



**REF: IMPLEMENTATION PARTNERS AGREEMENT - Contract: 4500475138**

**W-SMART's Partner Report - Task #2 Deliverables**

**REF: DRAFT CONCEPT NOTE FOR THE UNESCO-IHP “ECOMED” ACADEMY**

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## **I. BACKGROUND OF THE ECOMED ACADEMY NETWORK**

Facing the ever-growing climate change impact on the water stress and on ecosystems sustainability in the Mediterranean coastal region, which has become, along with regional conflicts, one of the major global drivers for today's massive population displacement, world-wide, metropolitan governments of the MENA (Mediterranean & North Africa) region have been increasingly challenged with rising shortage of water resources, lack of marine pre-disposal wastewater treatment infrastructure, inadequate urban sewerage systems and insufficient sanitation. The COVID -19 Pandemic Crisis has demonstrated the severe risks and catastrophic public health consequences of the lack of sanitation infrastructure, societal education, insufficient governance capacity and critical lack of regional coordination to face such global extreme events. The critical water and sanitation infrastructure regional needs and the substantial lack and deficiencies of local governance capacity to face these metropolitan challenges result in a fast-growing pollution of the trans-boundary ecosystem(s), infiltration of raw wastewater to the coastal aquifer(s) and severe impacts on public health risks, marine bio-degradation, environmental hazards, societal survivability issues, food security and economic decay. The sea water flow patterns along the coastal regions, accelerate the fast-growing environmental risks to the multi-cultural and over-dense metropolitan cities, driven by the trans-boundary pollution of the ecosystem(s) and the infiltration of polluted sea water to coastal aquifer(s).

Within this context, the coastal ecosystems continuously experience growing pollution loads and are unable to meet the vital human needs. Facing ever-rising water stress, ground water overdrawing in the coastal region generates increasing seepage of the polluted seawater and infiltration of untreated raw wastewater into the aquifer(s), raising severe public health hazards. Furthermore, climate change effects accelerate the increasing water stress. For example, the annual discharge of the Jordan River in 1960 was 1,300 m<sup>3</sup>, compared to highs of only about 200 m<sup>3</sup> today, while societal consumption levels increase at a rapid pace. Depleting rate of water resources in many coastal regions has been accelerated and deficient infrastructure management, yielding a water loss of up to 50% in the municipal water distribution systems, accentuates the rising water stress.

This rapidly degrading state of the coastal ecosystem(s), which is a common challenge to many of the MENA states, was at the origin of the strategy elaborated in the framework of the Union for the Mediterranean (UfM) to meet the objectives of the Horizon 2020 Initiative to de-pollute the Mediterranean ecosystem, which increasingly accumulates the wide variety of effluents from both heavily industrialized and less developed countries. The UfM strategy recommends implementation of prioritized programs for establishing minimum quality requirements for securing adequate treatment of wastewaters to avoid downstream pollution. It follows the provisions of the Barcelona Convention – whereby all agglomerations have to ensure treatment of their urban wastewaters before discharging to the environment. Furthermore, with increasing agricultural water reuse effluent quality control has become a prevailing factor in the economic viability of the regional eco-sustainable development of the agricultural states. Within this context it is mutually recognized by all the IHP MENA/Mediterranean member states that the challenges faced by the MENA metropolitan governments will have most significant environmental, societal and economic impacts on the sustainable development of the Mediterranean Region and must be addressed. This is the main purpose of the IHP resolution, calling for establishing the **ECOMED Academy** of *Environmental Coastal coOperation for Metropolitan Eco-sustainable Development (“ECOMED”)* to jointly implement environmentally sustainable coastal eco-development strategies by all the member states concerned and support their climate adaptation capacity building.

## **II. CONTRIBUTION TO THE IHP AND ITS COUNCIL RESOLUTION**

Facing the ever-growing climate change impacts on the water stress and on the coastal ecosystems sustainability in the MENA/Mediterranean region, the **UNESCO-IHP Resolution XTR-IV-3 “PREPARATION FOR THE IMPLEMENTATION OF THE “UNESCO ECOMED Academy Network”** (ref. attachment) recognizes the need for an international platform to facilitate knowledge exchange and sharing best practices, inspire research projects on innovative solutions in the countries concerned, and promote education, societal awareness programs and professional training of future managers and engineers of local governments and metropolitan water agencies for upgrading their climate change adaptation management capacity and their ecosystems resilience to extreme climate events.

Furthermore, the IHP resolution calls upon the member states concerned to create an inter-governmental platform, which is identified as the **UNESCO-IHP Academy of Environmental Coastal coOperation for Metropolitan Eco-sustainable Development (“ECOMED”)**, in order to support: i) capacity building through the IHP Network Members for climate change adaptation and resilience building to extreme climate events; ii) coastal ecosystem pollution monitoring for the assessment of environmental and public health risks and their mitigation planning; iii) public

education for raising societal awareness and promoting a crisis preparedness culture; iv) research partnerships for innovative solutions, and v) professional education and training programs tailored to the capacity building needs of the local governments and metropolitan water authorities of the countries concerned.

The ECOMED Academy's goals and proposed scope of programs are aligned with the IHP Strategy IX and its five priority areas (with their expected outputs), which include: i) Scientific Research and innovation; ii) Water education in the Fourth industrial Revolution including Sustainability; iii) Bridging the data-knowledge gap; iv) Integrated water management under conditions of global change; and v) Water governance based on science for mitigation, adaptation, and resilience. The Academy will support the MENA/ Mediterranean member states capacity building for responding to the eco-sustainability challenges posed by the ever-increasing pace of environmental global and climate changes, which lead to unprecedented risks that impact the water management of our Megacities and rural areas and affect the daily life of the citizens. Water experts consider that the upmost challenges of our time concern the need of changing lifestyles and consumption behavior to face the growing water scarcity and its impacts on the WEFE NEXUS security, which will constraint the capability of the metropolitan technical services to interact and deal with synchronous impacts of extreme events and natural disasters.

The "ECOMED" Workshops, hosted and co-organized by UNESCO from 2015 to 2019, with the participation of government officials, local mayors, executives of national/metropolitan water agencies, researchers and other water experts from the East Mediterranean member-states, have concluded that the prime goal of the "ECOMED" coastal cooperation shall be focused on supporting local governance capacity building of the fast growing MENA/Mediterranean metropolitan governments and water authorities in order to effectively respond to the regional eco-development challenges of: i) establishing common standards for securing adequate pre-disposal treatment of wastewaters; ii) monitoring the ecosystem pollution and its disastrous impacts on environmental hazards, public health risks and societal sustainability; iii) promoting integrated water resources management and quality control; v) adapting regional eco-development strategies to face climate change impacts and extreme drought effects, vi) providing sustainable sanitation; vii) undertaking depollution projects and implementing protection measures of the coastal ecosystems; and viii) accelerating the coastal eco-development and economic growth of the member states, focusing on water management solutions for sustainable agriculture and eco-development for the benefit of all the communities in the region. This is the prime goal of the IHP-ECOMED Academy. The proposed Academy network aims to support Members States to achieve the 2030 Agenda and the sustainable Development Goals (SDGs), especially water related SDGs, and other water-related global agenda, such as the Paris Agreement on Climate Change, Sendai Framework on Disaster Risk Reduction (DRR) and the New Urban Agenda (NUA).

### III. ACADEMY MISSION, GOALS AND EXPECTED IMPACTS

The mission of the IHP "ECOMED" Academy Network is inspired by and consistent with the aims of the UN General Assembly resolution declaring access to clean water and sanitation a human right (July 2010); the COP21 'Paris Declaration' (December 2015), calling for a Mediterranean Dialogue on climate change adaptation strategies facing severe climate impacts on water scarcity, fast depleting water resources, environmental hazards and growing public health risks; the Union for the Mediterranean (UfM) strategy recommendations for the implementation of prioritized programs for establishing minimum quality requirements for wastewater treatment effluents and securing adequate treatment of wastewaters to avoid downstream pollution; the provisions of the Barcelona Convention whereby all agglomerations have to ensure treatment of their urban wastewaters before discharging to the environment; the 2030 Agenda for Sustainable Development, which includes a dedicated goal on water and sanitation (SDG 6) to "ensure availability and sustainable management of water and sanitation for all"; and the objectives of the IHP-IX strategy and its five priority areas as they were approved by the IHP Council at its 24th session.

**The prime mission** of the IHP ECOMED Academy is to create an international platform to facilitate knowledge exchange and experience sharing of best practices among the MENA/Mediterranean member-states and support the development of the capacity building programs of their metropolitan governments and water authorities for: i) upgrading their climate change adaptation management capacity and their ecosystems resilience to extreme events; ii) promoting public education and awareness raising programs for a societal climate crisis adaptation; iii) implementing coastal ecosystems pollution monitoring, protection measures and securing adequate pre-disposal treatment of wastewaters; iv) engaging stakeholders' partnerships for regional planning of sustainable eco-development and resilience building projects for the coastal regions; and v) adapting professional education and training programs to the capacity building needs of the local governments and metropolitan water authorities of the countries concerned.

