D.2.2. Local plans of action for Bulgaria, Georgia, Ukraine – version 02., June 2023
Local Plan of Action for Ukraine

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Project title:	“Digital Blue economy and innovation Acceleration Network”
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Deliverable D.2.2. – LOCAL PLANS OF ACTION FOR BULGARIA, GEORGIA, UKRAINE

LOCAL PLAN OF ACTION FOR UKRAINE

Contents

1. INTRODUCTION

The development of a Regional Blue Growth Strategy including tailor – made Local Action Plans for target regions in Bulgaria, Georgia and Ukraine is carried out within the framework of the EMFAF-2021-PIA-FLAGSHIP project “DBAN - Digital Blue economy and innovation Acceleration Network”.

The project is implemented by a cross – border partnership led by the Burgas Municipality and composed of DIGIHUB, an NGO joint initiative of organizations from the public, private, non-governmental and the educational sectors in Burgas, IBEDC, an NGO established in Tbilisi as an innovative Business Support Organization and the Odessa State Agrarian University, a multidisciplinary institution of higher education.

According to the executive summary, the project idea was designed around the concept of establishing a regional blue growth acceleration network – based ecosystem which supports existing and emerging businesses and initiatives in the Blue economy sectors, building upon their potential for innovation, circular and bio-based solutions, as well as their capacity to contribute to the local/ regional sustainable development performance indicators.

The Needs Analysis which led to the project idea identified a series of gaps between research and entrepreneurship, between entrepreneurship and demand for innovation, between the needs of the sectors and the unexplored potential for partnership as well as between the potential of the blue economy sectors and the overall performance of the region in achieving environmental and sustainable development goals.

The gaps were confirmed by the research made in order to identify specific needs related to digitalization and use of innovative tools in order to improve the business environment and strengthen value chains. The approach consisted in a documentary phase followed by field research carried out by each partner based on answers provided by the stakeholders to a set of questionnaires.

There were three major groups of stakeholders belonging to business sector, public sector and NGOs and R&D organizations related to established blue economy sectors of fishing, aquaculture, maritime transport, and maritime tourism.

Based on the analysis of the received answers, the main identified gaps were:

- between the existing and the required capacity about smart business specialization
- the existing support services for enterprises and the actual needs of different blue economy sectors doubled but distorted or insufficient communication
- between the skills of graduates and the actual requirements on the labour market

- between the actual skills of employees and the new requirements generated by technological improvements and innovative processes

- between current managerial skills and the need of strategic thinking in a more and more competitive environment

- between the financing needs of both R&D and private sector in order to have access to state of the art equipment and technologies

- between the regulatory framework and the actual possibility of the private sector to comply with legal requirements especially when they involve sudden digitalization of processes.

The scope of this endeavor is to provide guidelines towards filling the gaps while considering the existing Local Action Plans of Municipalities in the target regions focusing on modernization and innovation of local value chains in the sectors of aquaculture and fishing, maritime transport, and maritime tourism.

2. BLUE GROWTH AND SMART SPECIALIZATION

According to the authors of the Blue Growth and Smart Specialization JRC Technical Report[1], the principles of Smart Specialization are valuable when implementing Blue Growth, an integrated approach towards stimulating the maritime economy. Both concepts pay considerable attention to **innovation**, **young firm formation**, **bottom-up approaches** and **value chains**.

Blue Growth is a concept which is used by the European Commission (DG MARE) to express the potential of Europe's oceans, seas and coastal areas for jobs and economic growth. Blue Growth is seen as an innovative way to develop a range of maritime activities that are often dependent on each other because they rely on common skills and shared infrastructure. Innovation is seen as a crucial factor for all sectors of the blue economy.

The concept of blue growth emerged from the need to overpass the problem that maritime economic activities cannot be sufficiently captured through a sectoral approach. Shortly after its launch, the Blue Growth concept obtained substantial momentum after its recognition through the Limassol Declaration (October 2012)[2].

Blue Growth' general aim is to promote smart, sustainable, and inclusive growth and jobs in Europe's maritime economic activities, both in the short, medium- and longer term. **Specific objectives** encompass promoting synergies and fostering framework conditions in support of specific maritime economic activities and their value chains, with a particular

[1] https://s3platform.jrc.ec.europa.eu/documents/20125/248836/Blue+Growth+and+Smart+Specialisation.pdf/f2ed7c31-80b0-a62b-e4b7-7e7e8a192085?t=1621268542601
[2] https://maritime-forum.ec.europa.eu/en/node/3060

focus on activities in the development / pre-development stage. As it is targeting the level of sea-basins, maritime clusters and localities, the concept is suited for regional strategies approach.

About the same time as Blue Growth concept gained importance, **Smart Specialization** had become a crucial concept in EU regional development. The notion of Smart Specialization describes the capacity of an economic system to generate new specialisms through the use of existing resources.

The Smart Specialization agenda responds to the need for transformation and modernization of the economy. It does so by exploring and exploiting (cross-cutting) niches of excellence, which requires integrated policy approaches. S3 is about developing new specialties to “maximize diversified specialization to gain competitive advantage” through a dynamic approach, by focusing on modernization and innovation of local value chains.

Even though Smart Specialization and Blue Growth have many commonalities such as **the focus on economic activities rather than sectors and the integrated approach**, it is important to review the two concepts together, and notably by identifying how the principles of Smart Specialization can be used to stimulate the maritime economy, creating more critical mass in distinctive domains of R&I.

Most studies on Blue Growth and Innovation or marine and maritime related Smart Specialization operate with the concept of **maritime functions** and acknowledge six such functions further on divided into a range of more detailed maritime economic activities.

The maritime functions are:

1. Maritime transport and shipbuilding
2. Food, nutrition, health, and eco-system services
3. Energy and raw materials
4. Leisure, working and living
5. Coastal protection
6. Maritime monitoring and surveillance.

An overview of the marine functions and associated activities is presented in the table below:

Table 1 - Overview of functions and maritime economic activities

Maritime Function	Activities	Description
1. Maritime transport and shipbuilding	**1.1 Deep Sea shipping**	International (freight) transport by sea with large vessels that often sail fixed routes (containers, major bulks) or tramp shipping.
	1.2 Short-sea shipping (incl. RoRo)	National and international freight transport within Europe and to/from neighbouring countries

		with medium sized ships. The same segments are found as under deep sea shipping.
	1.3 Passenger ferry services	Transporting passengers on fixed sea routes, national and international. Mainly intra-European. Sometimes this is combined with RoRo transport.
	1.4 Inland waterway transport	Freight transport on inland waterways in Europe, consisting of both fixed link services and tramp services.
2. Food, nutrition, health and eco-system services	**2.1 Catching fish for human consumption**	Extracting wild natural resources (i.e. fish, crustaceans, mollusks, algae, etc.) for human consumption. The final product is either raw or processed fish.
	2.2 Catching fish for animal feeding	Extracting wild natural resources (essentially fish) for animal consumption. The final product is mainly fishmeal and fish oil, which can be used by agriculture and aquaculture.
	2.3 Marine aquatic products	Farming of aquatic organisms, mainly for human consumption (mainly fish and mollusks)
	2.4 Blue biotechnology	Using wild and farmed aquatic living resources as precursors of bio-molecules used for high value products (health, cosmetics, etc.).
	2.5 Agriculture on saline soils	Development of agriculture on saline soils, through improving existing crops or adapting salt tolerant plants.
3. Energy and raw materials	**3.1 Oil and gas**	Extraction of liquid fossil fuels from offshore sources
	3.2 Offshore wind	Construction of wind parks in marine waters, and exploitation of wind energy by generating electricity offshore
	3.3 Ocean renewable energy	Offshore development and exploitation of a variety of renewable energy sources excluding wind, including wave energy, tidal energy, Ocean Thermal Energy Conversion, Blue energy (osmosis) and biomass.

