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RESEARCH ARTICLE

THE DEVELOPMENTAL EFFICIENCY OF HIGHER EDUCATION IN IRAQ

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Abstract

Amongst the most influential factors of sustainable development at the national level, is the formulation of competent and efficient education capable of confronting the challenges of development at the national level and securing the happiness of the individuals/community at the present and future, with the full realization of the international development drivers. This paper showcases the principal challenges of development in Iraq and discusses the higher education developmental efficiency, based on its contribution to sustainable development and hovers on the presumable role of higher education in overcoming the development challenges' damaging effects through the main university's products; the student and research.

Key Words: education; sustainable development; challenges; renewable energy.

عنوان البحث

الكفاءة التنموية للتعليم العالي في العراق

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Introduction

The World Commission for Environment and Development (WCED) defined sustainable development (SD) as; development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs (UN, 1993). SD demands Sustainable Consumption and Production (SCP) in meeting the individuals/community needs, and simultaneously secure eco-efficient happiness (happiness based on environmentally efficient economy), as It simulates the linkage between the biological systems' carrying capacity (natural capital) and the human capability to meet the challenges of overusing/exploiting it (UN, 2015).

Sustainable development requires a national policy and comprehensive strategic planning (social, economic and environmental), that ensures the diversion of the social traditional habits/practices and the business sectors (public and private) from traditional/unsustainable to green/sustainable. The "Policy" can set the guidelines or rules that aim to influence the decisions and actions that reflect agreed practice on how to use the powers of authority (Stephen, 1987), while the "Strategy" provides (Action Plans) that would bring about the change through the implementation of this policy. Sustainability refers to the continuous mounting of; economic development compatible with comprehensive environmentalism directed for the community welfare, and attainable through a (Sustainable Development Strategy) which aims to minimize the consumption of natural resources, reducing waste and carbon emissions, optimal investment of human capacities and social relations, and maintaining the (industrial and financial) capital. Iraq faces fierce challenges (external, internal, and natural) that should be well addressed, and confronted by unconventional smart policies through adopting a scientific methodology based on sustainability, to ensure sustainable solutions that would secure the (psychological and living) stability for the Iraqi society at present as well as the future (Whistler, 2020).

Sustainable development strategy is a series of interconnected (social-economic-environmental) action plans integrated and harmonized, to magnify the SD Capitals. The laws and constitutions in addition to the community and culture inherited values, provide the most opportunities to protect and develop these capitals in many developed countries while failing to do so in the vast majority of developing and under-developing countries (Eckhardt, 2017).

Even though Education as a whole is the most important mechanisms of development, higher education (HE) is still noted as the backbone of the educational process. Despite the abundance of scientific competency in the higher education in Iraq, HE will remain incapable of the national development challenges and unqualified on setting the foundation of sustainable development, unless evaluated on quality and accredited according to its developmental efficiency (Ahmad 2017).

The Challenges of Sustainable Development in Iraq

Sustainable development in Iraq is facing several interrelated challenges, as an inevitable result to the interconnection between the development goals, whether being national (set by governments) or

international, represented by the earlier eight MDGs (UN, 2013) and the present 17 Sustainable Development Goals SDGs (UN, 2020).

The transition from conventional to sustainable development requires the abundance of economic resources to guarantee (green economy); developing economic resources without compromising the environment; decoupling development and environmental degradation (UN, 2013).

Iraq faces many significant challenges, with various (horizontal and vertical) impacts, on its transitional path to the green economy. Those challenges could be summarized as; unilateral economy with full dependence on oil exportation, food security and sustainable agriculture, and pursuing the corruption and corrupt individuals/institutions.