**The Goals** - To accomplish its mission the main Academy's goal is to support:

1. **Academy's constitution and program development** of the Network of ECOMED capacity building support and ecosystem monitoring centers, to be established at the initiative of the national and/or metropolitan governments in the MENA/Mediterranean member-states concerned, consistently with IHP goals and terms of reference;
2. **Development of professional education and training programs** for managers and engineers of local governments, municipalities and water authorities to accelerate their capacity building for responding to the ever-growing climate change impacts on existential, societal and economic development challenges;

3. **Deployment of coastal ecosystems pollution monitoring** and of the infiltration of raw wastewater to the coastal aquifer(s), as well as their impacts assessment on public health risks, marine bio-degradation, environmental hazards, food security and economic decay, including risks mitigation planning and ecosystems protection measures;
4. **Public education** with Media support and the collaboration of metropolitan cultural centers and educational institutions for raising societal awareness and promoting climate adaptation and a crisis preparedness culture;
5. **Industry-university research partnerships** for accelerating development, site demonstration and deployment of innovative solutions for climate change adaptation, regional IWRM and ecosystems resilient building strategies;
6. **Regional stakeholders' partnerships for leveraging resources and expertise** for feasibility assessment, regional planning, implementation and monitoring of coastal eco-development projects, including ecosystems depollution and preservation measures, sustainable sanitation, and integration of innovative solutions for water security, assets management and resilience building to extreme climate events;
7. **Upgrading crisis management capabilities** of local governments and water authorities facing extreme climate events, environmental hazards in the coastal regions and growing water scarcity and food security concerns;
8. **Economic, environmental and societal impacts assessment** of continuously upgrading the climate adaptation and resilience building strategies on the metropolitan capacity of responding to the sustainable development challenges and extreme climate impacts in the member states concerned;
9. **Exploring and establishing cooperation** with relevant UN agencies, NGOs and other stakeholders including UNEP MED POLE, UN ESCWA, UfM, and other NGOs and economic development stakeholders, for implementation of the Academy's programs and the development of its network of local ECOMED centers in the member-states.

#### **IV. STAKEHOLDERS AND PARTICIPANTS**

**Stakeholders and Beneficiaries** – The UNESCO-IHP is an organization of the member-states (stakeholders) for the member-states (beneficiaries). The resolution calls for establishing a world-wide international platform to facilitate knowledge exchange and experience sharing of best practices among the MENA2 (Middle East, North Africa and Africa) member-states, inspire research projects on innovative solutions in the countries concerned, and promote education, societal awareness programs and professional training of future managers and engineers of metropolitan water services for upgrading their capacity to face the regional climate change impacts on the coastal eco-development challenges.

As the different regions present a wide diversity of climate impacts, hydrological challenges, socio-cultural, environmental and economic conditions, technological and operational practices and other contextual conditions, the development of the regional “ECOMED” Academy programs needs to be locally adapted to the regional context, challenges and shared SDG. Therefore, it is proposed that at the initial stage the Academy's programs development will focus on the planning and implementation of research, innovation, professional education and capacity building pilot programs for the MENA/Mediterranean member states. The programs are expected to effectively address the climate change impacts and metropolitan eco-sustainability challenges, including rising water scarcity, extreme climate events (e.g., floods, wildfires, droughts, etc.), agricultural/food security concerns, lack of pre-disposal treatment infrastructure and sanitation, public health risks, and the severe economic, environmental and societal impacts on the massive population displacements and the metropolitan eco-sustainable development. Focusing on regional SDG, the active participation of member-states through the network of local ECOMED centers to address their existential needs is essential for the development of the Academy's programs, which can provide a pilot case for supporting the development of relevant Academy's programs for other regions.

Within this context, the stakeholders of the IHP ECOMED Academy are the IHP member-states involved and the main beneficiaries are their civil societies, as well as global and regional stakeholders, including local governments, water agencies, financial sector, economic development corporations, relevant UN Organizations, hydrological institutes, universities, municipalities, technical experts, local consumers communities, and other interested regional stakeholders. However, the Academy's research, innovation, professional training and capacity building programs are expected to inspire the development of innovative socio-technical solutions for coastal ecosystems pollution mitigation, climate change adaptation and resilience building to extreme events, which will surpass any regional or geographical frontiers and therefore inspire and support the development of inter-community consensus based coastal eco-development strategies for meeting the regional SDG and contributing to the IHP goals.

#### **V. UNESCO-IHP EXPECTED ROLE**

In accordance with the IHP Resolution, UNESCO, as the IHP Secretariat, is presently facilitating the Task Force assessment of: i) the feasibility of the “ECOMED” Academy to meet the IHP resolution goals; and ii) potential cooperation with UNEP MED POLE, UN ESCWA, other relevant UN agencies, as well as NGOs which may include UfM, CGIR, the Ford Foundation, Rockefeller Foundation and other stakeholders. The purpose is to support the development of an implementation plan for the Academy's programs and its network of local ECOMED centers in the member-states concerned. Upon approval by the IHP Intergovernmental Council, the proposed ECOMED Academy Network will be established as a network of capacity building centers in the Mediterranean region, under the auspices of the Intergovernmental Hydrological Program of UNESCO. Given their expertise, the ECOMED Academy Network centers will contribute to the implementation of UNESCO's strategic priorities and programs related to water, notably

to the IHP-IX implementation, as well as to the regional SDGs and global development agendas through international and regional scientific cooperation, research, knowledge production and sharing, and capacity development on water and climate issues in the Mediterranean region. Consequently, the proposed network's activities will be aligned with UNESCO and IHP priorities on water. The proposed ECOMED Academy Network will be a key partner of IHP and will be expected to involve and collaborate, where appropriate, with IHP National Committees of participating countries in the region, UNESCO water-related category 2 centers, UNESCO Water Chairs, and other UNESCO programs as appropriate. It may also leverage UNESCO's international reach and convening powers. As a network under the auspices of UNESCO, but being entities independent of the UNESCO IHP Secretariat, the proposed ECOMED Academy Network will have no direct financial implication on the UNESCO Secretariat. The collaboration with UNESCO could in particular contribute to: i) facilitating the active participation of the MENA/Mediterranean member-states in constituting the ECOMED academy and its Network of local ECOMED Centers in the member-states concerned; ii) promoting strategic partnerships with relevant UN organizations, NGOs, funding agencies and other strategic partners; and iii) promoting the world-wide dissemination of the Academy's programs and participating in the assessment of their impacts on the current state of practice in the member-states through relevant conferences, media initiatives, publications and other events. For this purpose, UNESCO secretariat will participate, on behalf of the IHP, in the Academy's Governing Council annual meeting for the Academy Program Review and Assessment.

## **VI. ORGANIZATIONAL STRUCTURE AND GOVERNANCE**

**Organizational Structure** - To accomplish its goals the key elements of the organizational structure of the IHP "ECOMED" Academy will include:

- **The "Host Institute"** – The prime responsibility of the *Host Institute* is to host administratively and ensure the accountable technical, operational, financial and administrative management of the "ECOMED" Academy programs with highly qualified research faculty and program management services. For this purpose, the Cyprus Institute (CyI) has offered to be the Host Institute. The CyI will provide its high-quality, multi-disciplinary research and professional education academic environment, including its administrative services, knowledge bases with a unique regional experience, research and education facilities, and accessibility to a global network of research collaborations with industry and universities. More specifically, the responsibility of the Host Institute may include:
  - i. **Promoting, supporting and engaging planning, development and implementation of the Academy's Programs** of research and innovation, professional education, training, and capacity building responding to the identified priority needs of the metropolitan governments and water authorities in the member-states;
  - ii. **Supporting the constitution of the Network of local ECOMED Centers** in the member-states concerned and the development and coordination of their programs at the local and Network levels;
  - iii. **Promoting stakeholders' partnerships** for undertaking regional planning, feasibility assessment, project financing and impacts monitoring of coastal eco-development projects including ecosystems monitoring and protection, infrastructure, sustainable sanitation and resilience building to extreme climate events;
  - iv. **Ensuring technical, financial, operational and administrative management** of the Academy's programs provided by the Host Institute and supporting the development, management and coordination of the pilot capacity building programs initiated in the member-states through the local ECOMED centers;
  - v. **Performance Monitoring and Impacts Assessment** of the Academy's programs on accelerating the capacity building of the metropolitan governments and water authorities to face the climate crisis impacts.
- **The Network of the Metropolitan ECOMED capacity building centers in the member-states concerned** – The prime responsibility of the local Metropolitan ECOMED centers will be to bring together and engage active participation of the local and regional stakeholders, including the metropolitan governments, the water authorities, the research community, the financial sector, economic development corporations, the media, and other stakeholders of the member-states in: i) establishing the metropolitan priority capacity building challenges of climate impacts adaptation and ecosystems protection as well as their impacts on the societal sustainability, public health risks, environmental hazards and coastal eco-development; ii) promoting and supporting, with the collaboration of the Host Institute, strategic partnerships for the development of the locally adapted capacity building programs to address the identified priority needs; iii) evaluating the impacts of the Academy's programs on accelerating the climate adaptation capacity building of the metropolitan governments and water authorities to face the identified regional challenges. The local ECOMED centers may be hosted by local/national hydrological Institutes and/or Universities and may involve strategic partnerships with local, regional and global stakeholders, which may include relevant UN agencies, corporate industry, national agencies, municipalities, water authorities, universities and research institutions, the financial sector, economic development corporations, sanitation utilities, local media, civil society organizations, and other stakeholders. More specifically, their responsibilities may include:
  - i) **Development and/or adaptation of local capacity building programs**, with the support of the Host Institute, to address the identified climate adaptation, ecosystems protection and coastal eco-development challenges of the local governments, water authorities, the civil society and other key stakeholders in the member-states;

