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Quest to Achieve Blue Growth Via Blue Education: A Differentiated Approach to Serve the Society

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Abstract: *The blue economy is considered parallel to the traditional economy and acts as one of the major drivers of growth and development (in the form of blue growth). The world is blessed with a coastline of 1.16 million kilometers, and many are declared maritime nations due to their larger coastal areas. As a driver to boost economic growth, this sector has immense potential; thus, it fastens the blue economy, but outcomes of this sector purely hinge on the relevant human resource (human capital), which acts as a catalyst to the blue growth, hence, generating desired outcomes human capital requires blue education which contributes in the national growth of any economy; the crux of blue growth lies in the blue education. As a maritime nation, Pakistan needs to prioritize this sector by promoting blue education to bring economic prosperity.*

Key Words: Blue Education, Blue Economy, Blue Growth, Critical Review, Gross Marine Production (GMP), Maritime Education (ME)

Introduction

The success of any nation lies in the effective and efficient utilization of resources where human resource is the most crucial one, which requires conversion of human resource into human capital. This transformation is only possible through education and training in the required domains. Similarly, Blue growth demands relevant human capital in the relevant domain, where education is the first step to meet such requirements. It is the prime duty of stakeholders to come up with the institutions of world ranking for blue education since the maritime cluster is handicapped with respect to educational requirements and their fulfillment. In the maritime domain, whether it is related to environmental protection, coastal zone development, the shipping industry, or the port sector, the means to educate people for all tiers and types is imperative. However, the under and post-graduate programs that contribute to the maritime industries' professionalism in maritime studies are offered by higher education institutions in many European and Asian countries. This emphasizes the demand for dedicated and Professional knowledge to bring change in the global environment. It is irrefutable that, from high labor to capital-intensive industries, the presence of tertiary education in maritime studies will transform the entire maritime industry (Pallis & Ng, 2011).

To supply manpower for the shipping industry is the main aim of blue education and training, as it could help in establishing the fundamentals of the seafarer discipline. Worldwide, in a multinational, multicultural, and multifunctional environment, the ship is the core element of shipping operations. Considering the entire aforesaid environment in such a complicated environment, the seafarer must be trained to facilitate operations demanded internationally to meet the international standards and regulations (Demirel & Mehta, 2009).

Oceans cover two-thirds of the world, facilitating economic development through transportation, supply chains, and natural reserves. However, they also support climate by absorbing 90% of heat from

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carbon and pollutants. Traditional modes are insufficient, and blue education is needed to capitalize on blue economies. (Aijaz & Butt, 2021). Nautical sciences, including insurance, freight-forwarding, maritime security, and shipping agency management, are closely related to maritime disciplines. Supplementary academic programs are necessary for improvement in these fields. Graduate degree programs and blue education in maritime technology are essential for managing shipping companies and the maritime industry. (Rowihil & BA Farag, 2021).

Pakistan's maritime history and rich heritage are evident in its large coastline housing and port structures, particularly in Karachi, a hub of shipping and industrial activities. Environmental concerns are crucial for coastal communities, and maritime industries must use sustainable methods. Pakistan should recognize the importance of new study areas in financial management, security, law, insurance, and environment, educating the young generation.
(Ali, 2009).

Objectives of the Study

1. To highlight the importance of human capital for blue growth.
2. To advise the framework of blue education.
3. Enlist the expected challenges in blue education, along with the possible ways to address the challenges through policy recommendations.

Research Methodology

This research paper has employed a critical review methodology to assess and synthesize existing literature pertaining to the importance of human capital for blue growth, the framework, and the challenges of blue education. The critical review methodology involves a systematic analysis of relevant literature published between 2019 and 2022. The selected literature is critically analyzed, and key findings, arguments, and methodologies are assessed. This critical review methodology involves evaluating the strengths and weaknesses of each source, along with identifying common themes, contradictions, and gaps in the literature. Also, the paper will provide a comprehensive synthesis of the existing knowledge about the topic. The paper is conducted to construct a coherent narrative that highlights the significance of blue education and human capital in the context of blue growth while also addressing the challenges and potential policy recommendations. This critical analysis may serve to inform and guide the conclusions and recommendations of the research paper.