	3.4 Carbon capture and storage	Caption of CO2 at large emitters and ship these to empty offshore fields and other favourable geological formations for long term storage as a means to contribute to sustainability targets.
	3.5 Aggregates mining (sand, gravel, etc.)	Extraction of marine aggregates (sands and gravels) from the seabed.
	3.6 Marine minerals mining	Deep sea mining of raw materials other than aggregates., including critical materials which have a risk of supply shortage
	3.7 Securing fresh water supply (desalination)	Desalination of sea water for fresh water usage (agriculture irrigation, consumer & commercial use)
4. Leisure, working and living	**4.1 Coastal tourism**	Shore based sea related tourist and recreational activities
	4.2 Yachting and marinas	Construction and servicing of seaworthy leisure boats and the required supporting infrastructure including marina ports.
	4.3 Cruise tourism	Tourism based on people travelling by cruise ship, having the ship itself as their home base of holidays and making visits to places passed during the trip
	4.4 Working	Employment and economic activities taking place in coastal regions
	4.5 Living	Residential functions and associated services in coastal regions
5. Coastal protection	**5.1 Protection against flooding and erosion**	Monitoring, maintaining and improving the protection of coastal regions against flooding and erosion.
	5.2 Preventing salt water intrusion	Measures associated with coastal protection works aiming at the prevention of salt water intrusion as a measure to protect fresh water functions in coastal regions.
	5.3 Protection of habitats	Measures associated with coastal protection works aiming at protecting natural habitats.

6. Maritime monitoring and surveillance	**6.1 Traceability and security of goods supply chains**	Equipment and services used for security purposes in the field of maritime transportation.
	6.2 Prevent and protect against illegal movement of people and goods	Monitoring and surveillance of the EU coastal borders using a variety of services, technologies and dedicated equipment.
	6.3 Environmental monitoring	Marine environmental monitoring is not a clear-cut function. It may cover water quality, temperature, pollution, fisheries etc.

In this context, a legit question arises: Which maritime economic activities can be considered innovative?

The JRC study on blue growth and smart specialization[3] made an analysis of the innovative potential of components of marine functions based on the idea that the components that are more mature are less susceptible to produce innovation while the components that are in the development phase are expected to strongly impact on innovation.

Using a set of indicators consisting of innovativeness, competitiveness, employment creation, policy relevance, spill – over effects and sustainability, the components that score the most were:

2.3 Growing aquatic products

2.4 High value use of marine resources (health, cosmetics, well-being, etc.)

3.1 Oil, gas and methane hydrates

3.2 Offshore wind energy

3.3 Ocean renewable energy resources (wave, tidal, OTEC, thermal, biofuels, etc.)

3.4 Carbon capture and storage

3.6 Marine mineral resources

4.2 Yachting and marinas

4.3 Cruise including port cities

5.1 Protection against flooding and erosion

6.1 Traceability and security of goods supply chains

[3] De Vet J-M., Edwards J., Bocci M. (2016), Blue Growth and Smart Specialization: How to catch maritime growth through 'Value Nets', S3 Policy Brief Series No. 17/2016

6.2 Protect against illegal movement of people and goods

6.3 Environmental monitoring.

Even though none of the components of the established sector of maritime transport and shipbuilding or the classical coastal tourism appeared to be among the innovation driven sub-sectors, it is important to keep in mind that there is need to combine innovative activities with existing activities in order to take advantage of critical mass and the knowledge basis existing in each region.

Besides working with the concept of maritime functions, both Blue Growth and Smart Specialization operate with the concept of **value chains**. The core activities for each maritime economic activity are surrounded by both upstream and downstream activities. Upstream of the value chain are suppliers of equipment and resources, who may also have their suppliers. Downstream are processing sectors and subsequently distribution and sales.

In most cases, both upstream and downstream there are land - related and land – based activities.

Under the circumstances, the **value net** concept proved to be useful. This is an analysis of social and technical resources within and between businesses. In such a network, there is a system of connected nodes, either people or role, that work together to produce and distribute goods and services.

Looking at the various components of maritime functions as networks rather than linear chains, has certain advantages concerning aspects of innovation and smart specialization. The process of innovation and entrepreneurial discovery is interactive, and cannot be captured through a linear downstream analysis. Introduction of enablers such as new technologies (e.g. digital technology, biotechnology, nanotechnology) and support services into existing value chains is a crucial aspect of smart specialization. It is also important to acknowledge the framework conditions upon which development of maritime economic activities depends, such as the need for ports but also new infrastructures such a smart grids and multi-purpose offshore platforms.

But most important, value networks are how ideas flow into the market and to the people that need to hear them. Due to the peculiarities of marine areas, many of them being peripheral locations, it is crucial that actors in the maritime economy can benefit from their own activities. And, in order to succeed, knowledge must be shared to create the best situations or opportunities.

There are different ways of creating “Blue value nets”:

- Expanding nets through suppliers and enablers consisting in either connecting several value chains (marine and/or non – marine) or use enabling activities from another field (e.g. from IT, biotechnology or nanotechnology) into an existing maritime activity.

- Sharing expensive infrastructure such as ports, platforms, research facilities including exploration vessels.
- Building Blue Clusters and Networks.

The ideas will be further explored in the context of the local action plans.

3. THE REGIONAL STRATEGIC FRAMEWORK

3.1. COMMON MARITIME AGENDA FOR BLACK SEA

The Common Maritime Agenda (CMA) for the Black Sea[4] is a sea basin initiative to enhance regional cooperation for achieving a sustainable Blue Economy in the Black Sea. It is developed in the broader framework of the Black Sea Synergy[5] and is complemented by its scientific pillar, the Strategic Research and Innovation Agenda for the Black Sea (SRIA).

Born as a partnership between the seven bordering countries: the Republic of Bulgaria, Georgia, the Republic of Moldova, Romania, the Russian Federation, the Republic of Türkiye and Ukraine, CMA was endorsed on May 21, 2019 as a follow up to the commitment of the 2018 Burgas Ministerial Declaration “Towards a Common Maritime Agenda for the Black Sea”.

The participation of the Russian Federation in the CMA as well as all forms of co-operation with the reginal and national Russian stakeholders has been suspended as a result Russia’s unprovoked and unjustified military aggression against Ukraine.

