

## Teacher Candidates' Attitudes towards Environment and Global Warming

SERAP ÖZBAŞ<sup>a</sup>

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**Abstract:** The aim of this study is to investigate the attitudes of the teacher candidates towards the environment and global warming. Samples of this research are 72 Turkish Cypriots. Data have been collected from the answers given by the candidates to the questions including environment, global warming, and renewable energy issues. According to the obtained results, attitudes of the teachers towards the environments and renewable energy are positive. Preference for energy of the teacher candidates depends on that the energy source is environment friendly and its security. Most teacher candidates who accept that the global warming is a serious problem propose the solar and wind energy to be used to reduce the global warming. According to some of the teacher candidates, environment is an important problem, but according most the other teacher candidates, embargo is a more important problem.

**Keywords:** Climate change, energy, environmental challenges, preservice teacher, global warming.

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<sup>a</sup> Yrd. Doç. Dr., Yakın Doğu Ü. Eğitim F. İlköğretim Bölümü  
sozbash@gmail.com

## Öğretmen Adaylarının Çevre ve Küresel Isınmaya Yönelik Tutumları

SERAP ÖZBAŞ

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**Öz:** Bu araştırmanın amacı, öğretmen adaylarının çevre ve küresel ısınmaya yönelik tutumlarını incelemektir. Araştırmanın örneklemini, 72 Kıbrıslı Türk öğretmen adayı oluşturmaktadır. Veriler; çevre, küresel ısınma ve yenilenebilir enerji teknolojisi konularını içeren sorular aracılığı ile toplanmıştır. Araştırma sonucuna göre, öğretmen adaylarının çevre ve yenilenebilir enerjiye yönelik tutumları, olumludur. Öğretmen adayları için enerji kaynağının çevre dostu ve enerjinin güvenli olması önceliklidir. Küresel ısınmayı ciddi bir sorun olarak değerlendiren öğretmen adayları, küresel ısınmayı azaltmak için çözüm olarak gelecekte güneş enerjisi ve rüzgâr enerjisinin kullanılmasını öngörmektedir. Adayların bazılarında göre çevre sorunu ülkenin önemli sorunları arasında iken; çoğunluğuna göre ambargo en önemli sorundur.

**Anahtar Kelimeler:** Çevre sorunları, enerji, iklim değişikliği, öğretmen adayları, küresel ısınma.

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## **Introduction**

The environment is affected by human activities directly or indirectly (Stern, 2000). Air pollution, depletion of the ozone layer, excessive use of sources, threatened species, erosion, global warming, and climatic changes emerge as a results of the agents such as increase in population, unplanned urbanization etc. (Torunoglu et al. 2013). One of these problems is the energy. Communities need energy to meet their needs and to produce the intact (Moomaw et al. 2011). Today the connection of energy with the basic problems such as environmental degradation, poverty, living styles, urbanization, food security, and global warming (UIDO 2009), shows that it is not only an ecological problem, but at the same time is an economic and social problem (Turkes, 2009). Therefore, sustainable energy services play a vital role on a sustainable environment and on sustainable social and economic development (Moomaw et al. 2011). Reducing the green gas emissions that cause global warming is related to sustainable energy services while reducing poverty and the development depending on reliable, cost-effective, and quality energy services (Moomaw et al. 2011; Reddy 2000). Therefore, while the production of energy and its usage cause global problems such as global warming, poverty etc., they can also help the solution of these problems (Reddy 2000). To solve the problem, in the production of sustainable energy and green energy technologies, the use of renewable energy sources is proposed (Yelmen and Çakır, nd.). Renewable energy such as solar energy, geothermal energy, and bioenergy can be converted into electric thermal energy and mechanical energy. Green technology is used to benefit from wind energy, solar energy, etc. (Edenhofer et al. 2012). While renewable energy meets the energy needs, it also contributes to the protection of the climatic changes and reducing global warming (Moomaw et al. 2011).

