NEAR EAST UNIVERSITY

GRADUATE SCHOOL OF EDUCATIONAL SCIENCES

ENVIRONMENTAL EDUCATION AND MANAGEMENT

AN ENVIRONMENTAL COMPARISON BETWEEN STUDENTS AND FARMERS: ENVIRONMENTAL APPROACH AND AGRICULTURE EXTENSION

MASTER THESIS

TWANA YOUSIF MAWLOOD

Nicosia

May, 2020

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01/ 05/ 2020

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Declaration

In this thesis, I obtained the data information and documents that I presented within the frame of academic and ethical rules; I present all information, documents, evaluations and results in accordance with scientific ethical and moral rules in the study, I declare that I have made a proper reference to all data, thoughts, results and information that does not belong to me by scientific ethical rules and that I have indicated by citing the source.

Twana Yousif Mawlood
Environmental Education and Management

01/05/2020

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Twana Yousif Mawlood

Environmental Education and Management

Abstract

An Environmental Comparison Between Studentsand Farmers: Environmental Approach and Agriculture Extension

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Master Degree, Environmental Education and Management Supervisor: Assoc. Assoc. Dr. Aşkın Kiraz

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This study was conducted to reveal the background of students and farmers in the Kurdistan region of Iraq on environmental issues and environmental awareness, the number of participants was 400 people and it was consists of university students and farmers in the plains around the city of Erbil, while the entire sample consisted of 200 university students and 200 farmers Given by students and farmers quantitatively. Data were collected using prepared questionnaires. The data was analyzed coded in SPSS version 20. The results were a comparison between students and farmers Using an analysis of variance (ANOVA) and group statistic using P = 0.05, the hypotheses were tested and it was demonstrated that there was no significant difference in the level of awareness and basic knowledge for both students and farmers. The results of the study can be used by the KRI authorities to set priorities in terms of environmental education for the various urban settlements. This will also help design the EE approach to make it relevant and responsive to the immediate interests and responsibilities of students and the entire community by taking into account emerging environmental concerns. This study also aims to know that the agriculture extension can not only be specified in the field of agriculture, but also environmental education and awareness must be practiced, and find the relationship between extension concepts with environmental culture and its motives in identifying environmental issues.

***Keywords*:** Environmental education, Environmental awareness, Agriculture extension, Kurdistan region of Iraq, Environmental Challenges.

Özet

Öğrenci ve Çiftçiler Arasında Çevresel Bir Karşılaştırma: Çevresel Yaklaşım ve Tarım Uzantısı

Twana Yousif Mawlood

Yüksek Lisans, Çevre Eğitimi ve Yönetimi

Tez Danışmanı: Doç. Dr. Aşkın Kiraz

Mayıs 2020, 108 sayfa

Bu çalışma, Irak Kürdistan bölgesindeki öğrenci ve çiftçilerin çevre sorunları ve çevre bilinci konusunda arka planlarını ortaya koymak için yapıldı, katılımcı sayısı 400 kişiydi ve şehirdeki ovalardaki üniversite öğrencileri ve çiftçilerden oluşuyordu. Erbil, örneklemin tamamı 200 üniversite öğrencisi ve 200 çiftçiden oluşurken, öğrenciler ve çiftçiler kantitatif olarak verilmiştir. Veriler hazırlanmış anketler kullanılarak toplandı. Veriler SPSS sürüm 20'de kodlanmış olarak analiz edildi. Sonuçlar öğrenciler ve çiftçiler arasında bir karşılaştırma idi. P = 0.05 kullanılarak bir varyans analizi (ANOVA) ve grup istatistiği kullanılarak hipotezler test edildi ve hem öğrenciler hem de çiftçiler için farkındalık ve temel bilgi düzeyinde anlamlı bir fark olmadığı gösterilmiştir. Çalışmanın sonuçları, çeşitli kentsel yerleşimler için çevre eğitimi açısından öncelik belirlemek için KRI yetkilileri tarafından kullanılabilir. Bu aynı zamanda ortaya çıkan çevresel kaygıları dikkate alarak enerji verimliliği yaklaşımının öğrencilerin ve tüm toplumun yakın ilgi ve sorumluluklarına uygun ve duyarlı olmasını sağlayacak şekilde tasarlanmasına yardımcı olacaktır..Bu çalışma aynı zamanda, yayımın genişletilmesinin sadece tarım alanında belirtilebileceğini değil, aynı zamanda çevre eğitimi ve farkındalığının da uygulanması gerektiğini bilmek ve yayım kavramlarının çevre kültürü ile çevresel meseleleri belirleme nedenleri arasındaki ilişkiyi bulmaktır.

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Anahtar Kelimeler: Çevre eğitimi, Çevre duyarlılığı, Tarımsal yayım, Irak Kürdistan bölgesi, Çevre Sorunları.

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CHAPTER I
Introduction

Problem Statement

At the beginning of 21 century, have some complex interactions have led to alarming global directions in environmental deterioration (UNESCO, 2012) Which included air populace growth and unsustainable patterns of consumption, rapid urbanization. These have helped to aggravate the implications and scope of the world's environmental issues like deforestation, global climate change and loss of biological diversity on the earth, degradation of the ozone layer and trans boundary transport of pollutant and toxic waste are also all environmental problems contact every nation that affects the health and lives of their communities (UNEP, 2012). The degree of the global climate problems is really beyond serious scientific discussion the inattention of a knowledgeable and trained citizenry's role in making important environmental choices and implementing a responsible approach to solve environmental problems, it led to the formation of the idea of environmental education (Crompton & Kasser, 2009).