Challenge 1: Unilateral Economy; Full Dependence on Oil Exportation Revenues

In 2010 Iraq has been ranked as the 44th world richest country when its revenues amounted to just under $ 53 billion (photius, 2011) 96.9% of which was oil revenues, while in 2011 the oil revenues represented 88.8% of the total income (Al-Anbagy et al., 2011) and then to 93% in 2013 (UN, Joint Analysis Policy Unit, 2013). Therefore, it is considered as the major, if not the unique, economic resource for the Iraqi economy. Iraq seems to be determined to increase the oil production. According to the Iraqi Ministry of oil, the total oil production (except for the Kurdistan region-Iraq) in July 2015 became 3.718.000 barrels/day produced by oil companies (North, South, middle, Mayssan), 3.105.000 barrels/day of which was exported, while the rest was consumed (locally) in Iraq (Jonathan, 2003). Iraq's 2015 budget was based on an oil exportation of 3.3 million barrels per day (mbd) and a price of $56/barrel, while oil exportation revenues were estimated to finance 83% of the budget (Ahmed, 2015). According to estimates by the beginning of 2010, Iraq had proven oil reserves of 115 billion barrels representing the fourth oil reserve in the world. Then, in October 2010, Iraqi oil Minister announced the rising of oil reserves to 143.1 billion barrels, making Iraq the second in world oil reserves. On 27 June 2012, leading global and local press, published another declaration by the Iraqi oil Minister announcing that Iraq embraces 11% of the global oil reserves (Daily Mail News, 2010) while the latest international reports, issued in January 2015, mentioned that Iraq has 144 billion barrels of oil reserves (David, 2015) equivalent to 18% of the reserves in the Middle East and 9% of the world reserves and that Iraq aspires to increase production to 9 million barrels/ day in 2020.

Preserving this natural capital and ensuring its conversion to developmental goals is the most important tasks of the successive governments in Iraq and should be the empirical indicator of good governance. This mission requires a strategic planner that takes into account all the present and future, national and international, challenges based on current data and forecasting the oil future scenarios and its alternatives in light of the global one-polarity policy and effectiveness (globalization).

Global oil prospects beyond 2050 show five scenarios, which underscore the growing

demand on alternative and renewable energy and their inevitable dominance in the future (Arlie, 2002). In return, the United States Joint Operations Environment Report 2010 (JOE 2010) points out that the biggest security threats to the United States lies in the shortage of oil supply in 2030 which, according to the report, must be 118 million barrels a day that will be provided by; traditional oil sources and currently available energy markets (JOE 2010).

In light of the global oil scenarios, and the present confirmed realities, the followings should be taken into consideration:

1. The importance of energy to the (continued) global growth, at the near future.
2. The need to develop (economically feasible and affordable) alternative energy, over the long term.
3. Linking potential future conflicts (regionally and globally) with the abundance of energy and oil stocks.
4. The urgent need for energy to the American continuing domination and influence, within the reality of globalization.
5. The facts that oil wealth will become impoverished and the global oil stocks are declining (Hubbert, 1956).

Challenge 2: Food Security and Sustainable Agriculture

According to FAO, Earth population will become 9.1 billion in 2050, with an increase of about 3 billion people from today, mostly in developing countries. Urban population density will represent 73% of the world's inhabitants compared to the present 49%, which will be of a significant burden on food sources while the demand for food will increase by 70% (FAO UN, 2009), which requires the increase of the investment in food to 83 billion dollars a year (50 times more than current investment rates) to face certain challenges lie in the provision of food and the shortfall between the need of food in 2050 and investment rates over the past decade in food for medium or low-income countries. In a sense, to increase investment in agriculture by 50% annually to cover former food deficit and provided to the inhabitants of Earth 2050 (FAO UN, 2017).

Among the main challenges to provide food in the world, is the scarcity of arable land as a result of excessive use of growing biofuels, which was considered as one of the reasons for the global food crisis in 2008. The low greenhouse gas emissions that accompanied the successful development of the second generation of biofuels, will exploit 1500 million hectares of land in cultivation of biofuels by 2050, which is equivalent to the total arable land currently present in the world. Many countries were encouraged to invest in the cultivation of biofuels in other countries (Austria in Ethiopia, Kenya, Mozambique and Ghana in Canada, Germany, Ethiopia, Palestine occupied in Ghana and Ethiopia, Britain in Ethiopia, Angola, Ghana and Madagascar and Mozambique, Sierra Leone and Ukraine. And others) (UNEP, 2011).

Iraq will not be better than the other countries in its desperate need for food supply. As a result of

an annual population growth ranging from 2.66% to 3.00%, Iraq's population by 2025 will increase to 44.35 million challenged by the full drought of the Tigris and Euphrates rivers in 2040 (Mohamed et al., 2016) as a result of the neighboring countries' dams blocking the water stream along the rivers, and the assault of neighboring countries on Iraqi rights in water, the lack of a clear strategy for rural development and the failing to encourage farmers to return to their farms and abandoning land for many reasons.