The island of Cyprus is one of the places affected by climate changes. It is one of the hot regions for biodiversity and

some environmental problems such as air-pollution, forest-fires, unplanned urbanization, and tourism. Such problems are created by human activities (CDB, 2014). Since the island is dependent on energy, it faces problems (Kassinis, 2008). This problem varies in the North and in the South of the island. Besides fossil fuel, renewable energy is used to support the needs in the South. In the North of the island (TRNC- the Turkish Republic of North Cyprus) both fossil fuel and solar energy from solar collectors is used. The electrical energy used in TRNC is generated from fossil fuel and solar energy is used to heat the water in houses. The energy used in TRNC causes ecologic, economic, and social problems because of high costs, increasing air-pollution, and greenhouse gas emissions which affect people's living styles, urbanization, economy, and the environment negatively. On the other hand, the most important problem of TRNC is embargo. So foreign policy also affects its domestic policy such unemployment (DPO, 2011).

For a solution of the problem, the interaction between economic and social approximations need to be examined thoroughly (Turkes, 2009). An effective way of solving global, regional, and local environmental problems based on socio-economic is possible if the people accept and are aware of such problems (acceptance and awareness) (Devine-Wright, 2008). Although many studies have been carried out in many countries to evaluate people's attitudes towards renewable energy, the acceptance of the subject-matter by Turkish Cypriots has not yet been defined by any study.

A community's awareness is based on educational process (Dias et al., 2004). Education plays a great role on exhibiting acceptable behaviors in minimizing environmental problems [15]. Teachers are the most effective factors in transferring information and making people aware of technology (UNESCO, 1977). At this point, it is important to specify the candidate teachers' attitudes towards environmental problems and renewable energy. It is hoped that this study will be of big help to

teachers, educators, and programmer-makers for an effective energy education.

The aim of this project is to investigate the attitudes of the Turkish Cypriot teacher candidates towards environment, global warming, and energy subjects. In line with this aim, a question is given as following: What do teacher candidates attitude towards environment (environmental issues, global warming, energy and green technology)?

## **Methodology**

### *Participants*

In this study, the participants joined our questionnaire are at Near East University in Nicosia, TRNC. The number of the participants joining our questionnaire (teacher candidates) is 72. All participants are from TRNC. The most of these participants (40) are males and the rest (32) of them are females.

### *Questionnaire*

The questionnaire consisted of two sections. The first section includes 2 demographic questions about the characteristic properties of the participants. The second section includes two different questionnaires with five questions each, one related to environmental issues and the other to global warming and energy utilization in TRNC. The questionnaire was prepared by Curry et al. [17]. Some of the items were changed to match the conditions in TRNC. The questions were translated from English into Turkish and applied according to the land and environmental issues of TRNC. The questions were put into practice after a close review.

### *Data Analysis*

I used descriptive techniques for the analysis of the data obtained from participants.

### *Procedure*

Participants joined this study answering the questions in

the questionnaire in class during the lesson. I described everything in detail to the students why this questionnaire is conducted before the surveying is started.

**Results**

*Question 1. What are the most important issues in TRNC today?*

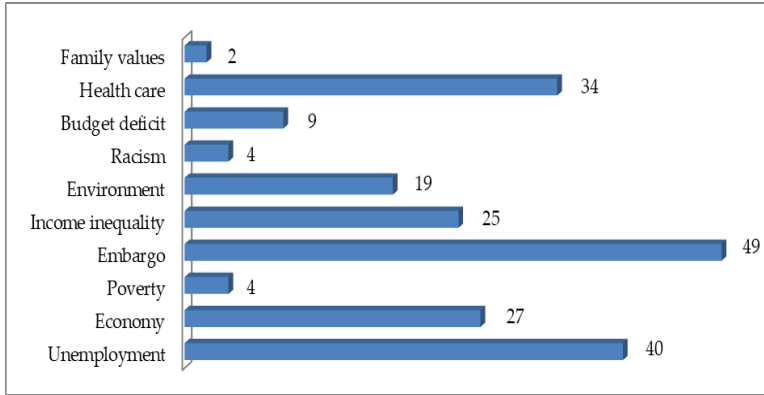


Figure 1. Most Important Issues for TRNC

The participants responded to 3 questions only in Fig.1. 49 of them pointed out the embargo to be the most important issue followed by unemployment and healthcare. They stated the least important issues as family values, racism, and poverty.

