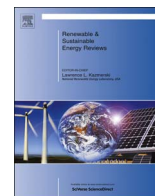




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Educating labour force for a green economy and renewable energy jobs in Turkey: A quantitative approach



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ABSTRACT

Today, the struggle of man against nature has reached the point where nature has been objectified and dominated by resource exploitation as we are faced with huge problems like decreasing natural resources; destruction of climate-ozone layer-glaciers; altering the rhythm of seasons; global warming; decreasing agricultural areas and more negative conditions brought on by the burgeoning human population. These problems threaten the life of all living creatures in the natural world itself. One critical factor is that humanity must harness the ability to create truly renewable energy sources instead of depleting the natural resources directly in order to generate the energy to sustain the lifestyles of today. One aspect of this struggle is to educate the leadership and labour force to actively realize green economies and jobs in the renewable energy sector. In the Turkish educational system, there is a true disconnect between the educational system and the labour markets that is causing a rise in unemployment rates among graduates. Educating green collar workers is an important opportunity for Turkey to develop consistency within the labour markets that have rapidly weakened since 2000. This paper presents an overview of educational policies regarding the development of a green collar industry by facilitating renewable energy jobs through vocational-technical high schools and graduate and post graduate university programmes. It also analyses state policies on popularising business and industry to actually create green collar jobs for the development of a new social paradigm of sustainable development.

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Abbreviations: ILO, International Labour Organization; MoNE, Ministry of National Education; SSAC, Student Selection and Allocation Centre; VQI, Vocational Qualification Institute

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1. Introduction

In recent years, the economic understanding in the world is evolving to embrace a new concept of a green economy that the United Nations (UN) has been developing since the 1990s. Green economy focuses on renewable, alternative energy sources to fuel sustainable development instead of depleting natural resources directly for development as this is not forward-looking. Sustainable development is a growth industry as are renewable energy sources [1]. A green economy is based on the use of renewable energy sources that can make life on earth sustainable by valuing the lives of all living creatures and preserving them for the future. Also green economy is an economic development based on the sustainable development model [2]. Finally, there is recognition of the importance of renewable energy as a great need for the future of the universe as we know that it is a driving need for developing countries like Turkey to get ahead of the curve by taking maximum advantage of their potential of renewable energy sources [3].

Renewable energy has potential as a raw material for industries such as electricity production. According to the 10th Development Plan of Turkey (2014) [4], which includes the years of 2014 through 2018, by 2018, the share of renewable resources used to produce electricity will be 29%, up from 27% in 2012 and 25% in 2006 (Article 784). Using renewable energy sources will have a great impact on the future of Turkey's economy. It is projected to emerge with needs of a new labour force to work and achieve the economic goals set for the unrenovable energy sector in Turkey. Studies by Cetin and Egrican [5] have determined that the photo voltaic (PV) industry alone in Turkey will create 346 jobs/MWP in installation, 2.7 jobs/MWP in operations and management, 10 jobs/MWP in PV panel production and an additional 36 jobs/MWP in the wholesale, retail, installation and maintenance services sectors. Such predictions define a different type of human capital requirement for the future that requires the education system to match up to the different need.

The source of this human capital is already present in the current education system that must secure stronger links with the economy and employment possibilities that can correspond to an individual as well as collective return in human lives and social development for the state. The neoclassical theory which is one of the normative theories on the relationship between growing the economy and education is that the major function of schools should be to prepare appropriate number of workers with the appropriate skills and behaviours to advance production systems [6]. This theory has been valid in Turkey for a long time and also in other welfare states established after the Industrial Revolution. States have made investments in education and the response has been a positive indicator for the development and increase in Gross Domestic Product. Individuals have also made investments in education to take advantage of the creation of new jobs in new industries. At the micro-level, the strong links between economy and education generate expectations regarding education by large masses of people.

In Turkey, the agenda for education has been seen as an important variable for economic development and its strong nexus with the economy has been seen beginning in the 1960s. Education is an increasingly important factor for increasing the productive human capital, which is one variable of the Production Function according to neoclassical economic theory [7].

Unfortunately, the links between education, employment and economy have weakened in Turkey due to major changes in the labour markets after the year, 2000. The value of education while searching for a job has decreased, especially for people with a university degree. The unemployment of graduates has increased and the structure of unemployment has changed. These changes are driving social mobility between levels of society, which used to be based on higher education. One of the main reasons for weakening the links of education and employment is caused by the lack of appropriate modifications in the education system so as to stay abreast with the needs of the economy. An educational system must train labour by taking into consideration the availability of employment for graduates from universities and offer courses that correspond to the specializations emerging in the job market that do or do not require higher qualifications [8,9].

This article is an evaluation of the policies of the Turkish education system regarding their goals to educate and graduate students prepared to work in a green economy. In this study, we refer to such workers as green collar workers. It will also evaluate the efforts to strengthen the links between the economy and education as the economy evolves with the world to a more green economy for true sustainability.

2. Theoretical background

2.1. Historical links between education and economy in Turkey

Education has social, political ideological, cultural and economic functions. One of the social functions of education is to indoctrinate students into social progress [10]. One of the political and ideological functions is to educate and motivate students on the necessity of continuing a productive economic system based on the country's political ideology [11]. The transfer of cultural capital to new generations us a unifying experience marked by teaching differences in social origins [12]. The pragmatic nature of teaching economical functions is to develop social divisions of labour and educate human capital to fulfil the needs of the economy [13]. After the Industrial Revolution, as education systems gained in importance as components of welfare states, they have been institutionalised with economical functions to create new human capital to raise productive power. It is necessary for workers to know how to use machines in factories and have enough literacy and numeracy to at least follow instructions in case of an emergency [14]. Educating a strong labour force is critical to the development of welfare states and this greatly increases Gross Domestic Product.

After World War II, economies needed workers who were more qualified in mechanics, work related to the chemical and nuclear industry and micro-technologies. To reach these goals, education, especially higher education, had to be made available to a greater number of people. Higher education institutions began to develop and spread as public financing continued to be provided to them.

As developmental differences between the countries began to become clearer, economist developed the foundation of a new theory: the Human Capital Theory. The Nobel Prize winning economists Garry Becker and Schultz developed this theory based on observations of human beings as a form of capital in the production function. The practical side of this theory is that in order to release the potential

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