EE has been viewed as necessary strategy to educated students about environmental issues, and to identify challenging environmental troubles at all academic levels, including universities (Köse, & et al., 2011). According to (Chacko, 1998) there is a concern about the growing deterioration and exploitation of the natural environment in general, It can be observed that most of the environmental degradation occurs nowadays due to the failure of our educational systems and society to provide peoples with the skills knowledge and general understanding required to make educated decisions about interrelationships and experiences in the environmental surroundings. According to (Aminrad, et al. & Sakari, 2013) EE is a mechanism that provides for environmental sustainability and awareness development in all parts of the population It is mainly achieved by developing people who are involved in environmental problems and actively involving them in environmental programs and taking the responsibility for the conservation of economic, cultural and historical values.

As per the U.S. EPA, EE does not only give information to students on environmental issues because there is a gap between environmental awareness and

environmental education (Liu & Guo, 2018).Therefore, it is important to know to what extent the academic education systems provide students with the environmental education they need at university, and what are the missing elements in the environmental education system besides how could advantage from international experiences perspectives in the discipline of environmental education. The importance of environmental education is appreciated and highlighted as one of the most relevant and successful ways if not the only of solving complex environmental issues (Kyburz-Graber, 2013).

Consequently, environmental education is calling for national, local and global action in response to the social and biophysical problems of the exploited ecosystems of the planet. It is called to an educational system in university and school that promotes the development of environmentally educated people who are concerned about the world in which they live and which future generations will also need to live in (Crompton and Kasser, 2009) Therefore focusing on creating environmentally literate people who are concerned and share situations for the surrounding natural environment in which they live and EE considers finds it's their place in the (UN, Conference) on the Natural ecosystem human in the Stockholm in 1972. This workshop proposed the creation of an International Environmental Education Programmer (UNEP, 1972).

It suggested the aims and goals of major categories of EE curriculum that include environmental activities, skills, awareness and involvement in environmental actives which are the subject of this study (UN, 1994) That's because they represent half the world's populations and particularly unprotected now and in the future to the consequences of environmental degradation (UNESCO, 1999). Also, students are usually strongly motivated and able to understand the environmental destruction consequences and trying to take preventive action. Most researches nowadays of the world focused on the EE and its effects on the environment (Ardoin, & et al., 2020). In the environmental community instead of taking the level of achievement of environmental education objectives into perspective by assessing the level of knowledge, the participation of students and attitude to the environment (Liefländer & Bogner, 2018) In Iraq's Kurdistan Region, the EE has slightly existed in schools and colleges students were concerned did not participate adequately in the protection and enhancement of environmental quality due to the absence knowledge and appropriate attitude concern about the lack of practical conservation values in the day

to day activities of the students on environmental actives. The EE Conference reported on the main categories of goals and objectives of EE such as knowledge, attitudes, awareness, participation and skills such objects have been cited in several journals, books and documents in recent decades (Athman & Monroe, 2004). Not all researchers and writers agree on the extent of the significance of one goal over the other However, there are common principles that are commonly listed in the literature, namely perception, information, attitudes (Palmer & et al., 1998).The variation in goals and strategies discussed by various researchers, organizations, writers, and groups does not provide a comprehensive approach to the development of the environmental curriculum (Day & Monroe, 2000).

Iraq as a whole and the Kurdistan region in particular, are facing many environmental issues, such as air pollution, soil salinity, climate change, poor water quality and threat of water shortages. However, Iraq's climate has been subjected to several pressures, starting with population growth, an industry in general and petroleum industry in particular being activities that damage the environment and cause different environmental issues. Oil as known consists of at least 300 different chemical elements most of which are harmful to living organisms (Amin, 2017).The impact of three wars poor use of lands and irrigation planning and encroachment on fragile ecosystems. The land and water resources of some rural parts of Iraqi Kurdistan are under environmental pressures particularly from the extension of agriculture, deforestation, loss of natural vegetation cover the increased Population the main causes of such pressure are Oil industry and urbanization.

Land-use patterns on earth and Land cover represent human activity and ecosystem interactions Population growth in KRI along with competitive land use causes land scarcity conversion of wild lands into agriculture use and other uses. As it is known that environment and agriculture have always been closely related and each agricultural activity has a special impact the environment (Pimentel & Burgess, 2014) closely linked to the stage of agricultural development and intensity of agricultural activity because the Kurdistan's lands are fertile, suitable for cultivation, and there are flat and mountainous lands suitable for different types of cultivation the agriculture strongly impacts on the Kurdistan region Iraq environment (Jongerden &et al., 2019) logical awareness and Environment is a strong view on environmental issues, cognitive skills in assessing environmental issues and behavioral patterns are some of those identified as having the power to limit

individuals ' environmental impacts or to protect the environment by contributing to greater community efforts. EE is very different in the field of education from other fields because it has the power to influence the actions of the students studying it (Hungerford & Volk, 1990). Therefore, most concepts of environmental literacy represented the parallel or similar understanding of behavioral components.