Inclusion Criteria

Literature must directly address one or more of the research objectives, including the importance of human capital for blue growth, the framework of blue education, or challenges in blue education. Literature should be published between 2019 and 2022 to ensure relevance and currency. Furthermore, preference is given to peer-reviewed articles, research papers, and academic publications as they typically undergo rigorous scrutiny. Literature should be either specific to Pakistan or have clear applicability to the Pakistani context. Lastly, literature in English or with English translations is considered, as this is the primary language of this research paper.

Exclusion Criteria

Literature published before 2019 is excluded to ensure the incorporation of the latest research. In addition, literature that does not directly relate to the research objectives, such as studies unrelated to blue growth and blue education, is excluded. Non-peer-reviewed sources, such as opinion pieces, blog posts, and promotional materials, are excluded due to a potential lack of academic rigor. Last but not least, literature not available in English or without English translations is excluded to maintain consistency in language and accessibility. These exclusion criteria were selected to ensure that the articles included in the paper are of high quality, relevant, and reliable.

Conceptual Discourse/ Literature Review

Maritime education is defined as the process of gaining knowledge about maritime affairs that range from sea jobs to shore shipping management. Education also acts as a forward way in the fields related to supply chain management, logistics, transport, and legal. To achieve the specified educational objective, it acts as a set of interdependent processes that function harmoniously. These include teaching, learning, researching, and resources. In the maritime industrial and service sectors, it prepares human resources for a variety of careers (Alamgir & Chowdhury, 2019).

Aquaculture requires diverse skills, including blue education for professionals like veterinarians and biologists. Coastal tourism, a key component of maritime education, is also influencing the blue economy. Initiatives are being taken to attract domestic and international tourists, contributing significantly to the blue economy. (Islam & Sarker, 2021).

Marine biotechnology, or blue biotechnology, is crucial for blue growth strategies and improving ocean health and food production. With the extinction of commercial fisheries and over-exploitation, blue education and captive management are essential. This opens up unprecedented potential in marine sciences. (Askari et al.). Increased global interest in the marine environment and knowledge deepens motivation for conservation, leading to the use of new technologies in marine tourism (Simmons & McLean, 2020). The marine tourism sector faces technical and economic challenges due to a lack of blue education, preventing the development of innovative solutions for incorporating virtual and augmented reality technologies in sea voyages. (Kaźmierczak et al., 2021).

Overview of Blue Education and its Relation with the Blue Economy

Human resources that are well-trained, competent, and educated are the driving force behind the growth of an economy that can engage in corporate globalization and the resulting technological revolution (Alamgir, 2001). Without a trained workforce, dynamic and long-term development is impossible. Appropriate marine education and training (MET) is required for sustainable development after assessing the needs of the global market and local industry. Marine science, oceanography, ocean and offshore engineering, maritime logistics and transportation, and law all fall under the umbrella of MET (Baldauf et al., 2018). Some of the challenges that are encountered with regard to blue education are:

First of all, there is a lack of blue institutions in most of the countries. Secondly, if there are some institutions for education, training, and R&D, then there is almost no coordination among them. As a result, there is no synergy between them. The challenges have been exacerbated by an unanticipated increase in the number of private institutes (Alamgir, 2001). The absence of coordination is a significant impediment to successful blue education and blue economy. What happens generally is that the sea, in particular, and the maritime realm, in general, are undervalued. However, few developed nations place a premium on marine issues. Nonetheless, most policymakers are still unaware of the marine sector (Novaglio et al., 2022). Due to the lack of a distinct ministry for Maritime Affairs, maritime awareness and blue education push frequently fail to provide the anticipated results.

Moreover, The Blue Economy agenda includes tertiary maritime education. The formation of institutions that give education and training regarding aquaculture is a must for a stable economy. However, due to a scarcity of competent instructors, the course is challenging to provide (Alamgir, 2001). As a result, suitable faculty members are difficult to recruit during the early stages of development. Also, as a result, the institution frequently needs to rely on international and local professionals who are otherwise occupied with their individual careers. The lack of trained faculty is threatening the future of the blue economy in the developing world (Novaglio et al., 2022). Pakistan is well-positioned to create qualified people and resources in practically any field because of its vast, eligible population. A big army of experienced coastal and offshore engineers, navigators, merchant mariners, fisheries technicians, biotechnologists, legal experts, and a range of other professions might propel blue economic growth (Alamgir, 2001). There must be a lot of potential for seafaring jobs in private and state marine academies, as long as they can provide on-board practical training for aspiring seafarers and stay on the white list (Novaglio et al., 2022). Nonetheless, marine legal professionals, offshore and ocean engineers, and

maritime logisticians have a bright future in the exploration and utilization of massive water resources. In developing economies, this necessitates the creation of a single, centrally regulated MET (Alamgir, 2001).