- ii) **Engaging local metropolitan public education** with the support of the local media, cultural centers and educational institutions for raising a societal awareness to promote a resilience culture of climate adaptation;
- iii) **Implementing coastal ecosystems pollution monitoring** with the support of local/national hydrological institutes and/or universities with shared data-based for pollution mapping, environmental and public health risk assessment, as well as situation analysis for coastal ecosystems protection;
- iv) **Promoting and supporting regional inter-university collaborations** for leveraging research and innovation, professional education, and capacity building programs with the support of industry-university partnerships;
- v) **Supporting regional stakeholders' partnerships** for planning, feasibility assessment, financing, projects monitoring and impacts assessment of sustainable eco-development and resilience building projects.

The program(s) development and performance monitoring of the local ECOMED centers will be assessed annually, as part of the Academy's Programs Review & Assessment (APRA) process, by the Academy's Governing Council with the participation of UNESCO, as the IHP Secretariat.

➤ **The Academy's Secretariat** – The Academy's Secretariat will include the Secretary General, the Treasurer, the Scientific Director and the Public Information and Communication Technology Director.

1. **The Secretary General** –The main responsibility is to represent the AGC and on its behalf provide the necessary leadership, under the auspices of UNESCO (IHP Secretariat), for and oversee the planning, development, management, performance monitoring and impacts assessment of all the Academy's programs, at the Host Institute and at the Network scale, consistently with the IHP goals and the yearly workplans approved by the Academy Governing Council. It includes: It will include:
  - i. **Promoting and supporting the active engagement of the member-states** in establishing local stakeholders' partnerships for the constitution of the local Metropolitan ECOMED centers, the prioritization of the capacity building needs, and the development and management of their programs;
  - ii. **Overseeing the development, management, performance monitoring and impacts assessment** of the Academy's programs, including the local ECOMED centers and their coordination at the network scale;
  - iii. **Exploring strategic partnerships** which may include UN Agencies, funding agencies, academic research community, UNESCO network of Research Centers, NGOs, industry, water authorities, Media, and other partners, for the development/implementation of the Academy's programs;
  - iv. **Public information, communication and dissemination of the Academy's programs**, including media relations, stakeholders' engagements, participation in relevant international forums, conferences and other settings, and the dissemination of the programs' outcome at local, regional and global levels;
  - v. **Preparation of the Academy's Annual Activity Report**, including the workplan for each program with identified resources, and its presentation to the Academy's Governing Council at its annual meeting.

For this purpose, the Secretary General will be supported by CyI faculty, administrative services, as well as by: i) The Treasurer – with the responsibility of the financial oversight, control and monitoring of the revenues and expenses related to any and all the activities, as well as the review and recommendations for leveraging financing for specific program(s) development; ii) The Scientific Director – with the responsibility of scientific programs monitoring, quality control and impacts assessment of all the research, education and professional development programs; and iii) Public Information and Communication Technology Director – with the responsibility for public information, communication with the media, local governments, water authorities and other stakeholders, and world-wide dissemination of the programs and their impacts assessment, following UNESCO publication policies.

**The IHP ECOMED Academy Governance** - Under the auspices of UNESCO-IHP, the IHP ECOMED Academy, with W-SMART as its designated Secretariat, will be hosted and administrated by CyI, as its Host Institute. For this purpose, a specific collaboration agreement will be established with the Terms of Reference (ToR) for the Academy's programs development and their technical, operational, financial and administrative management between the W-SMART, as the designated Secretariat, and CyI, as the Host Institute, and submitted for approval by the ECOMED Governing Council. Figure 1 illustrates the proposed governance organizational structure, which is expected to include:

➤ **The Academy's Governing Council (AGC)** – to be chaired by the President of the Academy. The AGC will be responsible for the program development and its financial, technical, administrative and operational management. It will consist of delegates of the member-states involved in the ECOMED Academy, IHP Regional Vice Chairs (in particular, MENA, Africa and Europe), UNESCO Regional Hydrologists, Scientific Trustees, delegates of relevant UN Agencies, Funding Agencies and Economic Development Corporations, Metropolitan Government Officials and Executives of Water Authorities from the member states concerned, as well as the Directors of their local ECOMED Centers and other regional stakeholders. Acting under the auspices of IHP, it will include UNESCO representatives, the President of CyI (or his/her delegate) as the Host Institute, the Secretary General, the Scientific Director, the Treasurer, and the PICT Director. New AGC members will be nominated by the

Academy's Secretary General, upon consultation with the President of the Host Institute, for approval by the AGC, acting under the auspices of the IHP Intergovernmental Council. The AGC will hold an Annual Meeting to review the State-of-Progress of the Academy's programs, including their development, performance monitoring and impacts assessment on the capacity building of the member-states and their water authorities. It will review the proposed Academy's workplan for each year and will approve or recommend changes to the proposed plan.

- **The Executive Management Bureau (EMB)** – to be chaired by the Academy's Secretary General. The EMB will consist of 5 elected members of the Governing Council and will include the Executive Vice President, the President of CyI (or his/her delegate), the Secretary General, the Scientific Director, the Treasurer, the Director of Public Information and Communication Technology (PICT), and the Chairs of the Academy's Advisory Boards. Its main responsibility will be to provide, on behalf of the AGC, the leadership for the programs' development, oversee their technical, financial and operational management, and ensure their performance monitoring and impacts assessment, both at the Host Institute and at the network level. The EMB will convene virtually every 3 months and will report to the Governing Council at its annual meeting. It may call for an extraordinary meeting in special cases. Its Annual Meeting will provide a regional platform for the Directors of the local Metropolitan ECOMED Centers to present their challenges and discuss the development of their programs.

**Advisory Boards** - The EMB will be supported by Advisory Boards which may be proposed at the initiative of the Secretary General for approval by the Academy Governing Council and may consist of the Directors of the local ECOMED Centers, delegates of the local governments of the member-states concerned, executives of their water authorities, the research community, experts of relevant UN agencies, regional hydrologists, the financial sector, the economic development corporations, as well as other regional stakeholders or strategic partners and members of the AGC. At the initial stage it is envisioned to establish 2 permanent Advisory Boards, which will advise the EMB and the Secretary General, on the following issues. Additional ad-hoc advisory boards may be established upon necessity, such as financing & resources management, regional co-development partnerships, and others as appropriate.

- **Strategic Network Development Advisory Board (SND-AB)** – to be chaired by the President of the Host Institute (or his/her delegate). The SND-AB will focus on the strategic network development challenges and provide advice and recommendations on i) institutional issues and terms of reference for the constitution of the local Metropolitan ECOMED centers, their eligibility requirements and performance measures for participation in the IHP Academy's network; ii) the Academy's support, with the collaboration of the Host Institute, for the development and adaptation of their professional education, research, public education and capacity building programs to the local priority needs of the local governments and water authorities; iii) local and regional strategic partnerships for leveraging expertise and resources for their programs development and management; iv) performance monitoring and impacts assessment of the programs on the climate adaptation capacity, ecosystems monitoring and protection measures as well as on the societal sustainability and the coastal eco-development; and v) strategic regional stakeholders' partnerships for planning, feasibility assessment, implementation and impacts assessment of coastal ecosystems protection and eco-development projects; vi) financial state evaluation of the programs financing strategies for specific program(s) development; vi) institutional issues and programs development challenges of the Metropolitan ECOMED centers in the member states concerned. The SND-AB will consist of the Directors of the local ECOMED Centers, the delegates of the local government's regional hydrologists, executives of the water authorities, as well as other stakeholders, and members of the AGC. It will convene virtually each 6 months and report to the EMB. Its recommendations will be essential for the preparation of the Annual Activity Report, to be presented by the Secretary General to the AGC at its annual meeting.
- **The Scientific Advisory Board (S-AB)** – to be chaired by the Scientific Director. The SAB will convene virtually each 4 months and report to the EMB. It will consist of a network of universities and research institutions in the MENA/Mediterranean member-states and will include experts of the IHP Networks of Research Centers and IHP Chairs, as well as executives and experts of metropolitan governments, water authorities, media and other regional stakeholders. It will focus on promoting and monitoring the quality, performance and impacts of the Academy's research, innovation, professional education, and capacity building programs on upgrading the climate adaptation capacity and resilience building of the local governments and water authorities in the member states concerned. For this purpose, the SAB will effectively promote, monitor, assess and support: i) The development of inter-university research collaboration and industry-university innovation partnerships for leveraging expertise in competing for sponsored projects and accelerating investments in research and demonstration of innovative solutions; ii) performance monitoring of all the research, education and professional development programs developed by the Academy and its Network of local ECOMED centers; iii) world-wide dissemination of the Academy's programs through publications, communication platforms, workshops and other special events; iv) locally adapted public education for promoting societal support for investments in ecosystems resilience building to extreme climate events; v) impacts assessment of the Academy's programs on the state-of-practice and capacity building of local governments and water and vi) Academy's public information policies which need to be consistent with UNESCO-IHP policies. The SAB will also review the yearly Program Performance and Impacts Assessment Report prepared by the Scientific Director. The Scientific Advisory Board will convene virtually each 6 months to share its recommendations with the EMB.