This part focuses on the environmental education benefits through the agriculture extension and agriculture the first benefit lies in the importance of nature interactions As we know nowadays there are places left in which can youth directly experience nature. It has been pointed that people living in large cities and living environmental principally consisting of roads and concrete paved with asphalt cannot familiarize themselves with nature and have difficulty understanding about environmental functions (Shichinohe& Jinnouchi, 1990). Without awareness of nature's processes, it would not be possible for people to understand that humans are also a vital part of the ecosystem. These experiences alone, however, may not solve the problem. Agriculture experiences are important in increasing people's awareness of the environment. It helps people become conscious of the continuity of organisms ' lives: sowing, sprouting, blooming, fruiting, harvesting, and human consumption of crops or seed storage from agriculture experience People are expected to know from agricultural interactions that they are also part of the ecosystem and benefit from nature. This will help them become part of the ecosystems as we know farmers are ensuring sustainability and keep a fair number of farmers growing reasonable levels of food crops to ensure food safety. It is necessary to educated Farmers, extension staff, and planners need to be trained to introduce sustainable agriculture. We need to stress the value and potential of the agricultural extension in training and educating farmers about the environment by using modern methods of farming and increasing use of natural resources such as water and land, spreading sustainable agriculture ideas and practices based on environmentally friendly agricultural technology to help farmers' productive crops (Savci, 2012).

Agriculture Extension and education knowledge about climate change significant in farming communities when conducting a lot of environmental research and activities on behalf of farmers Extension workers help farmers increase understanding of farming and fertilization, develop their technical skills, history on environmental issues, emerging technologies. Such advances, including modern irrigation systems, water conservation, advice farmers to preserve the environment

and protecting natural resources resulted in stable rural communities (Carvalho, 2006). Agricultural extension services not only provide knowledge information on different crop production aspects but also advise farmers to be aware of the environment's problems One of the key methods of communicating and disseminating environmental issues or concern with the public is through specific communications through existing channels of communication that has broad and frequent clientele in an institutionalized and continues way (Allahyari, 2008). The majority of farmers in some rural areas rely on agricultural extensions for information and advice on agricultural and rural development However in Kurdistan region Iraq(KRI) agricultural extension services weak and ineffective, extension workers are not well trained and have a limited experience limited to agricultural production technologies Since many environmental problems are directly linked to agricultural sustainable development there is a need for a new opportunity to revitalize and expand this service by incorporating environmental education through agricultural extension training (Farooq, et al., & Karim, 2010).

The agricultural zones in the KRI are now experiencing a rapid change in the growing demand for food, so the growth of agriculture to meet these quick changes will be one of the main functions of Agricultural Extension in the future years, supporting rural farmers to them increasing their production and distribution strategies with rapid changes in public conditions and thus enhancing their adaptability according to long-term development and marketing strategies must be increased according to their preferences and Community expectations (Saleh, et al., & Kshash, 2016). The increased use of modern technologies in the agricultural sector has worried the government as such progress has been made at the cost of serious environmental degradation including unregulated, unsustainable use of natural resources.Constant use of different forms of chemical pesticides and fertilizers and agricultural disposal and overfishing are among activities that lead to contribute the depreciation of the quality of the agriculture environment and resources Therefore, deforestation in some area has increased the danger to the protection of the environment that has negative impacts on sustainable farming Among the reasons for removing the spoken word from agriculture one of the reasons for the elimination of the agricultural spokesman is the change in forestry excessive land use, illegal logging and uncensored fields, as well as the turn of wooden walls into concrete walls. The farmers ' understanding of the use of pesticides and the equipment used to

spray pesticides has been one of the key tasks of improving agriculture extension we must clarify hazards associated with chemicals or pesticides (llseve et al., 2018) and advice to farmers to read the directions before use and wear protective clothing when preparing any chemical solutions Preparation for the effective use of the pesticides to control pests, diseases and weed problems in agriculture the use of pesticide-related machinery application.

Kidane and Worth (2014) This research explores student expectations of various aspects of the processes of the Agricultural Education and Training (AET) system provided by the education sector in schools and colleges. The research discusses the current shortcomings of the curriculum program in Agricultural Training by information gathering about 3 various forms of environmental science and agriculture. Findings show that there is coverage of agricultural lessons in the teaching and learning process notes in each lecture and time compatibility to support agricultural curriculum within the assigned teaching periods Furthermore, there are challenges such as wasted exposed lessons and insufficient learning guides and resources, a shortage of trained agricultural science teachers, The findings indicate that most agricultural students don't have of appropriate support and services.

The growing use of technology in the farming sector has worried the community as such development has been achieved at the cost of significant deterioration of the environment. Uncontrolled, unsustainable natural resource extraction and the use of environmentally destructive technology have caused significant degradation Land clearing, continuous use of chemical fertilizers and pesticides and crop waste are among activities that lead to environmental and resource quality depreciation. Besides, the expanded mountainous deforestation area has increased the challenge to the protection of the environment, which has negative impacts on sustainable agriculture. Farmers should be aware of modern pesticide spraying equipment and use modern irrigation systems with knowledge of plant and plant spraying for self-protection and climate the government is obliged to open training courses for environmental extension agents and how to protect their environment (Gardner & Stern, 1996).

Sub-problems

In light of this aim, these sub-objectives will try to solve:

1. What is the general background of agriculture students and farmers in KRI on environmental issues?
2. What is the environmental consciousness of the agriculture college students in KRI towards environmental protection?
3. What is the level of understanding and participation of agriculture college students and farmers towards the environment of KRI?
4. Is there a relationship between the level of environmental awareness between agriculture college students and farmers?

Aim of the Study

This study focused on main objectives of environmental issues knowledge background on environmental issues and testing of environmental awareness participating in environmental practices among Agriculture College students and rural farmers around the Erbil city Study participants were chosen from students of the Faculties of Agricultures in KRI and farmer's in villages around Erbil city.