In order to harness and fully utilize ocean-based resources, a range of productive economic sectors need to be emphasized and considered. However, a comprehensive framework of ecosystem-based management under a blue economy approach is required, and that could only be possible if blue education is instigated into the marine sector (Ochavillo, 2020). As the marine economy will certainly generate a strong foundation for huge earnings and economic benefits for the country, it will require properly planned and managed ocean spaces so that inter-sectoral coordination with public-private partnerships can be carried out. Therefore, blue education is essential for improving and boosting the blue economy (Alamgir & Chowdhury, 2019).

Blue Education Implementation

Synergy is critical for maximizing the efforts of many stakeholders and regulatory authorities. The challenges have been exacerbated by an unanticipated increase in the number of private institutes. In Bangladesh and in other Asian countries, the absence of coordination is a significant impediment to successful MET (Koondee et al., 2022; Marks & Breen, 2021).

Maritime (blue) clusters are a more thorough way to develop synergies and collect revenue. Cluster policies, in general, are thought to be focused on regional concentrations of interconnected enterprises and associated players (e.g., specialized service providers and universities) (Alamgir & Chowdhury, 2019). The idea of (maritime) clusters is to find ways to boost production, growth, and employment. This is accomplished by generating the following externalities or synergies:

1. Clusters serve as a focal point for the labor market, as well as the retention and development of skills that are critical for gaining a competitive edge and extending beyond the boundaries of particular businesses. Those that can recruit top talent have a significant edge over their competitors. Collaboration with specialized educational establishments in the field of training is beneficial to both parties (Tianming et al., 2021).
2. A key synergy and motive for enterprises to interact is its clusters, its members, and their goods and services in international marketing.
3. Maritime clusters involve infrastructure sharing, such as ports and inland infrastructure, as well as activity zoning. To avoid conflicts, not all marine economic activity mix well, and intelligent and coordinated maritime spatial planning is essential (Alamgir & Chowdhury, 2019).
4. It offers access to markets, enabling clusters to collectively handle future issues, and facilitates benchmarking and learning in the form of cross-border, transnational, and international cooperation (Tianming et al., 2021).

IMO defines marine domain awareness as an effective grasp of anything related to the maritime domain that might have an influence on security, safety, the economy, or the environment (Alamgir & Chowdhury, 2019). To achieve awareness, what is seen must be correctly understood, and visibility and comprehension must be communicated as broadly as possible among marine community members. Incorporating marine studies into secondary and upper-secondary education might expand maritime expertise and harness ME's potential for long-term NEG (Guo et al., 2021). In addition, a requirement for effective ME is a collaboration among universities, academies, and institutes that offer courses and do research in the marine sector. Otherwise, it could be preferable to combine all current maritime educational and research organizations into a single body, similar to India (Alamgir & Chowdhury, 2019).

Similarly, a dedicated training ship might guarantee that seafarers complete their sea time on schedule and encourage marine research. The majority of maritime universities, such as Shanghai Maritime University, have their own training ship (Tianming et al., 2021). This has

Greatly decreased the time a seafarer has to wait for a job and assured the quality of education. Acquisition of a specialized training ship might help ME realize its full potential and supplement National Economic Growth (Alamgir & Chowdhury, 2019).

Moreover, the volume of shipments is rapidly growing. The size and speed of the ships are increasing in lockstep (Demirel & Mehta, 2009). There is a need to investigate inventive training techniques and processes that will give calculated and tried-and-true speedy reactions in emergency scenarios to ensure safety in designated/charted routing systems (Guo et al., 2021). The utilization of comprehensive mission-based simulator training for its MET programs has shown to be beneficial in providing students with a learning edge when unanticipated risky events faced at sea were displayed to them in real-time simulations (Tianming et al., 2021). The logical conclusion is that, for the foreseeable future, widespread usage of simulators in MET is recognized as a necessary and an important prerequisite in MET institutions (Demirel & Mehta, 2009).