There are three main goals established and further developed into ten priorities as it follows:

Goal 1 - Healthy marine and coastal ecosystems

- Priority 1: Ensure the protection and sustainability of the marine ecosystem
- Priority 2: Address marine pollution and plastic litter
- Priority 3: Support sustainable fisheries and aquaculture in the Black Sea
- Priority 4: Supporting innovative marine research infrastructures in the Black Sea
- Priority 5: Encourage the production, management and sharing of marine and coastal environmental knowledge for effective environmental monitoring and observation

Goal 2 - A competitive, innovative and sustainable blue economy for the Black Sea

- Priority 1: Foster innovative business models, stimulate research and innovation, and sustainable growth and up-to-date jobs

[4] https://black-sea-maritime-agenda.ec.europa.eu/
[5] https://www.eeas.europa.eu/eeas/black-sea-synergy_en

- Priority 2: Promote transport and digital connectivity of the Black Sea
- Priority 3: Promote blue skills and blue careers as an engine for innovation and competitiveness

Goal 3 - Fostering Investment in the Black Sea blue economy

- Priority 1: Improve access to financial resources and promote sustainable investment in the Blue economy
- Priority 2. Promote maritime entrepreneurship and clusters.

The key concept behind CMA is regional co-operation in connection with European policies and funding mechanisms. The political coordination is provided through ad hoc Ministerial meetings, while the operational coordination is ensured through a CMA for the Black Sea Steering Group. Technical assistance is provided to the Steering Committee through the Black Sea Assistance Mechanism (BSAM). BSAM offers participating countries practical support to help meet the blue economy goals of the Common Maritime Agenda for the Black Sea.

The Agenda is funded by channeling and coordinating existing international, EU, regional and national funding, and by attracting private investments relevant to the three Agenda goals.

3.2. THE BLACK SEA STRATEGIC RESEARCH AND INNOVATION AGENDA (SRIA)

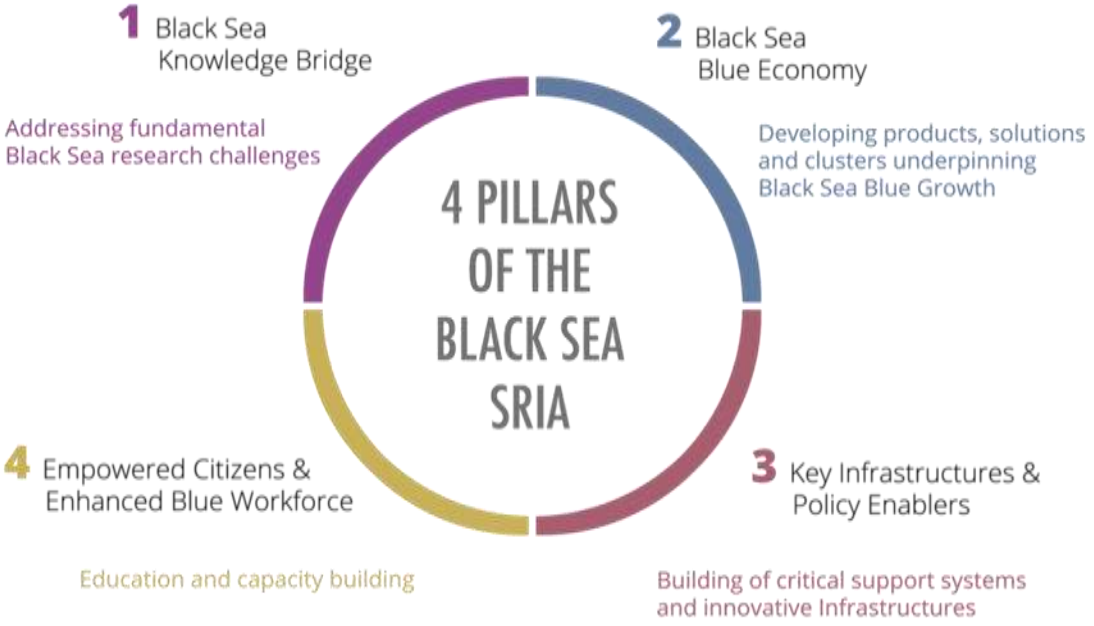
The development of the Black Sea Strategic and Innovation Agenda (SRIA) is a follow up of the *Burgas Vision Paper*.[6]

The Initiative has identified four main pillars on which a new set of research and innovation actions can be developed:

- Addressing fundamental Black Sea research challenges - Black Sea Knowledge Bridge
- Developing products, solutions and clusters underpinning Black Sea Blue Growth - Black Sea Blue Economy
- Building of critical support systems and innovative Infrastructures - Key Joint Infrastructure and Policy Enablers
- Education and capacity building - Empowered Citizens and Enhanced Blue Workforce.

[6] Burgas Vision Paper : https://ec.europa.eu/maritimeaffairs/maritimeday/sites/mare-emd/files/burgas-vision-paper_en.pdf presented on the occasion of the European Maritime Day in May 2018

Figure 1 – The four main pillars of the Black Sea SRIA based on the *Burgas Vision Paper*



Source: http://connect2blacksea.org/the-sria/

As there is synergy between SRIA and CMA, SRIA defines goals futher on devided into actions for each of the four pillars as it follows:

Pillar 1 – Black Sea Knowledge Bridge – main goals:

- Developing innovative multi-disciplinary research, building on existing initiatives, including data sharing mechanisms that will generate the knowledge needed to increase ecosystems resilience
- Providing new knowledge to mitigate the impacts of global climate change and the multiple environmental and anthropogenic stressors in the Black Sea from land-sea interface to the deep basin

Pillar 2 - Developing products, solutions and clusters underpinning Black Sea Blue Growth – main goals:

- Supporting marine and maritime research and innovation domains of all the Black Sea countries to create synergy, increase economic benefits, reduce hazards in service of prospering, resilient and empowered communities deriving interest from the Black Sea basin
- Creating incentives for maritime innovation in existing and new, emerging blue economy sectors

Pillar 3 - Building of critical support systems and research infrastructures for the benefit of Black Sea communities – main goals:

- Developing smart, integrated observing and monitoring systems in support of addressing scientific and socioeconomic challenges of the Black Sea, towards governance for a sustainable ecosystem, mitigation of climate change impacts, and accurate forecasting for adaptive management
- Advancing a harmonised set of working methodologies, standards and procedures on all aspects of coastal and marine research
- Developing new marine based technologies by benefiting from the fourth industrial revolution for the Black Sea to promote safe and sustainable economic growth of the marine and maritime sectors, the conservation and valorisation of marine cultural heritage
- Mechanisms to create, support and promote start-ups oriented towards the circular and blue economy in the Black Sea region

Pillar 4 - Education and capacity building – main goals:

- Supporting formal and informal learning, education, training and use of knowledge and technologies for established and emerging marine and maritime jobs
- Empowering ocean-engaged citizens contributing to a clean, plastic free, healthy and productive Black Sea
- Contributing to enhanced science policy dialogue in formulating coastal and marine policies and programmes.

Started as a process in 2017, SRIA is heading towards a new stage with the presentation of the Implementation Plan which is scheduled for May 4, 2023 in Brussels.