Importance of the Study

Background knowledge on environmental issues and Awareness and knowledge, attitudes (AKA) are goals that have become essential environmental education benchmarks and resolve environmental issues. These benchmarks have been measured by many researchers using various evaluation methods In this research we have tried to evaluate the level of background information of environmental issues and awareness and attitude three components (AKA) among participants involved in this study agriculture College students in Kurdistan region university and farmers around Erbil city (Esa, 2010). The evaluation of environmental awareness and environmentally attitude and background knowledge on environmental issues conducted for this research included the below participants: (1) environment, farmers, agricultural college Students This research provided information for analysis of background knowledge on environment levels and environmental awareness among the population's Evaluation of environmental awareness and

background information should be an important part of the creation and development of environmental education curriculum. The objective of this research: To study the awareness about environmental education among agriculture college students.

- To study awareness about environmental education among the farmers around villages.
- To study the attitude and background knowledge about environmental education among agriculture college students.
- To study attitude environmentally and background knowledge about environmental education among the farmers.
- To study the attitude and background knowledge awareness about agriculture extension among agriculture college students and farmers.

Limitations

The limits mentioned below are all the limits that conducted from this research:

- Some farmers, particularly in far-off villages showed some resistance to participating in the study. To resolve this, farmers were persuaded that the research findings should not be used for any other purpose; the names of the respondents have not been captured in the questionnaire.
- Environmental education initiatives have been ineffective in enhancing the environmental awareness and behaviors of students in Iraq's Kurdistan region. Kurdish students thus do not need to gain environmental knowledge, attitudes and values to help them engage in environmental conservation.
- This research limited to the Agriculture College students and farmers around Erbil city in Iraq's Kurdistan region and is limited to 400 communities (200) farmers in the villages and (200) agriculture students.

Definitions of terms

Agriculture extension: a philosophy focused on the human values and recognizing the long-term effect of our practices on the ecosystem and other types of agriculture is more than a change in agricultural practices but must concentrate on raising knowledge Awareness and relevant information, technology, and attitudes, skills can play a key role in sustainable farming (Allahyari, 2008).

Environment: The collection of physical, chemical, biological components and

Economic, cultural factors and social relating to a group of human beings or individuals (UNESCO, 1985).

Environmental awareness: it's a luring process that aims to increase the human skills, attitude and knowledge that affects the human awareness and culture toward the environment and the environmental problems, not only that but it also aims at making people aware of the danger of health problem on human life and health (Stapp, 1969).

Environmental education: Environmental education focuses on teaching about the concepts of the environment it plays an important role to increase the awareness of people, as they can become aware of environmental problems (Atreya, 1985).

Environmental Protection Agency (EPA): Is an official federal environmental protection agency of the United States. It is a federal government agency of the U.S which has the responsibility of protecting human and environmental health).

Environmental attitude this is an established way to think or feel about someone or something usually expressed in the actions of an individual (Milfont & Duckitt, 2010).

Abbreviations

ATE **:** Agriculture Education Training

AKA **:** Awareness& Acknowledge& Attitude

ANOVA **:** Analysis of Variance

EE **:** Environmental Education

EPA **:** Environmental Protection Agency

FAO **:** The Food and agriculture organization

F **:** Frequency

KRI **:** Kurdistan region Iraq

% **:** Percentage

SPSS **:** Statistical package for social science

UNESCO **:** United Nations Education, Science and Cultural Organization

CHAPTER II

Literature Review and Some Environmental Concepts

Introduction

Chapter two offers a summary of the study-related literature It brings environmental issues into perspective and how to use environmental education as a method for resolving these issues and give a brief overview of environmental education goals under this chapter study the objectives of environmental attitudes, environmental conservation, participation of Agriculture Extension in environmental practices are reviewed also offers a perspective of participation of environmental education in the college of agriculture and to farmers which is the study's goal.

Environmental Challenges

The disruption of Climate pollution in worlds is a very important and essential problem facing our society today, there are several increasingly important environmental issues and risks to society in future Globally these issues include climate change, ozone layer depletion, and air pollution, the over-consumption of non-renewable resources Climate change is the most important problem of the moment amongst these global issues According to most scientists this was a product of human action and not a normal phenomenon the proof is both overwhelming and compelling (UNEP, 2011).As the world becomes more industrially developed and environmental pressure increased, humankind increased. Many global environmental problems are been experienced such as the extinction of biodiversity, deforestation, air pollution and degradation of natural resources and the Ozone layer all of us in our community need to consider these global environmental challenges so that we can come up with solutions to deal with them effectively now and in future, The people should be aware of their causes including urbanization, use of the harmful substances, industrialization and use of some new Chemical solution technology (Firth,1995). Environmentalists have dismissed urbanization and industrial development as a whole as its inception the new environmental group has focused its attention on the nature protection, subsequently on rural communities, therefore, appropriate that communities should be seen mainly as the place where

environmental challenges emerge from consumption of the modern civilization and development practices (Gouldson & Sullivan, 2012) also rapidly increased of overpopulation has outperformed the capacity of the city to provide the requisite services including health care, sanitation, safe water and education, waste disposal leading to increase in the cars number, factories, other equipment contributing high levels of air pollution and traffic jams (Chowdhary & Bharagava, 2018).

Cavas et al. and Kesercioglu (2009) This study examined students attitudes the environment and interest learning the environmental protection concerning the gender, the questionnaire was collected in Turkey from students based of the Scientific Training of students by using the Statistical analysis included frequency distribution, ANOVA, descriptive statistics, The findings of this research showed that students have a positive attitude about environmental concerns, students are interested in providing resolutions to environmental issues and showing optimistic trends in the future, participant of students moderately interested in learning about environmental problems and statistically relevant differences in environmental concerns were found to be of interest in learning about the environmental protection and environmental attitude of the students As concerns gender.