Role of Blue Education in Improving GMP

Education, in particular maritime education, plays a critical role in confronting the problems of the digital age. In the near future, the growth of so-called smart shipping will mean that investments in education and new types of skills will be as crucial as, if not more important than, technology itself (Alop, 2019). Also, oceans are one of the major determinants of our climate, providing nearly half of the oxygen required for human respiration. As a matter of fact, nearly 90% of all trade is facilitated by the sea, and approximately 3 billion people are directly or indirectly dependent on the sea for their livelihoods, whether through coastal tourism, fishing, energy, or other areas. Identification of major stakeholders in the ocean economy is critical since they are the GMP drivers that will enable the world to accomplish its long-term blue economic prosperity goals (Cisneros-Montemayor et al., 2021).

Moreover, blue education focuses on gaining a better understanding of a sustainable ocean-based economic model that is heavily reliant on coastal and marine ecosystems and resources, as well as one that uses ecologically responsible and inventive infrastructure, innovations, and practices, as well as organizational and financing accommodations, to achieve the goals of sustainable and inclusive development, coast, and ocean protection, and reduced environmental risks and ecological scarcity. It also covers topics like water, energy, and food security, as well

as safeguarding people's health, livelihoods, and welfare in coastal areas and promoting ecosystem-based climate change mitigation and adaptation methods, which has an inexplicable influence on GMP (Fang et al., 2021).

Additionally, it refers to all activities that have a direct reliance on the ocean or coastal and marine resources, as well as those that create products and services for the ocean and ocean-based activities (e.g., shipbuilding and repair, ports, tourist resorts, communication, maritime insurance and law, maritime technical services, etc.). Overall, providing an understanding of all such activities through blue education aids in the generation of economic values that are not typically quantified, such as fish and marine life habitat, carbon sequestration, shoreline protection, waste recycling and storing, and ocean processes that influence climate and biodiversity (Bax et al., 2022).

Similarly, an understanding of climatic variety plays a dynamic role in defining the extent of marine wealth, which has an impact on how to make more efficient economic decisions about marine resources. Since fishing involves knowledge of fish behavior and species, which is the root of the fundamental in enhancing performance. In other words, management systems and blue education may make it easier to

make decisions that influence fisheries productivity, which affects GDP and contributes to the country's prosperity (Cisneros-Montemayor et al., 2021). Furthermore, the main goal of providing education is to fill the gap created as a result of the emergence, and it could be executed by transferring innovation developed in design, delivery, and assessment. To have a complete understanding of automated systems, education helps in training seafarers, and education also allows seamen to develop the competence to handle and respond to automation failure as they work at sea and in ports. (Mallam et al., 2019). Education aids not only in the support of the marine sector but also in the endeavor to recognize trends and prepare the business for the future. In order to prepare young people for the future through activities, groups, and individual assignments, education is necessary as its philosophy is primarily based on skills and competence. Also, people could proactively respond to accidents and incidents at sea and in ports if they are yielded variety of other skills necessary for developing well-rounded and confident person

(Alop, 2021). Additionally, the current interaction between humans and seas is more intense than in the past. Oceans and oceans provide links between global governments, which have significant economic and transportation importance. When it comes to the volume of goods moved throughout the world, marine transport comes in first. The growth of marine transportation and related operations necessitated the hiring of more highly trained personnel capable of acting in a variety of situations. This is not a natural skill, but rather one that must be cultivated via particular instruction (Alop, 2021).

The first step in making the most of every opportunity that comes the way is to educate oneself and become aware of it. The marine sector and industry are in the same boat, as it leads to enhancements of GMP. The marine cluster is, to a large degree, disadvantaged in terms of educational demands and fulfillment. It has relied on sailors' practical knowledge and competence for employment in the shore industry for far too long. There is a demand for higher education institutions, just as there is in other fields. Whether it's the port sector or the shipping industry, coastal zone development, or environmental preservation, the ability to educate people at all levels is critical (Phewa, 2021). Moreover, blue education illuminates the blue economy, which supports a low-impact economic model that has emerged as a viable development path. In a blue economy, growth in income and employment in coastal and marine areas should be driven by public and private consumption and investments that protect biodiversity and ecosystem services, reduce pollution and carbon emissions, improve resource efficiency, and address water, food, and energy security for everyone (Cisneros-Montemayor et al., 2021).