Both the CMA and SRIA encourage national initiatives and projects that are complementary to enhancing regional dynamics, promoting blue economy regional value chains, and untapping investment opportunities.

4. SWOT ANALYSIS. PRIORITIES

The choice of the priorities to be further developed within the Local Action Plans (LAPs) is based on the Black Sea Region’s strengths and opportunities, taking challenges and weaknesses into account.

The SWOT analysis compares the strengths and weaknesses of the Region (internal characteristics) with its opportunities and threats (characteristics of the environment). The distinction between an internal or external factor is determined by the possibility of the actors in the Region to influence them. If they do have this option, it concerns an internal factor. The confrontation of internal and external characteristics enables the identification of future issues that are of importance for the smart specialization strategy of the Region.

This SWOT is the result of an analysis of the state of affairs in the Region, based on documentary proof and the result of the research made within the gap assessment stage of the project. The Territorial analysis of the Interreg NEXT Black Sea Basin Programme 2021-2027 was also considered.

4.1. Strengths of the region

- Presence of academia and research centers
- Growing interest from the business sector in co-operation with RDI structures
- Available funding opportunities.
- Untapped potential for R&D initiatives and investments
- Wide access and an increasing trend of using Internet services

4.2. Weaknesses of the region

- Post COVID effects on blue economy sectors, e.g. decline of tourism and cultural and entertainment activities in the BSB area
- Quality of ports infrastructure around the Black Sea still needs improvements
- Slow transition towards green maritime transport
- Less progress with regard to intermodal transport.
- Rather low research and development expenditures in the BSB area. Support for research at national level is rather low.
- Lack of effective cross-border cooperation. There is a reduced number of models of implementing cross-border integrated strategies not only in the BSB region but also in other EU regions
- Reduced civil society participation in decision-making processes
- Challenges in adapting the EU regulations to the transnational context and to the legislation of the participating countries

4.3. Opportunities

- A smarter cooperation area, as part of the blue economy is a key objective of the Common Maritime Agenda and of the Strategic Research and Innovation Agenda
- In the context of the recent COVID-19 crises and restrictions, digitalization and online communication are to be considered for supporting education system and the labour market
- Investment in fully renewable fuels technologies, with green ports becoming hubs for energy production
- The marine aquaculture has been one of the fastest growing activities in the last years.
- The adoption of the legal framework for The EU Single Window Environment for Customs in December 2022 with a 2-phase implementation plan (2025 and 2031)

4.4. Threats

Common environmental threats

- Depleting marine resources
- Pollution (including oil and microplastics)
- Climate changes effects such as eutrophication/nutrient enrichment
- Biodiversity / habitat changes, including alien species introduction
- Large areas exposed to erosion.

Common geo-political threats

- Unprovoked Russian aggression in Ukraine and its effect in the whole Black Sea Basin
- Tradition of bottom -up approaches to policy processes

Besides the common traits, particularities of the Ukrainian Black Sea Region were also taken into account[7].

Strenghts	Weaknesses
- the dynamic development of ship repair and ship conversion which was a peculiarity of the pre-war Ukraine - important freshwater resources able to support aquaculture - a significant number of higher educational establishments and scientific institutions of the National Academy of Sciences of Ukraine located in the area - an existing Marine Cluster - the presence of a significant number of blue resort and recreational resources, such as therapeutic mud, mineral springs and routes including the unique place – “Kilometer Zero" - where river Danube flows into the Black Sea - the existence of significant digital national application and portal for SME (Diia)	- unorganized regulatory and legal environment - difficulties in adapting to technical regulations compatible with EU requirements - the absence of the State Register of Fisheries Water Bodies of Ukraine and the strategy for the development of fisheries and aquaculture in Ukraine - underuse of blue sector resources.
Opportunities	**Threats**
- the EU candidate status granted in June 2022 - EU Commission’s plan for longer term reconstruction of Ukraine combined with the already existing investment	- the whole country economy depends on the efficient functioning of the ports which are now paralyzed by the war situation

[7] https://ro-ua.net/images/Territorial_analysis_Romania-Ukraine_Programme_2021-2027.pdf and https://icbss.org/4biz-project/

attractiveness of the region (EU popularity and region attractiveness with rich history and architecture) - decentralization of power, growth independence of communities and reduction of pressure on SMEs - further digital transformation of blue sector - use of creative industries for the development of seaside areas and the extension of resort season.	- litter and inefficient waste management systems were identified as threats for all sectors - problems regarding work force consisting in a decrease in professional personnel and blue private sector doubled by a high level of labor migration abroad.

Even though the war is a major threat for the whole region, and it casts shadows on all potential designed actions, it is worth mentioning that periods of economic decline and political turmoil can enhance openness and willingness to embrace new maritime economic activities.

Based on the smart specialization targeted questions, the gap assessment identified a series of priorities for each sector that was subjected to analysis within DBAN project.

The following table establishes the connections between the marine functions that were identified by the JRC study on blue growth and smart specialization as having the best potential for smart growth and the needs identified by the DBAN gap assessment.

Table 2 – Marine functions with growth potential

Marine functions with growth potential according to JRC study on blue growth and smart specialization	DBAN findings – priorities for sustainable Blue Growth in BSB area
Growing aquatic products	Sea farming (both traditional: fish and mussels and innovative: crab and algae) is considered a priority especially due to depletion of natural resources in the Black Sea and legal problems such as fishing quotas. Modern seafood processing and distribution are seen as profitable businesses. There is a need for digital and AI tools for aquaculture.
Offshore wind energy	Increased energy efficiency and new energy sources – cross – cutting issue for all analyzed sectors
Yachting and marinas	
Cruise including port cities	

Traceability and security of goods supply chains	Creation of new products able to provide differentiation factors in a globalized tourism market. Improvement of operational equipment for both transport and handling and creation of logistic chains with a need for digital cargo handling solutions and digital flows of information both for business and in the private sector relationship with administration (customs, tax, port authorities). Security services and remote surveillance for off shore farming facilities Block -chain systems to control the origin of goods.
Protect against illegal movement of people and goods	
Environmental monitoring	Marine and coastal natural resources protection Marine spatial planning Waste reduction and circular economy Efficient waste management

As cross – cutting issues ICT tools to be used in both in B2C and B2B and e-services and e-tools for interaction with the governmental organizations were acknowledged in each sub-sector as well as a need for capacity building in terms of an increased capacity of professional associations, development of digital skills of the personnel and implementation of cybersecurity measures within the organizations.

Several priorities and concepts need some explanations in order to understand their relevance as potential triggers for growth in the region.

Aquaculture and fisheries appear to be more and more important in the context of the depletion of natural resources in seas and oceans, with a particular dangerous situation in the Black Sea. In the context, United Nations Food and Agriculture Organization (FAO) introduced the concept of Blue Transformation.

FAO describes **Blue Transformation**[8] as a targeted effort by which agencies, countries and dependent communities, use existing and emerging knowledge, tools and practices to secure and sustainably maximize the contribution of aquatic (both marine and inland) food systems to food security, nutrition and affordable healthy diets for all. It builds on existing successes while providing a framework to overcome sustainability challenges.