Aslanova and Gökçekuş (2019) in their research overviews the opinion of foreign citizens on the environmental effects of the climate change in Cyprus for assessment the research used stratified sampling method, Findings from this study were indicated that participants know about climate Change, skills needed to reduce climate change and climate change adaptation as well as awareness about climate change affects the environment but lacks basic information to reduce environmental problems.

Yousuf and Bhutta (2012) the researched studied the difference between girls and boys students about their attitudes towards environmental concerns, overuse of energy, climate change, and air and water pollution, etc. Their findings revealed that there is no disparity in an attitude of the female and male student's towards environmental issues and there was a significant insight into the mindset of female and male students towards environmental problems in Karachi, Pakistan's private and government secondary schools.

Dahiya and Ritu (2013) studied the environmental awareness among students and their attitude towards environmental degradation they noticed that female and male students have no difference in their understanding of the environment, while

they have found that science and art students vary in their environmental awareness, females and males science found no difference in their environmental awareness. Gender does not major role in environmental attitude, university, school location plays important role in gender environmental behavior gender and locality has no association effect on environmental attitude, type of university, school and locality has an impact on environmental attitude, Therefore, environmental challenges must include environmental values, principles, environmental regulations and laws, State of the local, international climate, world's best environmental challenges and risks resulting from environmental deterioration, its effects on people beings, citizens and environmental awareness of people and importance of restoration, conservation and regeneration"(Rogayan & Eveyen El Elyonna, 2019).

As for KRI, there are many factors and practices which harm the environment. Some of these issues are listed below, some of which require easy and immediate solutions to prevent further deterioration of the ecosystems and to restore the country's environment. These factors can be divided into external and internal factors the external factors due to practices around Iraq's borders, others due to internal activities and policy deficiencies, lack of compliance systems As for KRI, there are many factors and practices which hurt the environment Some of these issues are listed below, some of which require easy and immediate solutions to prevent further deterioration of the ecosystems and to restore the country's environment.

Albright (1990) has mentioned that nature overly affects all living organisms including plants which are a negative effect. It also affects the food chain and is, therefore, threatening their lives or survival, Bögeholz (2006) has mentioned that the rapid population growth and the increase in rural-urban migration and industrialization have caused proliferation and increased pollution, On the other hand, the dwindling of natural resources due to human behavior in the environment and increasing population is also a major factor in contributing to environmental issues.

Yılmaz et al. (2002) aimed to study give solutions to the determination of school students' knowledge and background about the environment in their research. For this purpose, the faculty of the Education University of Hacettepe, perform a questionnaire to 240 students who studied on chemistry education division, in 2000-2001 educational year perform a questionnaire on 6 secondary education school with the number of 228 students in Ankara and Beypazarı and 2000-2001 perform 3 different questionnaires on 153 students who studied at university of Hacettepe,

faculty of education, division of chemistry Education, As a result of this research it is indicated that EE is not sufficient and that chemistry-educated students have more knowledge than others and that they are mostly obtained through visual and written media. The awareness of students and the understanding of environmental issues are increased during the ongoing study to three years. The major factor that has a destructive impact on Iraq's environment is decreased surface water flow coming from neighboring countries, Although some of this water decline may be due drought conditions and environmental degradation, it is clear the major factor to reducing water entry to Iraq from Syria, Turkey and Iran due to the water strategy project developed in those countries and other local practices that prevent the flow of water into the euphrates and Tigris as they have done historically (Jassim, et al &Al- nidai, 2013), Only Governmental Political Initiatives will address these external factors to open dialogs with our neighboring countries for equitable and fair use of our common water resources as well as the international community's support for equal distribution of water in the basin

The Internal factors for the depletion of the available water and for the poor quality of what available due to the following practices:

1. There is no regulation for domestic water usage and there is no compliance mechanism for those regulations where exist (Washing of car, drilling well deep, pipe tapping and watering private garden ... etc.).
2. Municipal governments lack an existing decrease in detection techniques for water supplies and water systems.
3. There are no educational and awareness campaigns within the build the public knowledge base for responsible water usage therefore there is no public awareness in the population.
4. The cities in Iraq do not have more sufficient sewage treatment plants and there is no national Natural Groundwater framework to help enhance regulatory requirements for groundwater and surface activities.
5. Insufficient drainage of the cleaning lakes and rivers and absence of projects to dredge the waste accumulated on the beds and shore bank.

6. The use of old irrigation methods in farming, for example, uses flooding instead of using regulated sprinkler systems or drip irrigation.
7. Uncontrolled use of Pesticides and Toxin in agriculture.

Unregulated recycling of cars and household power generators; gasoline, diesel and equipment (substances will leak to contaminate tables of groundwater).

As regards the air quality and land of KRI, it suffers from poor air quality and land impacts due to policies implemented by local and public authorities, such as:

1. Use of Power Generators several hours a day because of insufficient electricity from the government.
2. Lack of Car emanation regulations and bringing stock cars instead of using modern car inspection techniques.
3. Inadequate trash collection, recycling of garbage and trash burning such as burning tire in ethnic Celebration (Newroz).
4. Tree cutting helps to reduce CO2 from the air and there is not enough parks and Natural Arias around urban areas.
5. Bad control and unregulated building elements for house building, highways and facilities through the disposal of the building materials also often reduce productivity and cause excessive pollution by low-quality building materials and methods.
6. Limited uses of renewable energy sources which less pollution such as solar and wind power and hydropower.