Figure 1 shows an Accountability Flow Chart of the proposed Academy network governance organizational structure. It illustrates that as the programs envisioned are expected to be developed and managed quasi-autonomously at the initiative of the Host Institute and the ECOMED centers in the member states concerned, the main role of the Secretariat will be to ensure their coordination at the network level, oversight monitoring, and regional eco-development impacts assessment, representing the Governing Council as the Chair of the Executive Management Bureau.

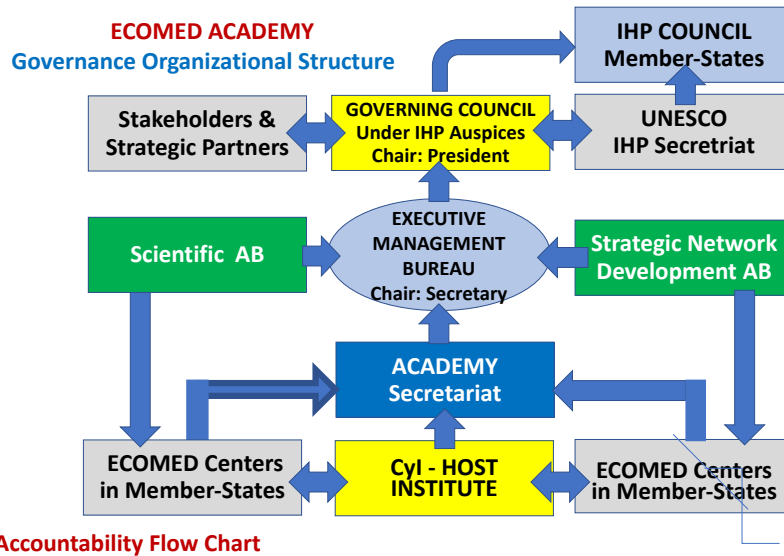


Figure 1 – Governance & Organizational Structure – Accountability Flow Chart

## VII. THE ACADEMY'S PROPOSED SCOPE OF PROGRAMS (SoP)

**The Prime Goal** of the Metropolitan “ECOMED” Academy is to support the capacity building programs of metropolitan governments and water agencies in the MENA/Mediterranean IHP member-states involved, facing the climate change impacts on extreme climate events, water scarcity, the rapid coastal ecosystem pollution, rising agricultural food security concerns, population displacement and survivability challenges of the coastal civil society. For this purpose, the “ECOMED” Academy agenda is focused on providing the interested stakeholders of the Mediterranean member states, including local governments, water agencies, the local and global financial and economic development sectors, the UN Organizations concerned, hydrological institutes, universities, municipalities, technical experts, local communities and other interested stakeholders with:

- Multi-disciplinary professional development programs** for managers, engineers and other specialists of local governments and water agencies to accelerate their capacity building for climate change adaptation management, ecosystems protection and resilience building facing extreme climate events;
- Coastal ecosystem monitoring** for pollution mapping, risks assessment and assets management with regional knowledge/databases and shared information system(s) on the state of the coastal ecosystems and their aquifers;
- Public education programs** at all levels with Media support, educational and cultural centers, to promote a community preparedness culture to extreme climate events;
- Metropolitan research, development and innovation platform** for promoting research partnerships with universities, water agencies, industry and other strategic partners to accelerate the development and deployment of innovative solutions in climate resilience programs;
- Stakeholders' partnerships platform** for planning, feasibility assessment, leveraging financing and monitoring the impacts of coastal eco-development projects, which may include ecosystem monitoring, protection and depollution, sustainable sanitation, infrastructure, agricultural water reuse, and other regional projects.

**An essential condition for the successful development of the Academy programs** is rooted in the active participation of the IHP member-states concerned in the planning and development of the ECOMED Academy's programs. The program development needs to be adapted to the capacity building priority needs of the different member states concerned. For this purpose, it is envisioned that the Academy's capacity building support programs will include:

- Regional capacity building programs** to be developed by the host institute, which are focused on the coastal ecosystem(s) management and climate adaptation challenges facing extreme climate impacts, ever-growing water scarcity, coastal ecosystems pollution, and rising public concerns. These programs are expected to bring together government officials, executives of water authorities and researchers of the member-states involved and provide a multi-disciplinary forum for their experience sharing of climate adaptation and ecosystems management. They will provide on-line accessibility to the professional education and training workshops to facilitate experience sharing.
- Locally adapted capacity building programs** that will effectively address the capacity building needs of each member-state within its socio-cultural, climatic and operational context, to be developed and shared at the network

level by the local ECOMED Centers, with the support of the Host Institute. These programs will include specialized professional education, research and site demonstration of locally adapted solutions, public education and case studies of regional development projects, tailored to the specific priority needs of the member-state concerned.

- iii. **Performance monitoring, impacts assessment and network scale coordination of the Academy's programs**, including the programs developed by local ECOMED Centers in the member-states in order to meet their SDG.

**Scope of Programs (SoP)** - The Academy's programs will be developed and adapted to meet the priority capacity building needs of the member-states concerned as established and reviewed at the Governing Council annual meeting. They may be proposed with their objectives, scope, duration, identified financing sources and other strategic and operational information for consideration by the EMB by either the Host Institute or, at a Network scale, by a local Metropolitan ECOMED Center with the support of the appropriate Advisory Board(s). While the development of such programs will require the stakeholders' participation of the member-states and of the AGC members, following lessons learned and recommendations from the "ECOMED" Workshops hosted and co-organized by UNESCO from 2015 to 2019, it is envisioned that to accomplish the ECOMED Academy goals the scope of programs envisioned include the clusters of programs outlined below. A more detailed description of the proposed programs is presented in Appendix 1.

1. **Ecosystems Monitoring & Pollution Infosystems for Regional Eco-development ("EMPIRE" Knowledge Base)** – The regional ecosystem(s) pollution monitoring and data-based mapping will support risk assessment, situation analysis and deployment monitoring of a Mediterranean environmental policy of ecosystems protection, effluent pre-disposal quality control and preemptive risk management. It will significantly contribute to the development of coastal knowledge/data bases that may substantially support research, site demonstration of innovative solutions, professional education and training and the development of other capacity building programs, consistently with the objectives of the IHP-IX. The Host Institute will support a data collection and open access sharing platform for the ecosystem pollution monitoring in the member-states concerned.
2. **Metropolitan Eco-Development, Infrastructure & Climate Adaptation Planning Platform ("MEDICAPP") – Regional Stakeholders' Planning Forum for Capacity Building Priority Needs Assessment** – The "MEDICAPP" metropolitan forum will bring together the delegates of the local governments, the executives of the water agencies, the directors of the local Metropolitan ECOMED Centers, the Host Institute, relevant UN agencies, NGOs, UNESCO regional hydrologists, the Academic Community as well as other regional stakeholders to assess, with the support of regional knowledge bases and experience sharing platforms, the growing climate change and water scarcity impacts on the coastal ecosystems sustainability challenges. It will provide the forum for sharing the capacity building priority needs of the member states concerned. It will also identify specific projects for case studies (or inter-state hackathons) that will demonstrate the intrinsic value added of the Academy's regional strategy in addressing inter-governmental eco-sustainability challenges of the member-states. These case studies are expected to provide reference materials for core courses of the Academy's professional development programs.
3. **Smart Urban Networks & Resilient Infrastructure for Sustainable Eco-development ("SUNRISE")** – The purpose of the Academy's Metropolitan Eco-development "SUNRISE" Programs is to offer Professional Education and Training Programs for sustainable urbanization, climate adaptation management and renewal programs for metropolitan resilience and eco-development. The programs will offer experience based state-of-the-art graduate education and life-long specialized training for water experts, engineers, public service managers and other specialists of water authorities and local governments from the member states concerned for upgrading their capacity to better cope with the challenges of growing climate impacts, extreme events, water scarcity, sanitation deficiencies and ecosystem pollution. The Cyl is well positioned with the collaboration of the Academy's Network of Universities and local Metropolitan ECOMED centers to develop graduate education and professional training programs to address the local capacity building needs of the member-states concerned, including the challenges of climate adaptation, ecosystem monitoring and protection and resilience building to extreme climate events, in the context of the rapid coastal urbanization, growing ecosystems pollution, and rising societal sustainability concerns.
4. **Environmental Climate coOperation for Research, Innovation & Stakeholders Engagement ("ECORISE" Programs)** The development of the proposed "ECORISE" programs will involve strategic collaboration of the Academy, its Host Institute and the Network of local Metropolitan ECOMED Centers with local universities, IHP network of research centers, the academic community, High-Tech industry, water authorities and other potential partners for the research, development, pilot demonstration, early deployment monitoring and impacts assessment of innovative solutions. The EU and Mediterranean member-states have long realized the common interest of leveraging experience, programs and resources of the members states for research, pilot demonstration and innovation for facing climate change impacts and eco-sustainability challenges and created specific programs, such as Horizon 2020, PRIMA, and other programs, for funding such regional "ECORISE" programs. The ECOMED Academy, with its host Institute and the Network of Co-Host Universities and local ECOMED centers in the member-states will be well positioned to competitively respond with the collaboration of the regional stakeholders from government, water authorities, industry, research institutes and relevant NGO, to the EU calls for proposals and thereby generate the development funding for innovative solutions to upgrade their current practice.