[8] https://www.fao.org/3/cc0459en/cc0459en.pdf

Besides other core principles, Blue Transformation is a knowledge-based process meaning that the formulation of transformative initiatives or interventions should be based on the best available scientific / research, data, technical, traditional, and local knowledge.

The benefits of technology in the fish farm sector are tangible and substantial. A fast-growing technological innovation incorporated in blue growth is the development of real time remote monitoring systems. Thus, aquaculture and fisheries are good candidates for growth based on smart specialization within a blue transformation process.

Europe's current and future sustainable economic growth and societal wellbeing increasingly draws on value created by data. In the context, **Artificial Intelligence** (AI) was identified as a supportive factor for developing solutions able to respond to needs of the blue sector. AI is one of the most important applications of the data economy. Simply put, AI is a collection of technologies that combine data, algorithms and computing power[9]. AI is a strategic technology that offers many benefits for citizens, companies and society as a whole, provided it is human-centric, ethical, sustainable and respects fundamental rights and values.

Under the circumstances, EU Commission is working to establish a policy framework to mobilize resources to achieve an "ecosystem of excellence" along the entire value chain, starting in research and innovation, and to create the right incentives to accelerate the adoption of solutions based on AI, including by small and medium-sized enterprises (SMEs). In the meantime, aspects like compliance with EU rules, including the rules protecting fundamental rights and consumers' rights (what it is called an "ecosystem of trust"), are to be considered in order to give citizens the confidence to take up AI applications and give companies and public organizations the legal certainty to innovate using AI.

Another concept that occurred during the survey is the **blockchain technology**. Blockchain enables data to be recorded in a secure digital format by providing real-time information on transactions between different parties, be they corporations, supplier networks, investment pools, or an international supply chain. Blockchain provides solutions for trade operations by simplifying cross-border trade, contributing to competitive improvements, and reducing transaction costs. A main application is related to fighting counterfeiting which is a massive economic problem that causes heavy financial loss to businesses operating across the globe.

One of the main anti-counterfeiting methods currently used is to affix holographic stickers or barcodes on the product to establish a product's authenticity. However, this method is no longer sufficient as due to advancement in technology accessible to counterfeiters the barcodes and stickers can now be copied convincingly as well. A solution occurred when

[9] https://commission.europa.eu/system/files/2020-02/commission-white-paper-artificial-intelligence-feb2020_en.pdf

companies started implementing blockchain technology on their products using smart tags such as QR codes, RFID tags or NFC chips.

Thus, blockchain technology can have a significant role in ensuring the traceability of blue economy products.

The survey identified **digital flows of information** both for business and in the private sector relationship with administration (customs, tax, port authorities) as a priority. The context is more than favourable for the implementation of appropriate solutions taking into account the fact that after almost 10 years of pilot projects and four years of preparations and negotiations, the Regulation establishing the EU Single Window Environment for Customs was introduced into the EU law in December 2022. The Regulation provides a new legal framework to improve information sharing and digital cooperation between customs administrations and other government authorities in charge of enforcing non-customs formalities at the EU border in areas such as health and safety, environmental protection, food and product safety, agriculture, etc. and will allow economic operators to clear certain customs formalities more easily.

The ECORYS study[10] identifies several synergies that are considered a pre-condition for future blue growth and development, while some activities put pressure on different sectors directly or indirectly, thus generating tensions. It is considered that an optimal strategy aims to avoid tensions and to optimize synergies. The maximization of such synergies can often be achieved through promoting **maritime clusters** and policies focusing on maritime clusters can make a difference. The classical definition of a cluster is the one given by Porter[11], i.e. ”geographically proximate group of interconnected companies and associated institutions in a particular field, including product producers, service providers, suppliers, universities, and trade associations, from where linkages or externalities among industries result”. Clusters are primarily market-driven and there are examples world-wide which demonstrate that clusters can provide powerful engines of growth and jobs.

The existence of the Maritime Ukrainian Cluster[12] is a clear advantage. The Cluster’s vision is to ensure the connection point for entire maritime sector that links with other players, global and national policy makers, and maritime organizations while its mission is to facilitate the Ukrainian maritime economy development through the consolidation of sea-related companies.

Under the extraordinary pressure and the exceptional conditions of the war the Ukrainian Maritime Cluster has launched fundraising programs for cluster members and partners. Thus, this a proof that such a support structure is able to go far beyond its initial purpose.

[10] https://maritime-forum.ec.europa.eu/system/files/Blue%20Growth%20Final%20Report%2013092012.pdf
[11] Porter, M. (1998). “Clusters and the New Economics of Competition”. Harvard Business Review
[12] https://maritimeukraine.com/en/

5. VISION, OBJECTIVES, LOCAL ACTION PLAN

The Assessment Gap previously performed identified similar needs and gaps in all three target regions of the DBAN project, with limited peculiarities mainly derived by Bulgaria's status as EU Member State and Georgia and Ukraine as members of the Eastern Partnership which has an influence upon the regulatory framework and funding opportunities.

The gaps to be filled are common to the priority sub- sectors for sustainable blue growth as mentioned above and mainly consist in:

- Discrepancy between the existing and the required capacity for smart business specialization
- Discrepancy between the existing support services for enterprises and the actual needs of different blue economy sectors
- Difficulties of communication and understanding in terms of needs and priorities between business sector and R&D sector
- Discrepancy between the skills of graduates and the actual requirements on the labour market
- Discrepancy between the actual skills of employees and the new requirements generated by technological improvements and innovative processes.
- Discrepancy between current managerial skills and the need of strategic thinking in a more and more competitive environment
- Scarcity of financial resources and / or bureaucratic barriers for both R&D and private sector in order to have access to state-of-the-art equipment and technologies
- Discrepancy between the regulatory framework and the actual possibility of the private sector to comply with legal requirements especially when they involve sudden digitalization of processes.

In order to cope with these discrepancies and to promote smart solutions able to support sustainable blue growth in target regions it is proposed a common vision and common objectives for smart specialization further on detailed into actions within the Local Action Plans.

The plans are thought to be disseminated among the stakeholders belonging to the business sector related to blue economy, public sector and NGOs and R&D organizations and to provide support for common approaches and decision-making processes.

The challenge for Black Sea surrounding regions is to jointly tackle innovation issues beyond chains and provincial regions. Only then the possible synergy will be used optimally, enabling strategic choices in terms of the knowledge and expertise in the area.

Common Vision: Facing the climate and economic challenges and the societal changes in BSB with an innovative – oriented approach.

Objectives:

1. Smarter blue economy in BSB based on better connectivity between business and R&D
2. Attractive tourism based on digital tools and environmental conscious choices
3. A region that fosters a culture of learning and upskilling
4. A greener BSB area based on technological innovation and clean energy sources

The aim is to achieve a higher share of original innovations, research and development activities and thus significantly increase the added value of production and related services belonging to Ukrainian Blue economy. The result will be transformed sectors oriented towards innovation and the creation of long-term jobs focused on the use of intellectual and creative skills.