*Question 2. What are the most important environmental problems in TRNC?*

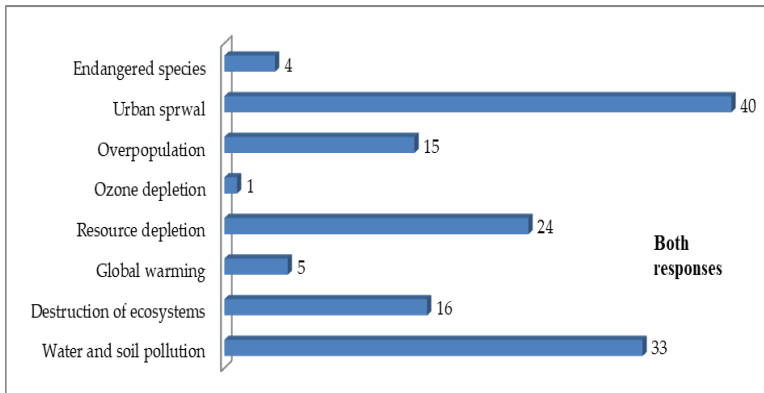


Figure 2. Most Important environmental problems for TRNC

The participants responded to two questions only in Fig.2. 40 of them pointed to urban sprawl as the most important environmental issue, while 33 found water and soil pollution and %24 found resource depletion as the most important issue. % 5 said global warming, %4 said endangered species and %1 said ozone depletion are the important environmental issues. For these, ozone depletion is less important.

**Question 3.** *If TRNC has 1 billion to spend, what do you think this amount should be spent on?*

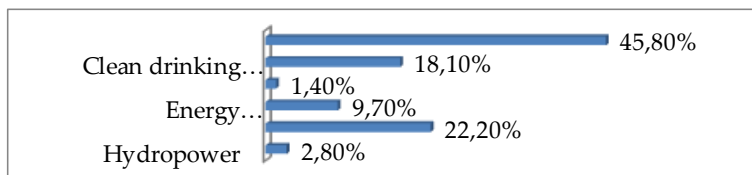


Figure 3. The Most Important Priority for you

The participants answered all the questions in Fig. 3 saying that most of this amount should be allocated to alternative energy sources. While  $\frac{1}{4}$  of the participants suggested that the money should be used for public transport and clean drinkable water, a small number of participants expressed their preference saying that the money should be spent on hydroelectric and nuclear energy.

**Question 4:** *Do you believe that you are responsible for the safeguard of the needs of future generations?*

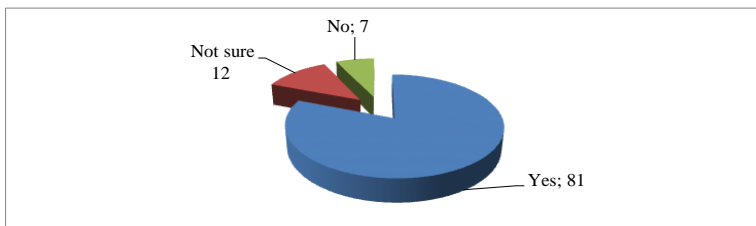


Figure 4. A Duty to Safeguard the Needs of Future Generations

The participants answered all the questions in Fig. 4 saying that they felt responsible for the safeguard of the needs of fu-

ture generations. Only 7% of them did not agree with this idea and added that it was not their duty to safeguard the needs of the future generations.

**Question 5:** *If you could choose energy source for the future, which of the following would be your priority?*

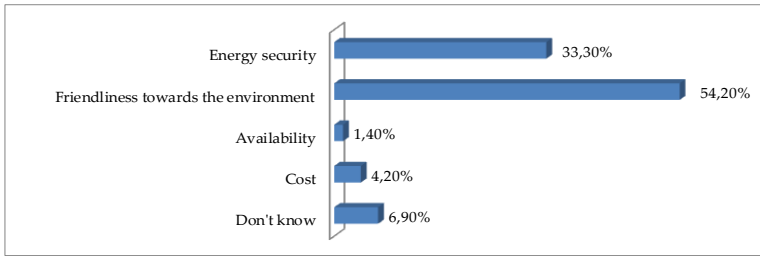


Figure 5. Future Energy Resource for you

The participants answered all the questions in Fig. 5. More than half of them agreed on environmentally friendly resources as their priority. Nearly half of them pointed to cure energy resources as their priority and a very few of them expressed an opinion on the expensive and ready resources.