5. **Communication & Infosystems for susTainable Intercultural Climate Adaptation & Resilient Ecosociety ("CITICARE" – Media, Art & Science Platform)** – The "CITICAE" Platform will focus on societal awareness raising towards a sustainable community climate adaptation and socio-cultural resilience, at all levels, through school programs, media sponsored cultural programs and innovation debates, stakeholders' engagement and intercommunication, as well as corporate awareness building for engaging a societal preparedness to extreme events. Special attention will be dedicated to deprived and disadvantaged communities and societal equity-based climate adaptation strategies and public health risks management. For this purpose, the Academy will promote an all-inclusive Mediterranean Dialogue, as part of the "MEDICAPP" Planning Forum, for public education of local governance officials, water operators, professionals, financial sector, youth and communities on water stress adaptation challenges and eco-sustainable, economically viable coastal development. The prime objective of the "CITICARE" programs is to support corporate and public education initiatives for promoting a societal resilience culture. For this purpose, the Academy envisions a world-wide media dissemination of debates as well as educational and innovation programs with awards competitions on creative solutions, integrating Art & Science, that will effectively stimulate young talents' breakthrough ideas and communication skills. These initiatives were explored and supported by media and policy experts at a round-table session of media and utility executives organized at the UNESCO EAUMEGA 2022 Conference.
6. **Metropolitan Eco-development Transition & Regional coOperation for Coastal Urbanization Planning ("METROCUP" - Stakeholders' Platform)** - The Academy's vision is that for the successful accomplishment of its goals and the impacts of its programs development on the current state of practice, the Academy has to become a regional eco-development partner of the local governments, water authorities, civil society NGOs and other regional stakeholders of the member states concerned. The Academy, with its Network of local ECOMED Centers in the member-states and its Host Institute, is expected to be well positioned to play a significant role in the regional eco-development by offering a regional stakeholders' platform of *Metropolitan Eco-development Transition and Regional coOperation for Coastal Urbanization Planning* (the "METROCUP" Platform). The purpose is to explore, promote and support stakeholders' partnerships of the local governments and water agencies with interested global and local stakeholders, which may include the financial sector, economic development corporations, relevant UN agencies, the World Bank, regional development banks, NGOs, and other strategic partners for feasibility assessment, planning and project financing of coastal eco-development projects, as well as for their implementation monitoring and impacts assessment.
7. **Information Management, Program Assessment & Communication Technology (IMPACT)** - The development of each Academy's program will include scientific monitoring, quality control and impacts assessment for regional eco-development at the local, regional and global network scales. The Academy's programs development challenges and risks are greatly dependent on its capacity to raise the public awareness of the current programs of local governments and water authorities, as well as to monitor and disseminate the impacts of its programs on the current state-of-practice of climate adaptation for regional eco-development, ecosystems monitoring and protection and resilience building to extreme events. For this purpose, the Academy's public information, program assessment and network level communication with stakeholders and strategic partners in the member states concerned, as well as the impacts assessment of its programs, are essential elements of its strategic program development. Their implementation envisions a world-wide dissemination of the Academy's programs and their impacts through publications, workshops, media programs, and other special events.

## **VIII. STRATEGIC DEVELOPMENT FRAMEWORK AND FINANCING MECHANISMS**

**Key Elements of the Strategic Program Development** - To accomplish the IHP ECOMED Academy's goals and meet the capacity building needs of the member-states concerned, the strategic program development, as well as the program financing strategy and resources management is expected to build upon 4 foundational support elements of:

- i) **UNESCO-IHP Collaboration** - It is expected that the collaboration with UNESCO, under the auspices of IHP, will contribute to facilitate the engagement of the active participation of the MENA/Mediterranean member-states in: i) the development of the Academy's programs and in identifying their priority capacity building needs; ii) the network development of the local Metropolitan ECOMED Centers for the programs adaptation to local needs; iii) strategic partnerships with relevant UN organizations, NGOs, funding agencies and other strategic partners for the development of the Academy's programs; iv) regional inter-university research collaboration; and v) world-wide dissemination of the Academy's programs, main results and impacts on the current state-of-practice.
- ii) **The Host Institute Research & Education Leadership and Management Capabilities** - CyI, as the proposed Host Institute, with its highly qualified research faculty and program management services is well positioned to provide technical, operational, financial and administrative management for the programs development. The Academy's financing strategy will greatly depend upon i) the quality of its programs; ii) their impacts on improving the state-of-practice of climate adaptation and resilience building to extreme events of the local governments and water authorities of the member states concerned; iii) the CyI leadership, outreach strategies,

information and communication efficiency with media, industry and education communities in the member states; as well as iv) the initiatives, commitment and competitiveness of the faculty involved in responding to competitive grants from EU programs, foundations and other national and international sources with quality programs and scientific record of publications. CyI record of more than 75M€ competitive grants and 83 active research projects demonstrates its faculty great commitment and research competitiveness.

- iii) **The Academy's governance capacity to promote** stakeholders' partnerships in the member-states concerned for establishing the local Metropolitan ECOMED centers, leveraging the resources for the development of their program(s), investments in research for innovative solutions, as well as for accelerating the planning, financing and implementation of coastal eco-development projects and ecosystems protection measures. For this purpose, the ECOMED Academy, with its Network of local ECOMED Centers in the member-states and its Host Institute, will be well positioned to play a significant role in the regional eco-development by offering stakeholders' platforms with workshops and shared knowledge/databases for promoting strategic regional partnerships.
- iv) **The Academy's Stakeholders' commitment**, including CyI, the IHP member-states involved, the W-SMART members, as well as other regional and global stakeholders, to meet the IHP goal of creating a Regional Center of Excellence for Coastal Ecosystems Protection and Metropolitan Climate Adaptation & Resilience Building. For this purpose, the Academy, with its network of local Metropolitan Centers in the member-states, will be well positioned to assume a regional role through the development and impacts monitoring of its local capacity building programs for professional education, creative research and innovation, public education for climate adaptation, and regional planning support programs that will effectively meet the needs of local governments and water authorities.

**Financial Resources for the Academy's Program(s) Development** – A wide variety of potential financial resources may be approached for the Academy's programs development. The choice of the potential sponsor(s) will greatly depend upon the specific program under consideration, its objectives, scope, beneficiaries, the principal organization(s) proposing the program, the strategic partners and their financial commitment, the current stature and experience of the proposing party (e.g., Host Institute, local ECOMED Center or Consortiums of Partners), its experience with potential sponsors and/or funding programs, as well as other strategic, operational, and contextual issues. While a detailed analysis of the potential funding sources for the wide variety of the programs is beyond the scope of the Concept Note, it is of interest to indicate for the generic clusters of programs envisioned potential funding sources, referred to Table 1.