Blue Economy LOCAL ACTION PLAN

Taking into account the circumstances under which the Local Action Plan is developed, as a result of activities within a cross – border project, the actions are recommendations that can be incorporated in any Local Action Plans developed by LPAs meant to promote smart specialization in the target areas, as well as in broader smart specialization strategies.

From the point of view of implementation duration, most actions are thought as mid – term interventions. The available data during the process did not allow an estimate of the financial dimension of the proposed measures.

Transversal themes such as green energy solutions, reduction of waste and development of circular economy - based products shall be taken into consideration with regard to all proposed measures.

Blue Economy Sub - sector	Related objective	Proposed action	Actors	Results	KPIs
BLUE TRANSFORMATION ACTIONS					
Aquaculture	**O1.** Smarter blue economy in BSB based on better connectivity between business and R&D	Develop high-tech aquaculture including multi-use platforms – particular interest in freshwater aquaculture	Businesses / R&D / partnerships	Competitive aquaculture actors Sustainable food sources	No. of high-tech facilities
	O1. Smarter blue economy in BSB based on better connectivity between business and R&D	Develop real time monitoring using remote sensors in fish farms	Businesses / R&D / partnerships	Reduction of costs Improved risk managemnet plans	No. of fish farms using the technology
	O1. Smarter blue economy in BSB based on better connectivity between business and R&D	Develop security services and remote surveillance for off shore farming facilities	Businesses / R&D / partnerships	Reduction of losses due to poaching / theft	Increased turnover and profit

	O4. A greener BSB area based on technological innovation and clean energy sources	Develop systems to allow powering remote sensors with marine energy	Businesses / R&D / partnerships	Reduction of costs Reduction of greenhouse gas emissions	Increased profit Tons of CO_2e
	O1. Smarter blue economy in BSB based on better connectivity between business and R&D	Support research projects regarding the impact of climate changes and invasive species in the BSB	LPAs R&D businesses	Local / regional / national policies and mitigation measures	No. of actions to mitigate the impact
	O1. Smarter blue economy in BSB based on better connectivity between business and R&D	Develop guidance and instruments on good aquaculture practices (GAPs) – with an accent on inner waters farms	R&D LPAs	Increased knowledge on sustainable aquaculture	No. of GAPs
	O1. Smarter blue economy in BSB based on better connectivity between business and R&D	Develop and promote indicators of aquaculture sustainability	R&D LPAs	Reliable and comparable system of indicators	No. of indicators
Fishing	**O1.** Smarter blue economy in BSB based on better connectivity between business and R&D	Support for the use of innovative marine technologies and IT monitoring tools for fisheries vessels, including small-scale fisheries	Businesses / R&D / partnerships	Increased efficiency and profit from fishing	No. of new technologies developed / implemneted
	O1. Smarter blue economy in BSB based on better connectivity between business and R&D	Facilitate the implementation of innovative data collection and management systems at local and regional level – closing the gap of a non-existing reporting system for recreational fishing and the lack of regulation regarding first sale and end-to-end accompanying documents for fish and other aquatic biological resources	National / regional / local authorities R&D Businesses	Increased safety at sea	Accesibile data sources Effective warning systems IUU Fishing Reporting system

	O1. Smarter blue economy in BSB based on better connectivity between business and R&D	Support for projects enhancing the valorization of catches and diversification of activities to maximize the economic benefit of the fisheries sector, in particular for small-scale fisheries	LPAs Businesses / R&D / partnerships	Added value for fisheries	No. of entities implementing new activities / processes
Seafood processing	**O1.** Smarter blue economy in BSB based on better connectivity between business and R&D	Develop food traceability systems using blockchain technology	Businesses / R&D / partnerships	Increased traceability More competitive products Increased trust from customers	No. of companies implementing blockchain based solutions
	O1. Smarter blue economy in BSB based on better connectivity between business and R&D	Promote and support the development of diverse practices and processes to reduce fish loss and waste	Businesses / R&D / partnerships	Increased efficiency of activity	No. of zero / reduced waste companies
MARITIME TRANSPORT ACTIONS					
Shiping	**O1.** Smarter blue economy in BSB based on better connectivity between business and R&D	Promote the implementation of modern navigation systems for sustainable and safe shipping	Regional / local authorities Businesses / R&D / partnerships	Safer navigation conditions Functional early warning systems	No. of implemented systems
Shiping and ports	**O4.** A greener BSB area based on technological innovation and clean energy sources	Improvement of operational equipment for both transport and handling – identified as a priority by most business respondents	Businesses / R&D / partnerships	Increased efficiency of maritime transport	No. of new / modernized ships and handling facilities
Ports	**O1.** Smarter blue economy in BSB based on better connectivity between business and R&D	Development and implementation of digital cargo handling solutions	Businesses / R&D / partnerships	Increased efficiency of maritime and intermodal transport	No. of digital tools
	O1. Smarter blue economy in BSB	Implementation of Single Window compatible system for Ports	National / regional	G2G access to data	Single Window system

	based on better connectivity between business and R&D		authorities in cooperation with EU	Reduced time and administrative burden for businesses	compatible with EU Single Window
MARITIME TOURISM ACTIONS					
Coastal tourism	**O2.** Attractive tourism based on digital tools and environmental conscious choices	Develop new and innovative tourism offers and services to promote synergies between coastal tourism and other activities (e.g. pesca-tourism, culture and underwater heritage, aquaculture, yachting) -Promotion of Odesa as a City included in the basic List of the World Heritage of UNESCO - Synergy with Agency for regional development of the Odesa oblast's interest in starting to work on Ukrainian "self-identification" in the region.	Businesses / R&D / partnerships	New products able to provide differentiation factors in a globalized tourism market	No. of innovative services No. of IT tools to support tourism industry
		Design coastal tourism developement based on marine spacial planning – relocation of some port infrastructure from tourism areas was identified as a need	LPAs R&D	Solutions for tourism development with respect to environment protection	No. of sustainable tourism areas / products
Cruise tourism	**O2.** Attractive tourism based on digital tools and environmental conscious choices	Develop and implementation of innovative solutions to reduce the environmental and social – economic pressure on local communities	LPAs Businesses / R&D / partnerships	Appropriate infrastructure for large ships with decreased impact on environment Tourism products that bring benefits to the local communities able to compensate	No. of tourism facilities / products

				the stressor caused by large number of tourist	
CROSS – SECTOR ACTIONS					
Support structures	**O3.** A region that fosters a culture of learning and upskilling **O1.** Smarter blue economy in BSB based on better connectivity between business and R&D	Support the existing maritime cluster, as well as new generation innovation clusters.	LPAs Businesses / R&D / partnerships	Improved cooperation across the regions and the implementation of the blue economy actions set in the Common Maritime Agenda. Diminished gap between the existing support services for enterprises and the actual needs of different blue economy sectors	No. of new clusters
	O3. A region that fosters a culture of learning and upskilling	Create, integrate and support incubators and techno parks for promoting SMEs, start-ups and innovative businesses for blue economy – using the experience of the Science Park Odesa Polytechnic University in fields like energy efficiency, clean production and environmental protection technologies, IT with respect to blue economy activities	LPAs Businesses / R&D / partnerships	Improved support infrastructure for start-ups and innovative businesses for blue economy Diminished gap between the existing and the required capacity for smart business specialization	No. of incubators No. of techoparks No. of supported companies