**Question 6:** *Depending on your knowledge about global warming, which of the following statements refer to you the most?*

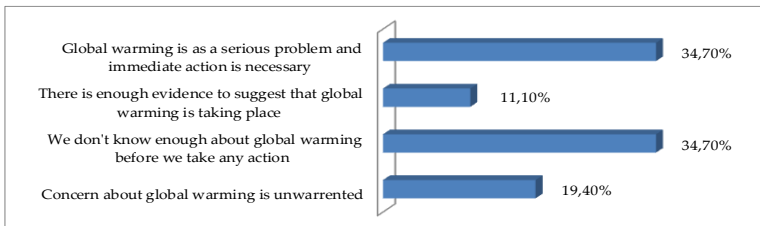


Figure 6. Statements about Global Warming

The participants answered all the questions in Fig. 6. 34,7% of them stated that global warming was a serious problem and emergency measures are needed to be taken without delay. Another 34,7% of the participant stated that they needed to know about the problem before taking measures.



**Question 7:** Many scientists believe that human activities are the biggest reasons for a warm Earth atmosphere. In TRNC, there is various ways to respond to this problem. Which of the following statements refer to you the most?

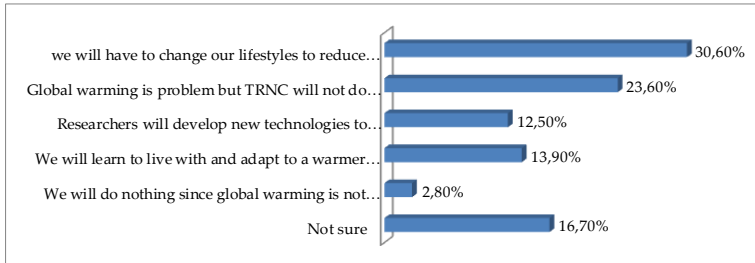


Figure 7. Statements about Global Warming

The participants answered all the questions in Fig. 7. 30.6% of them agreed saying as, "We will have to change our life-style to reduce energy consumption". 23.6% argued saying, "Global warming is a problem, but nothing can be done about it in TRNC".

**Question 8:** TRNC is currently working in coordination with the European Union to control gas emission. In your opinion, where is TRNC- in level- in this respect?

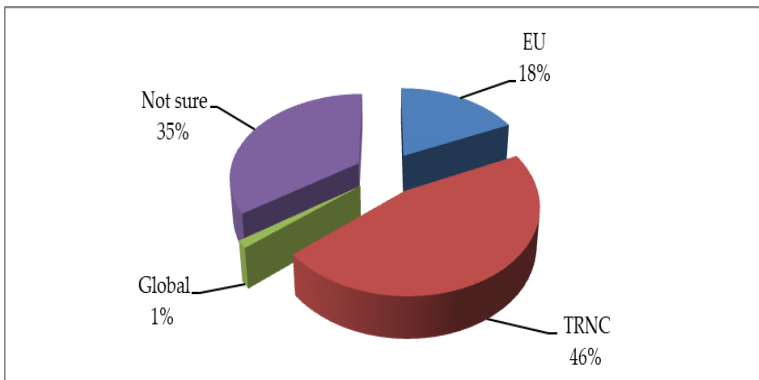


Figure 8. The Levels of TRNC Government in Controlling Emission

The participants answered all the questions in Fig. 8. 46% of them argued that gas emission in TRNC would not change, but remain at the same rate

**Question 9:** It is hoped that the government of TRNC will reduce greenhouse emissions by 60% by 2050. Do you believe such a target will be achieved?