Cluster of Programs	Program Objectives, Scope & Expected Deliverables	Potential Sponsor(s) or Stakeholders
<b>Ecosystem Monitoring &amp; Pollution Infosystems for Regional Eco-Sustainability</b> ("EMPIRE" - Knowledge Base) <b>Issues:</b> data ownerships & accessibility sharing; Multi-lateral Agreements;	<ul style="list-style-type: none"> <li>○ Ecosystem(s) pollution monitoring &amp; regional Knowledge /data-based for risk mapping &amp; assessment</li> <li>○ Environmental Risk assessment &amp; decision aid for Eco-development planning &amp; feasibility Assessment;</li> <li>○ Decision support tools for planning/financing eco-development projects;</li> <li>○ Stakeholders' agreement for data sharing management and co-financing of knowledge-base development</li> </ul>	<b>Stakeholders:</b> Gov. & Water Auth.; Hydro-Institutes; Universities; <b>Sponsors:</b> End-Users; GAFAM; Foundations; Funding Agencies; Eco-Development Corp.; Industry & Investors
<b>Metropolitan Eco-Development, Infrastructure &amp; Climate Adaptation Planning Platform</b> ("MEDICAPP" Stakeholders' Forum) <b>Issues:</b> Engaging Members states and their strategic & financial partners in local ECOMED Programs	<ul style="list-style-type: none"> <li>○ Engaging M-States in needs assessment for CAP</li> <li>○ Stakeholders' partnerships for Local ECOMED centers</li> <li>○ Strategic Development Goals for ECOMED Centers</li> <li>○ Capacity Building programs tailored to priority needs</li> <li>○ Regional development and ecosystems protection policy</li> <li>○ Case studies (or hackathons) for Professional Education</li> <li>○ Mediterranean Dialogue Workshops on Ecosystems Protection &amp; Eco-development</li> </ul>	<b>Stakeholders:</b> All-inclusive regional and local Stakeholders <b>Sponsors/Partners:</b> Relevant UN Agencies World Bank; Reg-Develop Banks; Eco-Develop Corp.; Metropolitan Governments
<b>Smart Urban Network for Resilient Infrastructure and Sustainable Ecosystems</b> (SUNRISE Programs) <b>Issues:</b> enrolling M-states	<ul style="list-style-type: none"> <li>○ Graduate Curriculum development and offering</li> <li>○ Climate Adaptation Management Training Workshops</li> <li>○ Academic Support for local ECOMED Centers program</li> <li>○ Impacts Assessment</li> <li>○ Graduate Curriculum/Courses Information</li> <li>○ Case Studies – Real-Life Laboratory</li> </ul>	<b>Funding Sources:</b> Educational Grants Tuition Fees Scholarships Workshop Fees
<b>Environmental Coastal coOperation for Research, Innovation &amp; Stakeholders' Education</b>	<ul style="list-style-type: none"> <li>○ Innovative Climate Adaptation Management Solutions</li> <li>○ Pilot Demonstration &amp; Performance Monitoring</li> <li>○ Research Facilities development &amp; Databases</li> <li>○ Tech - Adaptation &amp; Transfer (TAT) Workshops</li> </ul>	<b>Funding Sources:</b> EU Research Grants; Foundation Grants Government Grants

<b>("ECORISE" Programs)</b> <b>Issues:</b> Pilot demo-sites monitoring & financing; IP rights protection;	<ul style="list-style-type: none"> <li>○ Early Deployment Monitoring</li> <li>○ Integration Guidelines for Upgrading State-of-Practice</li> <li>○ Scientific Publications &amp; Workshops</li> <li>○ Regional Compendium of Pilot Demonstration sites</li> </ul>	Innovation Industry ICT Industry "Start-up" Financing Tech Incubators
<b>Climate Impacts adapTation Infosystems for Cultural Awareness &amp; Resilient Eco-society ("CITICARE")</b> <b>Issues:</b> multi-cultural & multi-stakeholders' context Socio-cultural p-adaptation	<ul style="list-style-type: none"> <li>○ Educational School Programs (K – 12 STEM)</li> <li>○ Cultural Events on Climate Adaptation Management</li> <li>○ Arts &amp; Science Exhibitions CAM in Cultural Centers</li> <li>○ Media Innovation Programs &amp; Awards Competitions</li> <li>○ Streaming TV programs, debates, documentary &amp; entertainment programs;</li> <li>○ Products dissemination for education and research</li> </ul>	<b>Funding Sources:</b> Gov & School Boards; Cultural Centers; Media Sponsors; Foundations; GAFAM/ICT Industry Media, Public at large;
<b>Metropolitan Eco-Transition &amp; Regional coOperation for Coastal Urbanization Planning ("METROCUP")</b> <b>Issues:</b> leadership and guidance of local governments	<ul style="list-style-type: none"> <li>○ Regional Stakeholders' partnerships platform for exploring &amp; planning, Eco-development projects</li> <li>○ Facilitating collaboration with regional and global stakeholders, UN Agencies, WB, Eco-dev corps. Others;</li> <li>○ Projects decision support with coastal infosystems, knowledge/databases &amp; monitoring capabilities</li> <li>○ Projects Oversight Monitoring &amp; Impacts Assessment</li> <li>○ Projects Oversight Monitoring &amp; Impacts Assessment</li> <li>○ Inter-states Agreements</li> </ul>	<b>Stakeholders:</b> National/Local Gov.; Water Authorities Hydro-Institutes <b>Sponsors:</b> Economic Dev Corp Regional Dev Banks World Bank Related UN Agencies
<b>Information Management, Program Assessment &amp; Communication Technology (IMPACT)</b>	<ul style="list-style-type: none"> <li>○ Public Information Management</li> <li>○ Impacts Assessment</li> <li>○ Outcome Dissemination, Publications &amp; Workshops</li> <li>○ Consistency with IHP Policy</li> </ul>	<b>Self-sponsored</b> by the Academy & Local ECOMED Centers

**Table 1 – Potential Funding Sources for the Proposed Academy's programs**

**Risks and Mitigation Strategies** - The challenge ahead is to successfully mobilize the participation of the MENA-Mediterranean member states and initiate the development of the ECOMED Network of Capacity Building Support Centers to accomplish the stated goals of the academy. The active participation of the member-states is the key element in this initiative, as they, as the stakeholders, need to identify their priority climate response development challenges, participate in the programs' development, adapt it to their needs through their local capacity building centers, undertake the coastal ecosystem monitoring and participate in an experience/knowledge sharing of research, innovation, and locally adapted solutions. The "ECOMED" Workshops hosted and co-organized by UNESCO from 2015 to 2019, with the participation of government officials, executives of national/metropolitan water agencies from the East Mediterranean member-states, NGOs, AFD, and water experts of W-SMART member-utilities have addressed this central issue and reviewed the initial ECOMED concept note with the governments of the member states involved, including Lebanon, Egypt, Israel, Palestine and Jordan. The member-states concerned welcomed the concept note which served as the basis for the current IHP resolution, and suggested to identify local ECOMED Centers in their home states. Other strategic challenges involve the inter-governmental policy for ecosystem(s) pollution monitoring with shared databases, which is a complex task of inter-state data sharing and will require a specific data collection and sharing multi-lateral MOU. With regard to research, innovation and deployment of innovative solutions EU models can be adapted for regional collaboration and IP right protection. The regional planning support for coastal eco-development projects, will require the leadership and guidance of the local governments. Such strategic issues are proposed to be discussed among the member-states at the initial phase of the related programs development.

## **IX. IMPLEMENTATION PLAN & INITIAL PHASE OBJECTIVES**

The Academy's strategic development framework is expected to include an initial phase of the pilot program development focusing on: i) the institutional constitution of the Academy, with a specific collaboration agreement to be established with the Terms of Reference (ToR) for the Academy's governance, programs development and their technical, operational, financial and administrative management, between the W-SMART, as the designated Secretariat, and CyI, as the Host Institute, and approved by UNESCO as the IHP secretariat; ii) the creation of several local Metropolitan ECOMED centers in the interested member-states; iii) the planning, scoping and initiation of the Academy's pilot programs, to be developed and implemented by the Host Institute and the network of the local ECOMED centers in the member-states; iv) organizing a donors and stakeholders colloquium to promote strategic partnerships for leveraging expertise and financial resources for their development; and v) establishing performance measures, initiating public awareness and professional education programs, and engaging their impacts assessment on accelerating capacity building of the local governments, water authorities, the research community and other metropolitan stakeholders. It is expected that the initial phase will enable to launch the implementation of pilot (36 months) programs at the Host Institute and the local Metropolitan ECOMED Centers in the member-states, to address their identified priority needs, as approved by the Academy Governing Council, under the auspices of the IHP Council.