As noted above, air pollution, deforestation, water scarcity, water pollution, Loss of Overpopulation Biodiversity, Waste disposal, etc. are the major environmental challenges as they have become big problems and because of their negative impacts on the climate and quality of our lifestyle, they are of great concern they affect the natural sources non- renewable and renewable and are a major threat to the life of the coming generations Environmental scientists believe that the current environmental issues are land and air pollution results of three wars in Iraq. There are serious environmental concerns in the KRI. We are facing a lot of social upheavals in today's era of globalization, including environmental problems (Beer, 2000).

Rogayan (2019) in his research reiterated that our planet currently suffers from countless afflictions caused by people's activities which are constantly refusing the climate, The goal for everyone is to act and step towards a common cause in the preservation of earthly life.

Ernst and Monroe (2004) This research explored the relationship between environmental teaching and students' awareness abilities the respondents of schools participated in this research, using Interviewing of teachers and students were used, the Data collection occurred during the school year 2001_ 2002 Environmental programs have a beneficial impact on the students thinking skills. The finding of this study support using environmental education to improve and develop critical thought which can be used to direct potential implementation.

Environmental Education

EE has been described by UNESCO as an education process that improves people's understanding and consciousness of the ecosystem and the related challenges develop the skills and expertise needed to solve obstacles and promote attitudes, motivations, responsibilities to make informed decisions, take appropriate action. Therefore, environmental issues include other degenerations except for the pollution the environment is a set of relations; the relationship becomes a problem owing to the human use of actions that change the balance of nature (State Planning Organization, 2006).

Environmental education initiatives and activities in formal and non-formal education, whether governmental or non-governmental, should be evaluated to leverage their respective strengths and explore how limited resources can be better coordinated to achieve environmental education objectives (Palmer, 2002). If sustainability is to be achieved in environment educators in a world of growing populations and changing the global environment they should take a leadership role, making great strides to educate society for an age of exponential change. Educating our students and youth on environmental attitude and awareness can be a great help in distinguish information about how to practice conservation and sustainability in the environment, Integrating EE into curriculum at all levels of the school encourages excessive influence on students ' knowledge, skills and attitude towards environmental protection (Raman, 2016).

Shamsabadi (2008) provided a theoretical framework on the country's environmental education system, which gives the findings of his analysis that there is a positive connection between the awareness of teachers and students and changes their attitudes. Thus, education and awareness of the environment can be one of the important roles in schools at all levels and informal education.

Heydari (2003) found in his research that the necessity of preserving and protecting the environment is very weak among young people in Tehran and about 87-82% of young people do not give any care about protecting the environment and 11% to 38% do not consider it their duty to protect the environment.

Aminrad et al. (2013) The study was carried out to establish the relationship between students secondary school about understanding environment, skills, attitude, the study was conducted in Malaysia on 470 participants The tool contained (48) questions used to examined the relation between consciousness, attitude and background knowledge on environment, The individual Correlation results show a strong but poor association between knowledge and awareness on the environmental problems although higher knowledge-to-attitude relationships were observed among the respondents. study concluded that the households of respondents, media and teacher, personal reading and education curriculum could have achieved a high level of knowledge and information including the good attitude of students towards the environment, which improves the environmental perception of both students and society at large, The study proposed that environmental awareness subjects should be used as a separate syllabus in the education system.

Alexandar and Poyyamoli (2014) has studied the effect of EE on changing attitudes of teacher and high school students towards the protection of the environment, the research result has shown that the students and teachers background concerning environmental protection have a low background in environmental protection and need to have the training and also no positive attitude towards environmental protection Finally the results showed that EE had a positive effect on changing attitudes of students and teachers concerning environmental protection. EE and related programs improve environmental awareness and, in turn, environmental activity and attitudes (Duerden & Witt, 2010) the role of EE teachers in the degree to which teachers develop an understanding of the concept of the main scientific principles environment through conversations and training and level to which awareness can be used in a conversation of complex environmental challenges, students participating in the teacher-training program (Ekborg, 2003) Teachers are responsible for providing students with awareness, values, skills and attitudes and dedication required to improve and protect the environment and encourage active participation from a variety of perspectives biological, physical ethics in solving environmental problems (Esa, 2010) A successful development of

EE has required environmentally conscious teachers with scientific background knowledge of environmental problems, appropriate methodological approaches to education with scientific awareness and background knowledge and awareness of their social consequences (Littledyke, 2008).

EE has become the priority for most of the world's scientific institutes and universities (Mead, 2013) the independent higher education foundation in Iraq's Kurdistan Region encourages courses in environmental management and sustainability and encourages the students to continue their education after graduation Mostly, the engineering curriculum includes environmental education through environmental engineering while other courses offer agriculture and environmental sciences.

Burge (2003) Explain that EE is a systematic and structured process of exploring and sharing information about our environment and activities to achieve a better understanding of the environment and the interventions necessary to enhance sustainability in the modern technology and development and with the development of agriculture and industrialization and using of technologies, different chemical fertilizers in farming, environmental challenges have become concerning problem for human culture With considering the value of environmental protection, some developed nations included the problem of protecting the environment in their environmental education political program (UN, 1972), Together Environmental education plays an important role in the protection and restoration of the global ecosystem, along with the introduction of new environmentally friendly technology to reduce the effect of human activities on the climate.

Bas (2010) inducted a study among secondary students on environmental awareness, the results showed that there is no understanding of the environment among higher-level ninth standard students; it also notices that there is no different significant gender gap in environmental conservation but there is a significant difference between environmental knowledge means numbers of students concerning their parents 'qualifications.