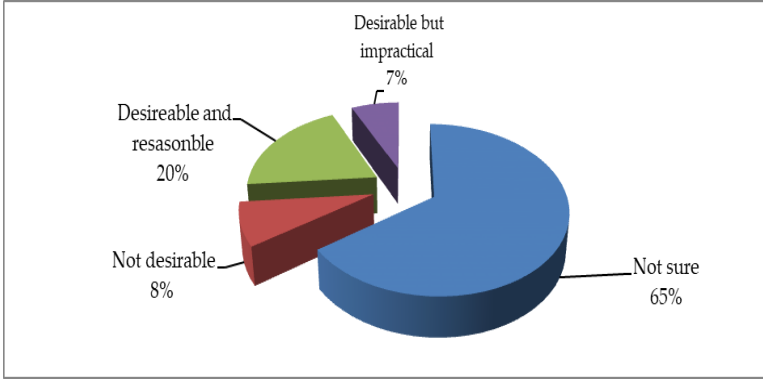


Figure 9. Reducing Greenhouse Emissions

The participants answered all the questions in Fig. 9. 65% said they were not sure that this could be achieved.

**Question 10:** The following technologies have been proposed to address global warming. If you were responsible for the design of a plan to address global warming, which of the following technologies would you use?

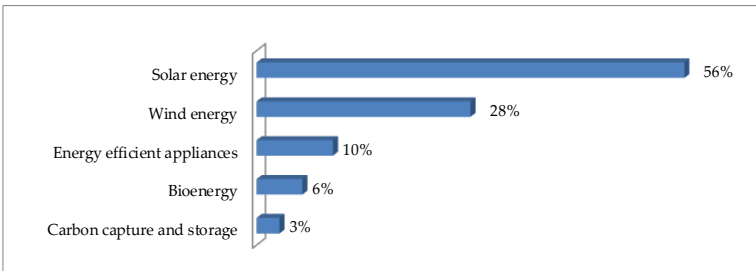


Figure 10. Reducing greenhouse emissions

56% of the participants said they preferred solar energy. 28% preferred wind energy and 10% preferred energy efficient appliances.

### Conclusion and Discussion

Today, the climate is changing, a lot of species and natural

varieties are extinctions and global warming is raising. Human behavior is the main negative factor in environmental degradation (Harte, 2007). On the other hand, people have a great role in reducing global warming and solving environmental problems (Zyadin et al., 2012). This means that there is an inclination towards renewable energy in the world. TRNC, too, can contribute to reducing global warming and solving problems. The TRNC government has taken a big step to reduce global warming by starting to use energy sources which are environmental friendly and help reduce global warming. Besides this, it is of great help that people are aware of and accept this problem. Education plays a great role in awareness and acceptance. This study investigated the attitudes of candidate teachers – the models for future generations- towards environmental problems and renewable energy sources. The most important problem for the candidate teachers is the embargo, which is an external political problem. Unemployment and health issues are among the other hard problems in the country. Energy has a lot of positive contributions to many sectors from health and job opportunities (Apergis & Salim, 2015). When we examine the answers by candidate teachers on environmental problems, global warming, and the technology used in energy, we understand that they have positive attitudes towards the environment. They strongly support renewable energy. This result is almost similar to the other studies carried out on the subject-matter (Bidwell, 2016; Bilen, 2013; Fast, & McLeman, 2012; Zyadin et al., 2012). The participants mostly support the use of solar and wind energy to reduce global warming. The same preference is also seen in other studies (DeBaryshe & Stern, 2014; Devine-Wright, 2008). The candidate teachers believe that they have responsibilities to safeguard the needs of future generations. They are all for environmental friendly energy sources.

For the candidate teachers, the biggest environmental problem in TRNC is unplanned urbanisation. The reports by the 5th National Action Plan regarding the biological variations of

Cyprus Island show that the biggest negative factor affecting the environment and biological variation on the island is unplanned urbanisation (CBD, 2014). It is assumed that global warming is a serious problem, but there is not enough evidence of this assumption. In similar studies, the participants supported renewal energy to reduce global warming (Kılınç et al., 2013). They strongly believe that the solution to this problem will be to change life-styles because the government of TRNC will not do much about global warming.

Environmental education is essential for a sustainable environment. Bearing in mind the ongoing ecologic, economic, and social changes, topical environmental education programs should be designed for awareness raising and acceptance. The teachers should work through different teaching methods and techniques for effective learning.

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