### **The Objectives of the Initial Phase include:**

1. Constitution of the Academy and its initial Network of local “ECOMED” centers
  - i. Capacity Building Gaps & Priority Needs Assessment with the member-states involved;
  - ii. Institutional Constitution of the Academy and its Initial Network of “ECOMED” Centers;
  - iii. Identifying “Host” Institutes for the “ECOMED” Centers in the member-states concerned;
  - iv. Detailed planning of the pilot programs to be developed by the Host Institute and the local ECOMED centers in the member-states concerned (it is expected that this stage will involve 10-12 member states);
2. “ECOMED” Academy Colloquium for Donors and Strategic Partners (Fall 2023)
  - i. Donors Colloquium Objectives - feasibility assessment of the Academy’s pilot programs;
  - ii. Colloquium Planning with the member-states, identified donors and strategic partners;
  - iii. Introducing the Network of Delegates/Directors of the “ECOMED” Centers in the member-states;
  - iv. Exploring Strategic Partnerships (UN Agencies; Funding Agencies; IHP Centers; Stakeholders);
3. Specialized Graduate Education and Professional Development Programs (Fall 2023 – Spring 2024)
  - i. Promoting a Network of Universities in the member-states concerned;
  - ii. Training the Trainers Workshops at the Host Institute for the identified priority needs;
  - iii. On-site and on-line remote specialized courses for executives, engineers and service managers;
  - iv. Detailed planning of the Academy’s Graduate Program and Special Training Workshops, tailored to the identified needs of the target stakeholders in the member-states with the local ECOMED centers;
  - v. Workshop on Inter-State Case Studies identified at the “MEDCAP” Forum (or inter-state hackathons) that will demonstrate the Academy’s strategy to address the eco-sustainability challenges of the member-states.
  - vi. Compendium of current innovation demonstration sites in the member states involved.
4. Pilot Programs Planning with the ECOMED Centers in the member-states (2023)
5. Initial Development of the Coastal Ecosystem(s) Monitoring with shared knowledge and databases (Spring 2024)
6. Exploring Partnerships for planning and financing coastal protection and eco-development projects

### **Phase 1 - Feasibility Assessment & Pilot Program Development will include:**

1. **Establishing the Academy’s Terms of Reference for governance, organizational Structure**, development and management of the 3yrs pilot programs by the Host Institute and the local Metropolitan ECOMED centers;
2. **Feasibility assessment of creating pilot local Metropolitan “ECOMED” Centers** in the MENA/Mediterranean member-states, including exploratory discussions with local governments, UN organizations, water authorities, the financial sector, media and other stakeholders on the development and financing of their pilot programs;
3. **Planning the Donors and Stakeholders’ Colloquium** for launching the IHP “ECOMED” Academy, including pre-colloquium meetings with the local governments and stakeholders of the interested member states, financial sector, relevant UN organizations, water authorities, and other strategic partners for exploring their support.
4. **Planning of the Academy’s Pilot Programs** with the Host Institute and the local Metropolitan ECOMED centers, including a detailed budget proposal and identified potential sponsors, for pre-colloquium exploratory discussions with the member-states, Donors, relevant UN agencies, other financial stakeholders and strategic partners;
5. **Finalizing and presenting the Pilot Programs Planning Report** to the member-states, UNESCO, identified donors, stakeholders and strategic partners and integrating comments and recommendations in updating the report.
6. **Colloquium Organization (Fall 2023)** and preparation of the post-colloquium proceedings to be co-published with UNESCO, including the Academy’s constitutional declaration and the terms of reference for its development.

**The expected Phase-I deliverables** will include the post-colloquium proceedings, summarizing: i) the Terms of Reference for the Academy governance, the AGC and EMB composition; ii) the metropolitan ECOMED centers in the member states concerned and their priority needs assessment; iii) assessment of the coastal ecosystem pollution and protection measures; iv) the pilot programs implementation plans and expected impacts; v) donors and stakeholders’ recommendations for their co-financing strategies; and vi) the ECOMED Academy Constitutional Declaration.

## Annex 1: Detailed Scope of Programs

1. **Ecosystem(s) Monitoring & Pollution Infosystems for Regional Eco-development (“EMPIRE” Knowledge Base)** – The regional ecosystem(s) pollution monitoring and data-based mapping will support risk assessment and situation analysis for a Mediterranean environmental policy of ecosystems protection, effluent pre-disposal quality control and preemptive risk management, consistently with the provisions of the Barcelona Convention, the UfM strategy, the 2030 Agenda for Sustainable Development, and the objectives of the IHP-IX. The Host Institute will support a data collection and open access sharing platform for the ecosystem pollution monitoring in the member-states concerned.

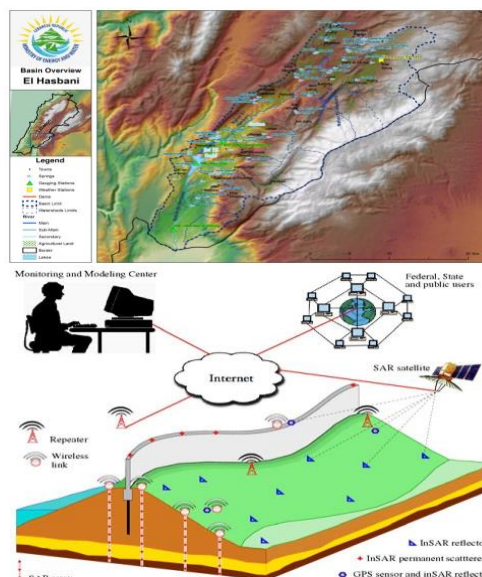
❑ **Initial datasets to be agreed upon among stakeholders for data sharing includes:**

- Hydrology network: water catchments, reservoirs, dams, canals, lakes, springs
- Groundwater bodies, wells
- Waste Water Treatment Plants
- Industrial waste water discharge
- Irrigated areas
- Administrative units (governorates, etc.)
- Protected areas
- Standards codes & classification for industry/economic activities & products

❑ **The Knowledge base should include:**

- Thematic data bases and applications on: hydrology, monitoring networks, water quality, pressures (urban areas, industry use, irrigated areas, permits, etc.);
- GIS linking the thematic databases with spatial information & data processing algorithms;
- Simulation models for IWRM & water allocation optimization, infrastructure planning, dam resilience assessment, water quality management, etc.;
- Economic and Environmental impacts assessment tools

(from C.I.F.M.E., Fadi Comair, 2018)



At the initial stage the coastal ecosystem environmental monitoring will be primarily based upon the data sharing of the existing hydrological and water quality monitoring systems of the member states concerned and their analysis using current hydrological models. The data content, format and acquisition frequency will be jointly defined and tested. The goal is to establish a regional knowledge base to effectively support an evaluation of the severe impacts of rising water scarcity, insufficient sanitation, deficiency of marine pre-disposal wastewater treatment, lack of effluent quality control of the ecosystem pollution, seawater infiltration, depletion rate of water resources, and extreme events on the ecosystem environmental sustainability, increasing public health risks, agricultural food security concerns, population displacement and environmental hazards. The development of this regional programs will be supported by the Regional Development and Ecosystems Protection Advisory Board.

2. **Metropolitan Eco-Development, Infrastructure & Climate Adaptation Planning Platform (“MEDICAPP” – Stakeholders’ Planning Forum for Capacity Building Priority Needs Assessment)** –As the IHP member-states concerned face a variety of climate impacts with significantly different hydrological, institutional, economic, societal, environmental and operational challenges, the development of the Academy’s capacity building support programs will require in-depth study of local climate impacts, operational challenges and local contextual conditions, in order to identify with the active participation of the local governments, the water agencies and other stakeholders their priority capacity building needs. The “MEDICAPP” annual forum will focus on engaging the stakeholders of the member states and their experts in: i) engaging the member-states in promoting and supporting local strategic partnerships for the constitution of local ECOMED centers; ii) identifying their regional mission and local goals, and scoping their plans to support local governance capacity building for ecosystem pollution monitoring and protection measures, climate adaptation and resilience building to extreme events; iii) framing the objectives and performance measures for the environmental, societal and economic impacts assessment of the identified priority programs; iv) promoting the development of customized professional development support programs to meet the specific priority needs and leveraging the resources required for their implementation; v) supporting consensus based development of coastal ecosystems protection policy, deployment measures, and eco-development management strategies, with investments in research and pilot programs of innovative, locally adapted solutions for responding to the coastal eco-sustainability challenges; and iv) promoting stakeholders’ partnerships for planning, feasibility assessment, financing and implementing coastal ecosystems protection measures, infrastructure management, sustainable sanitation and eco-development projects to meet regional SDG.

**Inter-states Case Studies** - It is also expected that the “MEDICAPP” forum will identify specific projects for case studies (or inter-state hackathons) that will demonstrate the intrinsic value added of the Academy’s regional strategy to address the eco-sustainability challenges of the member-states. These case studies are expected to provide reference materials for core courses of the Academy’s professional development programs. It is of interest

to note that the “ECOMED” Workshops hosted by UNESCO from 2015 to 2019, which preceded the IHP resolution, provided a similar metropolitan eco-sustainability development (ECOMED) forum with the participation of government officials, executives of national/metropolitan water agencies from the East Mediterranean member-states, NGOs, and other water experts. They illustrated that facing existential eco-sustainability challenges the experts of the member-states could jointly explore and develop consensus-based socio-technical concepts for inter-state IWRM strategies to address such eco-sustainability challenges.