Significance of Blue Education

At the school or university level, blue education has the potential to address numerous challenges. Regarding the environment and career opportunities with respect to maritime subjects, blue education is necessary in order to bring the required skills and knowledge as well as stimulate awareness. Appropriate Seafarer skills and knowledge are needed in the multifunctional and multicultural international maritime community; therefore, blue education ensures the provision of adequate human resources to the shipping industry. Also, in order to address or reduce the high level of risk associated with the maritime environment, education and training is utilized as a tool. Apart from creating awareness and career opportunities, blue education provides deliberate actions for creating policies to support the maritime sector (Grysole, 2019).

Without the continued involvement of residents and fishermen who are knowledgeable about the value of conservation, sustainable management of coastal areas cannot be effectively implemented. Therefore, education programs should take place over extended periods in order to provide conservation efforts that are meaningful and sustainable. However, with proper delivery of blue education, a continuous monitoring of blue education's impact should also be monitored in order to ensure that new perceptions and behaviors are actually taking root in people even after several years of training programs (Iqbal, 2019).

Social Impact

It is a matter of fact that Blue education is not just a subject domain of study but a strategy that categorically changes the entire scenario of Blue growth (combination of blue and green output) by exploitation of unutilized and underutilized ocean which generates employment and

growth, based on the concept of scarce land and water resources (Growth, 2012). This study is an attempt to highlight the importance of blue education, which entails not just economic optimization or more efficient resource use but also changes in the framework of current social relations by adapting norms, attitudes, and behavior as essential aspects of the economy, where vulnerabilities in the marine ecosystem may be mitigated (Reilly, 2012). As it specifies marine spatial planning by incorporating the maritime dimension of a particular use of coastal lines and leaving its footprints, blue education promotes creativity, innovation, and long-term holistic approaches for the improved outcomes from the ocean that bring prosperity and better life standards in society by reducing the level of poverty(Soma et al., 2015).

According to this paper, the role of public managers and policymakers may be affected by social advancement. Effective governance systems require transparent and inclusive decision-making procedures that are deemed legitimate by stakeholders, which necessitates the use of many forms of

knowledge (Holm & Soma, 2016). This isn't always possible in practice; because of the incompatibility of knowledge systems, maritime governance, for example, prefers to make decisions based on scientific data rather than local knowledge. Blue education promotes development that is inclusive of all stakeholders and smart by incorporating many forms of knowledge (Soma et al., 2018).

According to Bennett et al. (2019), blue education can have a significant influence on environmental sustainability as the economy develops. These environmental consequences could have social impacts, such as affecting people's health (environmental justice issues are likely to be borne by local populations and some vulnerable segments of society), livelihoods, or food security (due to impacts on productivity and abundance of resources), and ecosystem services that coastal populations and communities rely on for their well-being (Bennett et al., 2021). Inequitable distribution of benefits and burdens in society is sometimes exacerbated by ocean-based development, as per the study. Nevertheless, the economy's responsibilities are seldom accounted for through blue education, and local communities end up bearing the brunt of uneconomic growth (Nogué-Algueró, 2020).

Further, academia must improve its grasp of the environment-economy-society interdependencies and sustainable activities, as this information is essential for establishing blue education programs. Interdisciplinary should be emphasized in education programs to allow for the integration of different types of knowledge for the many components of the marine environment (Novaglio et al., 2022). The current trend of natural science bias should be avoided, and full social science integration should be the ultimate goal. In addition, a society that encourages critical thinking would demand reporting and regulatory requirements that take into account environmental externalities and contribution to welfare (Baldwin & Di Mauro, 2020).

Conclusion

Developing countries like Pakistan have been implementing economic reforms in order to accelerate growth and control inflation to meet macroeconomic goals. This can be achieved by shifting inward economic policies to outward and from closed to open economies. On the other hand, we are still struggling with our growth, debt burden, and inflation crisis. We must realize the fact that only demand and supply will not change our fate unless we use the resources provided by Allah the Almighty. Oceans are vital for the survival and revival of economies all over the world, and this precious resource of the sea, gifted by the Almighty, is not divided into islands but connected by their Blue Sea, which represents our future vision. As a result, the Blue Economy has emerged as a global option, and Pakistan and other developing countries must cherish their livelihood through Blue Governance, as their livelihood is dependent on the free passage of goods.