EE has been used as a significant means of educating students on environmental problems from pre-school to higher education the goal of the study is to explore the attitudes of undergraduate students towards the environment after the "Climate, Person and Society" course. To this specific aim, students ' environmental attitudes were analyzed according to the factors of gender and form of faculty. As a

way of gathering data, a questionnaire consisting of 2 sections titled Personal Data and Measurement of Attitude towards Environment was used. After the course "Human, Climate, and Community" it could be concluded that university students had good attitudes to the world. It was also found that girls' students were more environmentally aware than boys' students (Köse, et al & Bilen, 2011).

EE is one of the effective strategies for growing the understanding and information about environment, consciousness and attitude knowledge of the public regarding the environment. If the understanding, knowledge, consciousness, and attitude of the peoples towards environmental issues are strong it is an indicator that the rate of environmental literacy among the peoples is also high. Increasing awareness about the world can lead to changes in behavior or practice, it is necessary to determine what humans think about the environment and how they feel about the environment and what behavior they take that can help or damage the environment to create a community's establishing sustainability resilience and protect the environment (Thapa, 2001).

Since environmental issues affect all living things in the world (biosphere, human) and thus make them a "global issue considering the idea that environmental concepts are common property (Anderson & Bateman, 2000) No country or state can claim that environmental damage only remains within their borders. They do not affect other countries and, likewise, they cannot prove that they or can move away from environmental problems occurring anywhere in the world (Boykoff, 2007), As the universities educated the new generations who are supposed to be the leaders of tomorrow in many various areas of society, who will be the decision-makers so the role of universities in public environmental education is high for young generations. The future activities of these populations will affect the natural sustainability of the approach to human life and behaviors will have major environmental implications (Budak, et al, Chrysanthi, & Lioutas, (2018), Talay et al., 2004) that's why universities have a deep responsibility to raise awareness, information, technology, and resources to be generated on the environment Gündüz (2017) found in her research the identification of environmental behaviors and attitudes of university students with different cultures, a survey was conducted. The research sample has consisted of 300 undergraduate students from the different cultures who study at the Near East University in the academic years 2015-2016, In this research, using the environmental behavior and Environmental development and in this research model

as data collection tool applied to a student consisted of 60 questions by Using SPSS 20.0 the data obtained is analyses at the end of the study it was noted that university student behavior and attitudes from the different cultures toward the environment are not enough.

Adeolu et al. (2014) suggested that different strategies to combine individual awareness and behavioral attitudes are needed to develop communication in the field of EE Since this work-based approach requires a multidisciplinary connection between the environment, people, culture, society, and environmental clubs should be used.

According to research by (sunder, 2007) the curriculum for environmental education may be an important part of the student program at different levels of the study, It is necessary for the survival of the human binge and the future of our planet. EE is also interdisciplinary and the acquired knowledge and skills can be applied easily to other disciplines.

Yalçinkaya and ÇETİN (2018) studied the attitude and opinions of school students about environmental education, The study results indicate there is a difference in attitude, opinions of school students regarding gender and school type about environmental education whereas there is no significant difference in class level. Researchers recommended that schools and colleges organize activities that will promote environmental education and awareness among students.

Praharaj (1991) in his research work, had conducted on environmental attitude and environmental awareness and understanding of environmental education among preservers and teachers in service. He found in his study that while conceptual knowledge about the environment was moderate, the level of environmental consciousness among teachers on preserves was low, Teachers perceived in this study that environmental education at school and college can be a major part of the syllabus of social science and general science and the role of mass media in the transport of the environmental education.

In her research Gopalakrishnan et al., (1992) examined the effect of EE on children in primary school. She found in her analysis that the distribution of the entire sample's total EE test scores approached the normal form thus suggesting that studying EE had a significant effect on the students.

Concise factors that cause environmental problems, such as rapid population growth, unplanned urbanization, industrialization, and tourism cannot be steadily

protecting natural resources either. These factors have prompted ecologists to ask the question "How does one affect the environment?" Whatever the definitions, and from any perspective seen or defined, the common point in all of this, is that the important definitions are the environment? Is that the relevant concepts are the world? Is there a relationship between the world and man? (Dieh, 2018).

Canadian consumers and environmental behaviors, awareness. Results showed that French- Canadians are more informed knowledge and concerned about environmental issues compared to their English counterparts perceive It's also necessary to behave to environmentally friendly way, assume that all companies businesses operate responsibly towards environment and perceive environmental concerns to a greater degree, however, are more likely to recycling and are more willing to pay price for goods for environmentally friendly products. There have also been cross-cultural disparities regarding the classic model (knowledge-attitude-behavior).

In this study Loughland et al. (2003) looked at the factors influencing the environmental conceptions of young people. These factors were explained because the relationship between the factors and the young's knowledge would appear to be an important objective of EE. The authors looked at the variables in their study–both quantitative and based on the views of the students expressed in the questionnaire that correlated with the students expressing a definition of environment relationship rather than an object concept The determining factors were location, population, socio-economic background, school year, and language background.

Sauvé (2005) In his research found the relationship between the ecosystem and people was found to be subject of environmental education It is common to find the main theme of contemporary EE is the study and development of the relationship between environment landscape and humans environments, however, the current spread of this concept has taken time to move forward from an initial focus on environmental science and climate. Focusing on human relationships has been critical to our present understanding of environmental issues.

Akış (2011) reported a survey study about environmental knowledge in North Cyprus according to his findings there was no statistically significant association between environmental awareness knowledge and variables such as age, educational level, residency region, nationality, and gender.

Şafaklı (2012) in this research, environmental attitudes in Northern Cyprus were studied and the results indicate that participants had positive towards environmental attitude and although environmental education and participation environmentalists are not effective.