3. **Smart Urban Networks & Resilient Infrastructure for Sustainable Eco-development (“SUNRISE” Programs)** – The purpose of the Academy’s Professional Education and Training Programs for Sustainable Climate Adaptation Management is to offer experience based state-of-the-art graduate programs and life-long specialized training for water experts, engineers, public service managers and other specialists of water authorities and local governments from the member states concerned for upgrading their capacity to better cope with the challenges of growing climate impacts, extreme events, water scarcity, ecosystem pollution and infrastructure assets management, focusing on eco-sustainable urbanization and renewable resources.

These multi-disciplinary programs, to be developed with industry support of the water agencies will address the local priority needs and climate risk management challenges of the member states with customized programs for integration of innovative technology solutions and smart monitoring systems to upgrade the current practice of metropolitan water resources and assets management. They are expected, more specifically, to address the challenges of water quality control and ecosystems pollution monitoring, climate risks assessment for human settlements, regional IWRM strategies and renewable resources, agricultural water reuse, resilience economics, crisis management and recovery strategies, socio-cultural adaptation and resilience to climate impacts, innovative solutions and best practice of climate impacts adaptation and resilience building to extreme climate events, and other strategic and operational challenges. It is envisioned that case studies identified at the Regional Eco-Development & Climate Adaptation Planning (MEDICAPP) Stakeholders’ Forum will provide real-life laboratory and reference materials for core courses of the Academy’s professional development programs. The courses, workshops and case studies (or inter-state hackathons) taught at the Host Institute will be available for on-line participation to accelerate their broader capacity building impacts.

4. **Environmental Climate coOperation for Research, Innovation & Stakeholders’ Engagement (“ECORISE” Programs)** – The development of the proposed “ECO-RISE” programs will involve strategic collaboration of the Academy, its Host Institute and the Network of local ECOMED Centers with local universities, IHP network of research centers, the academic community, High-Tech industry, water authorities and other potential partners for the research, development, pilot demonstration, early deployment monitoring and impacts assessment of innovative solutions. The “ECORISE” programs will focus on issues related to: i) innovative technology solutions for climate adaptation and coastal ecosystems monitoring and protection; ii) efficient integration of water reclamation and agricultural reuse for a sustainable food security; iii) pre-disposal effluent quality control; iv) socio-technical adaptation challenges to extreme climate events; v) public education for a societal resilience culture; vi) risks management and resilience economics; vii) integration of research and innovative solutions in environmentally sustainable coastal development strategies; viii) other relevant strategic and operational challenges. For this purpose, the Academy’s Host Institute will provide accessibility to research facilities, regional knowledge/databases and field monitoring systems and promote inter-university cooperation through workshops focused on research and demonstration of innovative solutions for regional eco-sustainability challenges. The local ECOMED Centers will enable “ECORISE” partners to cooperate with the stakeholders of the member-states concerned on a variety of eco-sustainability challenges and promote experience sharing and lessons learning among the member-states, their local governments and water authorities and research communities for adaptation of innovative solutions adapted by their peers to the local climate impacts and operational conditions. For this purpose, at the initial stage of the program development it is proposed to prepare a compendium of current innovation demonstration sites in the member states involved and explore the best way for lessons learning and adaptation of innovative solutions to different climate impacts and operational conditions of the water sheds involved. The “ECORISE” program will also provide a regional stakeholders’ platform for government and industry to invest in innovative technology solutions and smart water management systems for the identified needs.

5. **Communication & Infosystems for susTainable Intercultural Climate Adaptation & Resilient Eco-society (“CITICARE” – Media, Art & Science Platform)** – These initiatives will focus on societal awareness raising towards a community climate adaptation and societal & cultural resilience, at all levels, through school programs, media sponsored socio-cultural programs and innovation debates, as well as corporate awareness building for engaging a societal preparedness to extreme events. Special attention will be dedicated to deprived and disadvantaged communities and societal equity-based climate adaptation strategies and public health risks management. For this purpose, the Academy will promote an all-inclusive Mediterranean Dialogue, as part of the Metropolitan Eco-Development, Infrastructure & Climate Adaptation Planning Platform (“MEDICAPP”) Stakeholders’ Forum, for public education of local governance officials, water operators, professionals, financial sector, youth and communities on water stress adaptation challenges and eco-sustainable, economically viable coastal development.



The recent global pandemic crisis and the ever-growing climate change impacts on natural disasters and extreme events (e.g., tsunamis, sea-level rise, wildfires, superstorm surges, escalating draughts, etc.), have created unprecedented challenges to metropolitan governments, their public health institutions, essential service utilities, and civil society stakeholders. They have demonstrated the critical role of public education, societal risk-awareness and climate adaptation culture in responding to public health crisis and extreme climatic events. Societal resilience is recognized as a most critical element of accelerating the economic recovery of the fast-growing metropolitan society. For this purpose, the Academy's programs are expected to promote education, at all levels, public risk awareness and climate adaptation culture that will effectively support governance policy, disaster resilience investments and industry capacity building for eco-sustainable economic development. They are also expected to promote a global inter-city experience sharing among local governments, operators, industry, media, academia and other metropolitan stakeholders for lessons learning from extreme events and assessment of disaster resilience strategies. The prime objective of the "CITIPACT" programs is to support corporate and public education initiatives, professional development, and creative research with industry investments in innovative solutions. To accomplish its objectives the Academy envisions a world-wide media dissemination of debates, as well as educational, entertainment and innovation programs with awards competitions on creative solutions, integrating Art & Science, on creative and relevant solutions that will effectively stimulate young talents' breakthrough ideas.

6. **Metropolitan Eco-development Transition & Regional coOperation for Coastal Urbanization Planning ("METROCUP" - Stakeholders' Platform)** - The Academy's vision, following lessons learned and recommendations of the government officials, executives of water operators, and other experts who participated in the "ECOMED" Workshops hosted and co-organized by UNESCO from 2015 to 2019, is that for the successful accomplishment of the Academy's goals and the impacts raising of its programs development the Academy needs to become a regional eco-development partner of the local governments, water authorities, civil society NGOs and other regional stakeholders of the member states concerned. With UNESCO support, the ECOMED Academy, with its Network of local ECOMED Centers in the member-states and its Host Institute, will be well positioned to play a significant role in the regional eco-development by offering a regional stakeholders' platform of *Metropolitan Eco-development Transition & Regional coOperation for Coastal Urbanization Planning* ("METROCUP").

The purpose is to explore, promote and support stakeholders' partnerships of the local governments and water agencies with interested global and local stakeholders, which may include the financial sector, economic development corporations, relevant UN agencies, the World Bank, regional development banks, NGOs, and other strategic partners for feasibility assessment, planning and project financing of coastal eco-development projects, as well as for their implementation monitoring and impacts assessment. Such projects may include ecosystems monitoring, protection and depollution, agricultural water reuse, sanitation infrastructure and other regional eco-development projects, which may be proposed by the member-states concerned. The Academy could support such initiatives with its network of local ECOMED Centers, access to UNESCO experts, research capabilities, shared accessibility to a Mediterranean digital platform of regional knowledge/databases and ecosystems monitoring with mapping systems. It will also have the multi-disciplinary local expertise to support oversight project monitoring and impacts assessment for the government agencies and financing partners. It is envisioned that the case studies identified at the Metropolitan Eco-Development, Infrastructure & Climate Adaptation Platform (MEDICAP) Planning Forum could support a preliminary feasibility study for exploring and identifying with the local governments through regional planning such relevant eco-development projects. It is of interest to note that the Civil Society Initiative (CSI) of Palestinian and Israeli Mayors, which, under the auspices of the UN Secretariat, Office of the Under-Secretary for DPI (2006 to 2010), was at the origin of the inception of the ECOMED Initiative (2015 – 2019), has demonstrated ([UN-DPI2006](#) & [UN-DPI2010](#)) that facing existential challenges of water scarcity and escalating ecosystems pollution, the metropolitan governments of the states involved could jointly explore and engage feasibility assessment and planning of solutions responding to eco-sustainability challenges.

7. **Information Management, Program Assessment & Communication Technology ("IMPACT")** - The Academy's public information, communication with stakeholders and strategic partners, and impacts assessment, are essential elements of its strategic program development. Their implementation envisions a local collaboration with the academic community, the media, metropolitan cultural centers, educational institutions, regional universities and research institutions, civil society NGOs, the Art & Science communities, as well as the IHP network of research centers, and other stakeholders. It is expected to focus on: i) world-wide dissemination of the Academy's programs and their impacts through publications, workshops and other special events; ii) locally adapted public information and communication platforms with regard to the regional climate adaptation and resilient building programs to raise public support to government policies and investments; iii) impacts assessment of the Academy's programs on accelerating the capacity building of local governments and water authorities to raise societal awareness, undertake resilience building programs, and invest in research and innovation; iv) impacts assessment of rising public concerns on local government's strategies for investments in education and innovation for eco-sustainable coastal development; and iv) promoting inter-university and stakeholders collaboration. This self-sponsored essential service will be supported by the Secretariat and the Host institute.