Challenge 3: Resolving the Corruption Files and Following the Corrupt Individuals/Institutions

It's a pity to classify Iraq in 2010 as the fourth worst country on corruption among 178 countries, preceded (in sequence) by; Afghanistan, Myanmar and Somalia (Transparency International, 2010). In 2011, a new survey by the same organization ranked Iraq 175/182 (Transparency international, 2011), in 2014 Iraq was ranked 170/175 and in 2015 was ranked 161/168 while in 2016 Iraq was ranked 166/176 (By Resource).

The link between corruption and sustainable development is a direct-counterproductive relation. Corruption is the first constraint of any developmental achievement and has a direct negative impact on the poor people and the most vulnerable community sectors, which are unable to provide the bribes needed to secure their needs (in the corrupt countries) and accordingly obstructs their development and limits their participation in the development of their country. Corruption hinders the necessary institutional reforms needed to shift to a green economy and considered as a major threat to the (green path).

The American Institute of Peace issued a report in 2010 on the nature of the link between good governance, corruption, and conflict. The report clearly illustrates, through several (case Studies), how corrupt countries have been engaged in local conflicts that led to their total collapse (UNIP, 2010). The report defines corruption as the abuse of power by those who possess them and exploit their official status in the power entrusted to them for private gains and personal benefits. The report also stresses that corruption creates a system in which money and relationships, determines who has access to public services and to receive preferential treatment, and thus denying the poor people's right to develop and maintain their daily human needs.

Sustainable Development Comprises a Scientific Procedure Addressing the Challenges

The package of procedures and legislation set to achieve the SDGs is one of the most important indicators of good governance at the national and local levels, as they would secure the societal prosperity for the current and future generations. To achieve the planned developmental progress, it is essential to build up a Triple Partnership; full cooperation and close collaboration between the Government (decision makers), the whole community (civil society organizations) and the specialized institutions (experts and innovative techniques). The relationship and cooperation between the effective-developmental authorities (community, government and specialized

institutions) secures a promising future for the people (OECD, 2019).

Many countries might follow (unsustainable) development procedures and consume lots of the resources for developmental objectives, which might be secured but only temporarily, because they are not based on; SD-capital investment (human & social, natural, fiscal and manufacturer) and not managed by the (sustainability wheels; good governance, decision makers, and experts). The inevitable result for such (unsustainable) development is the return to the preliminary pre-development stage, but after wasting and depletion of the resources used to achieve the demolished development. The sustainability wheels must be geared to ensure a smooth transition of the SD-capitals to development goals capable of securing societal happiness coupled with eco-efficient economy (UNESCO, 2017).

To transform the traditional development to sustainable, there should be an interactive relationship between; green technologies, governance, and society. Such relation should secure sustainable living patterns characterized by (sustainable consumption of the natural capital) and (environmentally efficient production) to achieve a robust green economy enabling the happiness of both; individuals and society (Justice, 2019).

Research Developmental Efficiency in the Arab World

The educational process seems to be unqualified to halt the fierce challenges facing Iraq, as those challenges are persistently affecting the wellbeing of the Iraqis and increasingly endangering their future.

Education is a process that should set the developmental efficiency of its main products; the graduated students and research work. The lack of contact between the business sectors and the educational institutions has resulted to a full separation of the development pathways and the educational strategies. The graduated students are not satisfying the institutions where they serve and the research work is practically irrelevant to the needs of development (Johnes et al., 2017).

Arab scientists convened in Tunis in the first Arab Forum for Scientific Research and Sustainable Development in 20-22 December 2013. The forum was organized by The Arab League Educational, Cultural and Scientific Organization (ALECSO). Evidence indicates that the majority of research outcome in Arab region today (including Iraq) is in the form of published academic papers. Very few patents and other forms of intellectual property or commercialization of research outcome are registered. Arab countries also rank very low in other indicators that measure the impact of research and development on economic growth and development. One such indicator is KEI (Knowledge Economy Indicator) developed by the World Bank. Another indicator is the GII (Global Innovation Index). In the following table, Arab countries are listed along with their global ranking in published research in 2012, KEI and GII Table (1). The Table shows that 9 Arab countries have better ranking based on publications than other rankings, while Oman has a better ranking based on KEI. Jordan, Kuwait, Qatar and UAE are better ranked on innovation. KEI and GII indices of Iraq

and Libya are not available due to the lack of information (Samir, 2014).

