risk management and protection (Malta → Israel)
- Collection of feedback from the PC on the specific questions they would like to get replies/ peering on
- Production of a short concept note/ memo from the NKEs who coordinate the P2P on the expected outputs/ achievements from the P2P, and the planned interactions

Step 2: Implementation phase (duration: 8 months)

- Bilateral interaction of the PCs with the peers
- Face-to-face Meeting (in mid-late 2018, back-to-back with the REG-5)
- Report on the outcomes of the P2P to be drafted by the NKE who coordinates the P2P from UBA and LDK's relevant activities)

3.4 REGIONAL PRODUCTS

During the REG-4, the idea to hold some joint regional work towards the development of some specific regional product (namely an e-platform for exchange on best practices, success stories, PCs experiences on DcWM from the region, etc.) emerged. The SWIM-H2020 could potentially support this work, and coordinate the drafting process, yet specific input and feedback will rely on the PCs. Thus a real commitment is required from the PCs' side, not only to start-up the platform, but also to maintain it and update it with new information.



Recommendations/ Follow-up actions:

This product-oriented activity (joint regional work towards the development of an e-platform) presents an added-value and can have a major impact.

Some constraints are nevertheless evident, mainly related to the fact that the development of such a regional product requires significant and coordinated input from the PCs and different sectorial stakeholders and their commitment. Issues related to data sharing protocols, may also apply.

The SWIM-H2020 identifies that such work is important and of high added-value. SWIM-H2020 SM could potentially support this work, and coordinate the design and development process (specific input and feedback will rely on the PCs) but resource limitations currently apply. Thus, this potential activity is considered as a “reserve activity” for a future time and/or in case additional resources can be recovered since the impact and added-value for the region is high.

It has to be noticed that a similar request was Brought up in the REG-6 workshop on Drought Risk Management Mainstreaming (DRMM) where a platform for the exchange of relevant practices and data was proposed. It seems that such a collaborative platform (which could cover different topics) is an added-value product for the region, so the SWIM-H2020 will inform the Commission.