It is important to consider the enormous contribution of the blue economy to the global economy. In developing skills in youth to participate meaningfully in blue growth, youth empowerment in blue education and training is vital. In youth empowerment programs, it is crucial to include youth in policy and budget assessment through public participation. For youth-centric processes and development programs, the government must make youth responsible and provide them the ability to hold national and county governments accountable. Moreover, practical outcomes may be obtained by regular efforts aimed at supporting and efficiently organizing blue-related education, human resource training, research and development, public awareness, and the building of marine institutions.

The global economy is changing, and the marine industry, as part of it, is also progressing with new demands and requirements. To meet new challenges, the training system, approaches, concepts, and individuals engaged must all be reformatted. It will be difficult to change the current format of the marine training system, mentalities, or approach to the primary issues. The shift must begin with the next generation. Pakistan must learn from the experiences of other blue nations, such as the United Kingdom and Australia, and recognize the significance of new developing research fields related to the marine sector. We are required to educate our young people in the fields related to the marine sector, such as environment, insurance, law, security, financial management, supply chain, blue economy, etc., to upgrade our pace of marine and maritime operations.

Well-trained, skilled, and educated human resource is the driving force behind an economy's development. By allowing those to engage in business, globalization may produce a technological revolution. Without a trained workforce, dynamic and long-term development is impossible. After assessing the needs of the global market and local industry, it was discovered that suitable blue education is the basic requirement for long-term blue economic growth. Pakistan's private and public marine academies have huge potential for seafaring career prospects if it will provide on-board practical training facilities for prospective seafarers and remain on the white list. Nonetheless, marine legal experts, offshore and ocean engineers, and maritime experts have a bright future in the exploration and utilization of huge water resources. A unified, centrally regulated blue education can help Pakistan achieve its full potential and contribute to its economic growth.

Policy Recommendation

This study has provided several policy recommendations. Firstly, the study recommended that an effective and efficient maritime policy framework should be designed and aggressively implemented to develop Pakistan's blue economy through the development of seaborne trade, environmental protection, food production, and blue job opportunities, as well as facilitating global supply chains to ensure Pakistan's economic prosperity. Secondly, in order to develop ourselves as a maritime nation, special educational programs that not only raise awareness but also instill a sense of responsibility for our blue sea at the primary school level and advanced programs at the higher education level to develop blue human resources must be developed.