	O3. A region that fosters a culture of learning and upskilling **O1.** Smarter blue economy in BSB based on better connectivity between business and R&D	Promote mentoring and training for new start-ups and coaching for scaling-up companies in blue economy and blue growth at local/regional levels	Businesses / R&D / partnerships	Improved competitiveness of start ups and blue economy SMEs Diminished gap between current managerial skills and the need of strategic thinking in a more and more competitive environment	No. of entrepreneurs / companies trained / mentored
Human Capital development	**O3.** A region that fosters a culture of learning and upskilling	Promote blue skills and blue careers as an engine for innovation and Competitiveness	Businesses / R&D / partnerships	Skilled workforce Improved professional standards and sets of competencies	No. of new / imporved professional standards
	O3. A region that fosters a culture of learning and upskilling	Promote digital literacy (e.g. e-learning environments) and prepare for the rapid change in use and implementation of virtual technologies as an essential component of life long education in all fields of blue economy	Businesses / R&D / partnerships	Dimished gap between the actual skills of employees and the new requirements generated by technological improvements and innovative processes	No. of training programmes No. of trainees
	O3. A region that fosters a culture of learning and upskilling	Train policy and decision makers through dedicated activities for the efficient implementation of marine and coastal policies and management	Higher education entities LPAs associations	Improved decision – making process Diminished gap between between	No. of public servants and elected representatives trained

				the regulatory framework and the actual needs and constraints	

A crucial aspect for at least some of the proposed actions to be actually implemented is the identification of financial resources.

The special circumstances of the Russian agression trigger an unprecedented support reaction of the European Union. According to EU Commission[13], a major global financial effort will be required to rebuild Ukraine once the war is over. The EU is already contributing substantially to boost the country's ongoing resilience, but more support will be needed in the medium to long-term: to re-establish the foundations of a free and prosperous country, anchored in European values and well integrated into the European and global economy and to support it on its European path.

To support the reconstruction plan, the Commission proposes to set up the 'RebuildUkraine' Facility as the main legal instrument for the European Union's support, through a mix of grants and loans. The Facility itself would have a specific governance structure ensuring full ownership by Ukraine and a significant emphasis will be put on the rule of law reforms and fight against corruption. As far as investment is concerned, accent sill be on complaince with climate, environmental and digital EU policies and standards, aspects stressed within the present LPA.

To support the actions proposed the following sources should be also taken into consideration.

Horizon Europe[14] is the EU's key funding programme for research and innovation with a budget of €95.5 billion available over 7 years (2021 to 2027). Ukraine will be able to participate in research and innovation under Horizon Europe and receive funding from the programme. Currently, The European Commission is implementing a project within the Global Support Service Facility to facilitate a stronger participation of the 5 Eastern Partnership (EaP) countries Armenia, Azerbaijan, Georgia, Republic of Moldova and Ukraine in Horizon Europe, the EU's Framework for Research and Innovation, and in the European Research Area (ERA).

[13] https://eu-solidarity-ukraine.ec.europa.eu/eu-assistance-ukraine/reconstruction-ukraine_en
[14] https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe_en

It is worth mentioning that DOORS project (Developing Optimal and Open Research Support for the Black Sea)[15] is funded under HORIZON Programme. The project aims to make operational the Black Sea SRIA, support the successful Blue Growth implementation and contribute to a healthy, productive and resilient Black Sea.

Starting with September 2022, Ukrainian businesses, organizations, and public administrations are able to access the calls from the Digital Europe Programme[16], which has an overall budget of €7.5 billion for the 2021-2027 period. In particular, Ukraine will be able to apply for funding and support for projects in key capacity areas: supercomputing, artificial intelligence, advanced digital skills, and ensuring a wide use of digital technologies across the economy and society, including through Digital Innovation Hubs.

European Bank of Investment[17] started working in Ukraine in 2007. EIB operations focus on financing transport, small and medium-sized enterprises (SMEs), energy efficiency as well as municipal and social infrastructure, thus being a possible source for actions included in the LAP.

Ukraine's perspective of EU integration will facilitate future access to important financing resources related to the scope of this LPA, such as:

- InvestEU[18], the program that supports the provision of long-term financing for sustainable investments by attracting private and public funds. The InvestEU Fund aims to mobilize more than €372 billion of investment through the EU budget guarantee, which will be implemented by the EIB Group and other financial institutions, such as international financial institutions (IFIs) and national receptive banks and institutions. These implementing partners are responsible for deploying and using EU guarantees to support investments in businesses that fulfill specific policy priorities, in particular those in line with the green and digital transition.
- LIFE Program - an EU instrument for financing the environment and climate change that covers the following areas: nature and biodiversity; circular economy and quality of life; climate change mitigation and adaptation; transition to clean energy, all important issues on the EU agenda.

[15] https://www.doorsblacksea.eu/aboutdoors
[16] https://digital-strategy.ec.europa.eu/en/news/solidarity-ukraine-digital-europe-programme-open-ukraine-access-calls-funding
[17] https://www.eib.org/en/projects/regions/eastern-neighbours/ukraine/index.htm
[18] https://investeu.europa.eu/index_en

Even the present LPA was developed within a project that benefits of EMFAF[19] funding. EMFAF (European Maritime, Fisheries and Aquaculture Fund) supports SMEs in fisheries and aquaculture, EU maritime policy and the EU agenda for international ocean governance. It provides support for the development of innovative projects that ensure the sustainable use of water and marine resources. The fund helps to achieve sustainable fisheries and preserve marine biological resources. This leads to food security through seafood supply; the growth of a sustainable blue economy; safety and rational management of water resources

Last but not least, at the time the present document was drafted the 1st call of proposals Interreg NEXT Black Sea Basin Programme was open. Among the proposed actions there are several responding to both priorities of the programme, which are: Priority 1 - Blue and Smart Region and Priority 2 – Clean and Green Region.

[19] https://oceans-and-fisheries.ec.europa.eu/funding/emfaf_en

6. COMPLIANCE WITH ODESA MUNICIPALITY LOCAL DEVELOPMENT PLANS

Several strategic documents were taken into consideration to assess the synergy of the proposed measures with existing local and regional initiatives, i.e. the 2022 Economic and Social Development Strategy of Odesa[20], the Odesa City Investment Passport[21] and the Strategy of Odesa Region Development for 2021-2027[22].

While the Investment Passport is mainly a descriptive document giving a glimpse of the most important figures for the economic and social context of the city, the Economic and Social Development Strategy, although designed in 2013 with a time horizon for 2022 still provides priority lines, goals and tasks that are relevant today and will be even more relevant in the post war period.

The comparison is made between the strategic objectives and actions of the LAP and the provisions of the innovative scenario in the 2022 Strategy. The essence of the innovative scenario of development consists of economic specialisation of the territory (innovative transport, recreation, industry, agroindustry, finance and servicing), which is in line with the provisions of the LAP. The scenario is based on the partnership of business with the City and regional scientific institutions, introduction of new technologies in industry and the City infrastructure and formation in the long term of the innovative clusters.