Table 1. Research in the Arab World

Arab Country	Country Ranking (Publications)	Country Ranking (KEI)	Country Ranking (GII)
Algeria	54	93	138
Egypt	37	83	108
Iraq	71	—	—
Jordan	62	76	61
Kuwait	78	70	50
Lebanon	68	84	75
Libya	110	—	—
Morocco	56	94	92
Oman	81	53	80
Qatar	77	69	43
Saudi Arabia	39	48	42
Sudan	98	138	141
Syria	100	112	134
Tunisia	52	80	70
UAE	61	42	38
Yemen	117	121	142

Discussion

The institutions of higher education in Iraq annually provide tens of thousands of university graduates who are supposed to be well prepared to support the (green business) sectors, while the majority of them remain unemployed, or at the best conditions, developmentally inefficient/inert workers (mostly at the public government institutions), as a result of the developmentally inefficient educational process which should have supplied them with the professionalism and planning-capacity to confront the existing development challenges.

Traditional education is obviously incapable of meeting the aspirations of the Iraqi society, in the light of

the (3%) annual population growth, concluding that Iraq's population will be up to 60 million people in 2030, while the challenges overshadowing the present and future of Iraq are continuously mounting and alarmingly declaring the scarcity of the economic resources offset by an escalating per capita consumption rates as a result of unsustainable consumption patterns (Ala'din Alwan 2004).

Developmentally effective education should set its targets, in research work and curriculums (throughout all its stages), to meet the community's needs and to ensure the societal happiness in the light of the available resources and the developmental sectors' activities guided by the Sustainable Development Goals (SDGs) and national planning strategies (UNEP, 2016).

The higher education in Iraq bears a heavy heritage of incompetent earlier educational process. The universities' students' mentality, despite being the elites of the society, have remained contained by developmentally pointless elementary education that denies the present and possible future challenges. Nevertheless, the higher education remains directly responsible for developing the strategic planning mentality amongst the university students for two genuine reasons; that the university students are mentally mature and represent the selective educational youth age group, and also because of the distinctive educational status of the academic staff at the universities (Linda et al., 2020).

The HE-Policy should be formulated, based on a conscious awareness of the challenges facing Iraq and enabling the interactive partnership between the various educational institutions and the (public and private) business sectors, based on green growth policies and benefiting from the different specializations available at the HE to suit the requirements of the green market, and to be continuously updated according to the evolving challenges and need of the market (UNESCO, 2017).

The sustainable learning process ensures effective interaction and complementarity between education and the business sectors on the grounds of innovation, creativity and the development of the community. The most important expected outcome of this interaction is the transition from learning and research to rooting the knowledge and then to the production stage; characterized by promoting a culture of creativity and integrating it into the principles of the society (Storey et al., 2019).

It is equally important that the universities should be "sustainable", with entrepreneurial capacity to implement creative and interactive programs that guarantee graduated student capable of planning, in light of the human and natural facts.

Conclusions

Improving the developmental efficiency of HE could provide sustainable solutions for the executive institutions and business sectors (public and private) as well as the community's sectors.

It is essential to activate the education for sustainable development at the tertiary level, including the methods that are able to accommodate the developmental challenges facing the community and to provide the opportunities for the university students to address these challenges. The precepts of ESD demands introducing the challenges to the learners, educate them with modern developmental pathways, offer the learner the opportunity to diagnose the problems associated with those challenges and address them by studying and analysis, develop solutions for mitigation or adaptation, and finally participating in activating the solutions and sustain his success by monitoring the progress and evaluating the performance success.

Recommendations

Considering the escalating challenges of development in Iraq, and the need of updated educational process to eliminate their effect in favor of the present and future societal aspirations, it is imperative to;

1- Activate an interactive partnership between HE institutions and the business sectors, based on sustainable development perspective.
2- Every University should set a (National Development Supporting Strategy) illustrating the business sectors the university is capable of supporting.
3- Defining the HE-Quality according to development goals.
4- Redesigning the HE courses and curriculums to simulate the challenges of sustainable development at the national level with full consideration of the global SDGs.
5- Developing the appropriate indicators for (HE Developmental Efficiency).
6- Engaging the HE students in annual/tertiary development capacity building programs.

Disclosure statement

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