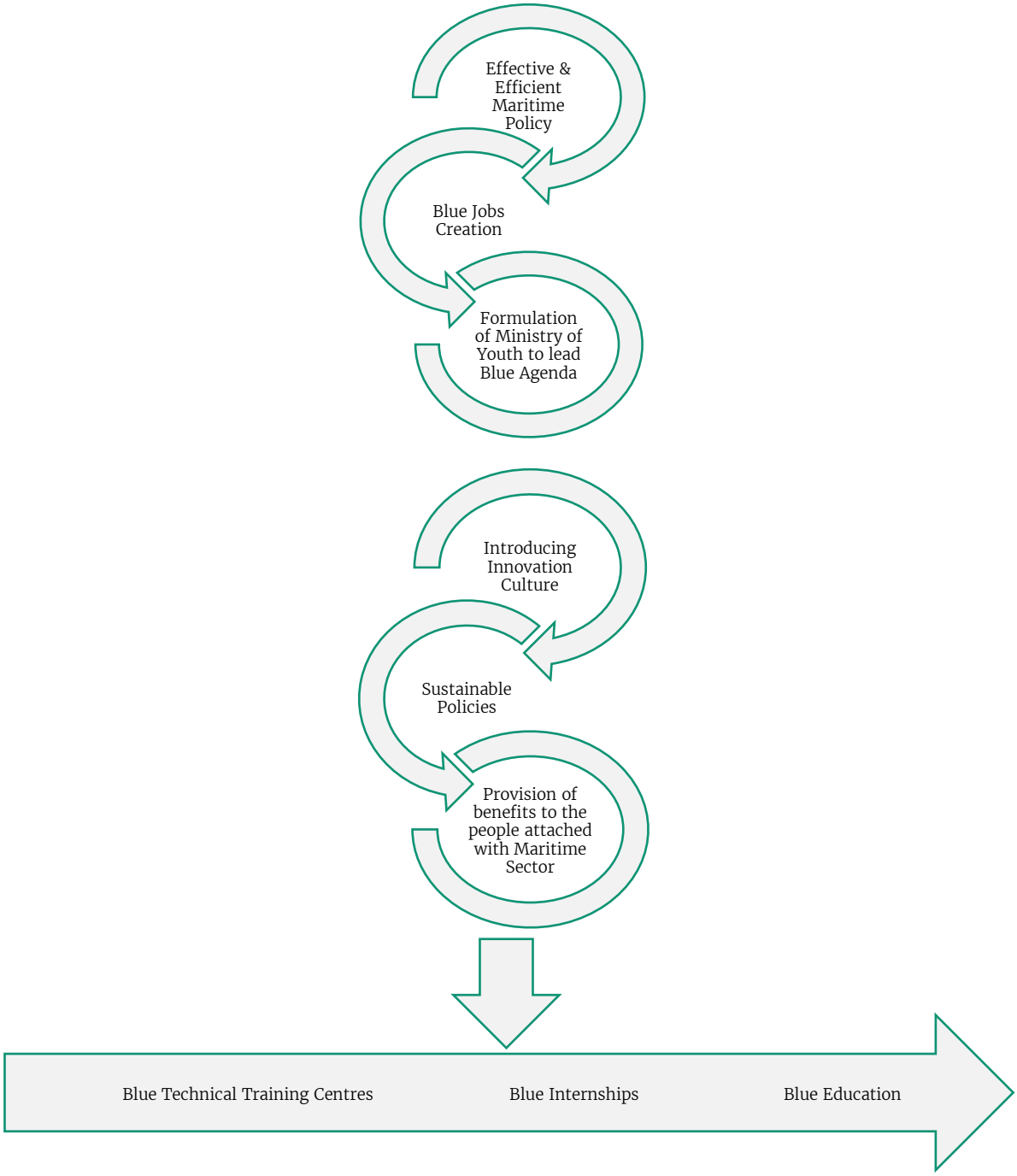
In addition, in order to boost the blue economy, it is the prime duty of the government to develop strategies and policies that support youth empowerment and education. The Ministry of Youth is anticipated to lead the blue economy's youth agenda, removing major hurdles to young participation in blue education, such as the skills gap, which will be addressed through an education system that provides appropriate knowledge and skills for blue economic technical roles. Moreover, blue education-related programs require governments to continue to support and strengthen existing institutions and initiatives. As a result, the youth at all levels of government and other organizations would fully participate, and marine issues could be integrated into national development planning properly. Most importantly, marine policies can be implemented effectively.

Additionally, the primary values and objectives must be realistically appealing, credible, and ambitious because of the strategic nature of maritime areas' minimum connection to the blue economy. Recognized by international and regional conventions and agreements, the universal principles and guidelines should be used for foundation. For all issues relating to the marine realm, the policy should establish clear objectives and a coordinating mechanism. This will result in fair and equitable means of balancing competing interests in blue education and youth empowerment in order to fully realize Pakistan's blue economy potential. The policy framework should also aim to encourage long-term socioeconomic development efforts by establishing efficient and responsible connections and ensuring that the benefits accrue equally and fairly to the youth. In the end, this will create a sense of collective responsibility, patriotism, and ownership.

In order to enhance the pull potential of marine resources and put forward Pakistan’s blue economy, the government should provide more innovative blue education policies. These policies will also help in empowering youth and increase and strengthen their abilities. It is implicated in promoting partnerships for a shipping system and the development of shipping lines. For better leveraging the ocean potential and cohabitation of activities related to coastal and ocean management, inter-sector research exchanges and impact analyses should be promoted. In the achievement of sustainable development goals, the government should promote maritime domain awareness and launch a maritime search program that contributes effectively.

Lastly, in order to meet the problems of increasing employability, vocational and technical training institutions should be built to promote maritime-related education. Additionally, when needed, special Maritime Industrial Zones must be established, and existing units must be digitalized to meet all technology standards. Maritime policy research institutes must also be established to design and examine

policies on a regular basis in order to improve their efficiency. Blue-related media programs, documentaries, and other programming must be developed and promoted in order to raise knowledge and interest in the Blue Economy and associated sectors among future generations. Maritime development contributes to the region's socioeconomic growth not just in terms of revenue but also in terms of job creation, business prospects, improved living standards, decreased poverty, and common man prosperity. To protect the environment and charge against carbon footprints, strict policy guidelines should be established for companies trading along the coastal belt.



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