In a similar way, the 2022 Strategy acknowledges the role of support structures. Thus, Priority line 4.1.: Competitive city (economy, business and investments) – formation and development of the competitive city convenient for business and attractive for investments is based on tasks such as:
- Creating conditions for formation and dynamic development of cluster (transport, tourist, clothing and agricultural products processing ones in media and IT spheres)
- Establishing a technology transfer center
Building an efficient innovative infrastructure which may provide the commercialization of the Odessa scientists developments and will promote organization of small innovative enterprises and development of high tech industries
- Holding contests for the young people innovative projects
- Organising the Odesa city incubator for the purpose of improving the conditions of small innovative enterprises establishment
- Establishing the industrial park.

[20] https://omr.gov.ua/images/File/DODATKI2013/strategia_eng.pdf
[21] https://omr.gov.ua/images/File/DODATKI_2018/Ekonomika/IBI_invest_passport_Odessa_2017_eng.pdf
[22] https://oda.od.gov.ua/statics/pages/files/5e4e655ff2e7e.pdf

Priority 4.2. aims at consolidating Odesa's position as a transport and business centre of the Black Sea Region encouraging the formation and dynamic progress of a transport cluster.

Priorities 4.4. and 4.5. are about the development of all kinds of tourism and proposes the development of a City brand and the creation of new tourism products based on the city's outstanding architecture, history and cultural identity.

Priority line 4.7. is about modern technologies for city government which is in line with the provisions of the LAP regarding the creation of digital solutions for data gathering and processing and training for policy and decision makers.

The Regional Development Plan for Odesa Region for the 2021 – 2027 interval provides a description of comparative strengths, challenges, and risks at a regional level and develops a set of scenarios going from the pessimistic one to the optimistic one. Even though turned even the pessimistic scenario into a desirable one, the priorities identified in the strategic document remain valid for the reconstruction period.

From the perspective of the present LPA, synergies are clearly identifiable with>

- Priority 2 – ECO Transformation
- Priority 3 - Globalization of the tourist and cultural environment and infrastructural development
- Priority 5 - Formation of the export-oriented food industry based on innovations

while priorities 1 and 4 are transversal aiming at the development of human capital (crucial for any type of intervention and development) and business support infrastructure.

Taking into account the synergies, it should be rather easy to promote the smart specialization-based actions within the broader context of local economic and social development.

7. DISSEMINATION OF THE PLAN

The idea behind the development of the present local action plan is to provide decision makers in the area as well as actors of Blue economy with a useful tool able to provide ideas and practical means for making a difference using the existing resources.

The most important channel is the DBAN platform and website were the English version as well as the versions in each of the national languages of the project (i.e. Bulgarian, Georgian and Ukrainian) will be uploaded.

The LAP will be disseminated during the final press conference presenting the achieved project results and regional initiatives that will be organized during month 21-22 of the project implementation in Ukraine as well as during the final conference of the project.

In addition to the means identified within the project, the OSAU will use opportunities whenever there are planned events related to blue growth and innovations in the Black sea region to try to attend and participate either physical or online with the objective to present and promote the DBAN network and its results including the present LPA.

A major aspect to be taken into consideration when designing any communication actions is that in terms of smart specialization, stronger partnerships between knowledge institutes and the business community can contribute to the valorization of ideas and knowledge. That is why communication and coordination between players must be improved. It is essential in this respect that various players start to speak each other's 'language': the usual jargon that policy and knowledge institutes use, is often not recognized by the business community; enterprises often find it difficult to find the right person because they have broad questions and proposals that do not fit the specific task of staff within knowledge institutes.

By promoting the LPAs, DBAN project can support a better understanding of how regional policies, RDI and local and regional blue businesses should meet towards common goals and mutual benefits.

8. MONITORING

The basic principle of any strategy monitoring system is continuous monitoring and collection of information related to its implementation. From the perspective of blue growth and smart specialization at least two sets of KPIs can be taken into consideration, i.e. key performance indicators for socio economic impacts and KPIs regarding funding absorption and generation of R&I related activities.

Relevant socio – economic KPIs able to measure the impact of implemented proposed measures might be: number of jobs or companies created / number of new services or products introduced to the market / productivity increase through the introduction of new processes/methods etc.

In terms of funding absorption and generation of R&I related activities, performance might be measured by indicators such as number of patents or number of connections company – university registered / established in a certain period of time.

KPIs related to the two sets were introduced in the LPA for each specific action.

Taking into account the fact that the present action plan is developed as part of a cross – border project, with limited resources and a limited period of time, the task of monitoring the implementation of the proposed measures will be assumed by each partner for its area.

A key factor in designing the local action plan was represented by the identified stakeholders who were involved in the gathering information process. They are also the

key factor for monitoring the implementation of the measures. The input from stakeholders including recommendations and observations on local Blue Growth policy, needs and potential for development will be incorporated into the second Policy Feedback Report.

Due to the fact that it is not possible within the scope and the means of the DBAN project to make a comprehensive monitoring regarding several sectors of Blue economy on a longer period of time, each partner will focus on a specific measure that is approached as in issue within the hackathon and will monitor the way the provided solution is important for a transformational process.

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ANNEXES

ANNEX 1 - ABBREVIATIONS

AI -	Artificial Intelligence
BESF -	Blue Economy Framework
BSAM -	Black Sea Assistance Mechanism
BSUN -	Black Sea Universities Network
CAM -	Common Maritime Agenda
DBAN -	Digital Blue economy and innovation Acceleration Network
DCF -	Data Collection Framework
DG MARE -	Directorate General Maritime Affairs and Fisheries
EC -	European Commission
EDP -	Entrepreneurial Discovery Process
EGD -	European Green Deal
EIST -	Economic and Innovation, Scientific and Technological (specialization domain)
E&I -	Economic and Innovation (specialization domain)
EMFAF -	European Maritime, Fisheries and Aquaculture Fund
ENMC -	European Network of Maritime Clusters
EU -	European Union
FAO -	Food and Agriculture Organization of the United Nations
FEDETON -	European Federation of Nautical Tourism Destinations

FPV -	Floating solar photovoltaic
GAPs -	Good Aquaculture Practices
GDP -	Gross Domestic Product
GERD -	Gross Domestic Expenditure on R&D
GVA -	Gross Value Added
H2020 -	EU Programme Horizon 2020
JRC -	Joint Research Center. The JRC provides independent, evidence-based knowledge and science, supporting EU policies to positively impact society.
KPIs -	Key Performance Indicators
LAPs -	Local Action Plans
NFC chip -	Near-field communication chip
MSs -	Member States
OSAU -	Odesa State Agrarian University
RFID tag -	Radio frequency identification tag
R&D -	Research and Development
R&I -	Research and Innovation
S3 -	Smart Specialization Strategy
SMEs -	Small and Medium - sized Enterprises
S&T -	Scientific and Technological (specialization domain)
STEM -	Science, Technology, Engineering and Mathematics
UN -	United Nations
VCA -	Value Chain Analysis

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