Çakır et al. (2010) indicated that science teacher education plays a major role in learning about the environmental issues among participant since concept about nature principles are discussed in science lessons several journal authors focus on the teachers of the present and future science also teachers are greatly responsible for sustaining environmental education in schools, However, Ibarra et al., (2009) stated that all teachers should know Environmental principles regardless of their subject area so that they can be a better role for students.

Ünal (2008) stated that the perceptions of Turkish teachers on environmental issues can lead to increased awareness of their environment and thus positively change their participants ' attitudes for the example if the educator recycling paper rather of throwing into garbage box to shows out to the students how valuable recycling is, this could be a good example for students.

Bhat et al. & Parrey (2017) In this study, was explored the connection between environmental education and sustainability in India this study provided an overview of the various initiatives on the role of energy efficiency at the global and national levels towards sustainable development, Besides, the study provides a brief analysis of the various educational programs, academic programmers and curriculum development measures to achieve sustainability goals Küçükoğlu and Yıldırım, (2014) investigated the environmental attitudes and awareness of farmers in Izmir/Turkey to the environment According to this research, The attitude of farmers towards the environment is important, so that they can provide environmental protection while directing agricultural activity the attitude of farmers' to the environment is important so that they can include protecting the environment while directing agricultural activity.

Gwekwerere (2014) notes that a positive attitude towards environmental education in schools should be one in which students ' environmental perspectives are discussed and then questioned. However, in order for school students to engage meaningfully in environmental protection activities, they need to have specific thinking qualities and behavior and feeling.

Tuncer et al. (2007) in this study The effects of schools type (public and private) and gender of Turkish youth on environmental attitudes have been investigated, They concluded from the study that although there were differences between individual categories, there is widespread support for environmental conservation among young people living in turkey, Another study relating to Turkish students examined the attitudes of students towards the ecosystem and their desire to learning about gender-specific protection of the environment, The findings of this research showed that students Turkish students have a good attitude towards environmental issues, that participants are interested to find solutions to environmental concerns and demonstrate positive trends.

Madsen (1996) in this research explained the environmental knowledge and environmental awareness and dedication are needed to achieve environmental restoration and protection To do this, participants need to have a fundamental understanding of environmental concerns Furthermore, environmental education teachers must not only need to have comprehensive awareness and understanding of environmental problems but also need to have an experience and awareness, environmental behavior to solve these issues.

In their experimental study (Kant & Sharma, 2013) it was found that people in rural communities had high levels of environmental awareness than people in urban communities, However, (Worsley & Skrzypiec, 1998) it was found that young people in urban and rural have a great interest in environmental problems and there were no significant in students ' environmental knowledge from rural and urban communities, Other factors, such as the family history of teacher, type of school, can affect students ' environmental awareness aside from experiences in nature environmental education was preceded by a growing global interest in environmental issues, with groups such as conservationists promoting environmental conservation education and legislative pressure (Disinger, 1983). Palmer highlighted different precedents and parallel disciplines such as nature studies, rural studies, environmental studies, urban studies, urban environment, and conservation education (Palmer, 1998).

Shobeiri et al. (2007) in his research concluded that students 'understanding of the environment is often influenced by the type of school management, whether private or public and cultural differences, The research showed that students from the government schools had higher rates of understanding than students from the private

schools. However, they did not recognize explanations why the environmental awareness of students may have been better supported by the public schools.

İlseven et al.(2018) The farmers ' awareness of the use of pesticides and agricultural machinery used for spraying pesticides was determined in their study, The results showed that the majority of farmers own a store in the original chemical packs to keep and protect their chemicals under lock, For farmers to know the risk associated with the pesticides or chemicals to be used, they read the instructions before use and wear protective clothing when preparing solution There is a statistically difference between male and female farmers affecting on environmental awareness by plant spraying, therefore, gender also affects the consciousness of vegetable product and spraying plant There is also no correlation between the application of PPE and the type of sprayer The result suggested that there is no different positive in monthly income in using pesticide- related machinery. Farmers are aware of modern pesticide spraying machinery and use irrigation systems during the spraying process as well.

Pe'er et al. (2007) in this study found that a lack of knowledge of the environment and an attitude environment about the world could be due to a lack of properly qualified teachers, Under this, numerous international environmental education conferences and studies have0 highlighted the value of teacher education and teacher preparation as a key factor in the effective successful application of environmental education.

Two significant trends, according to Handl (2012) have an impact on the development and implementation of environment education these movements are the movements of the community and education, Natural and unofficial studies of 13 education and conservation awareness have also emerged in line with these trends, which have greatly contributed to the advancement of environmental education
In this study Özden (2008) noticed that teachers living in urban areas have a more optimistic awareness and attitude toward environmental issues than those living in rural place stating that the environmental attitudes of teachers can be positively influenced by the importance of environmental problems in big cities. However, in this research (Esa, 2010) found that teacher in Malaysian from rural areas was previously more interested in teaching about the environment than those from urban areas and had a strong positive attitude.

In his research Wilson (2010) clarified several ways for integrated environmental education into childhood education, The first is to encourage children to experience environments such as farming, watering the flowers and feeding the animals in the schoolyard, The second approach is to inspire children through these kinds of interactions by creating a learning environment that helps them to build up their learning.

In this research Çabuk and Karacaoğlu (2003) found that the degree of environmental awareness among promising teachers who took the environmental conservation course was much greater than that of teachers who did not take the environmental conservation course, Besides, Sam and Gürsakal (2010) reported that prospective teachers have a great deal of environmental awareness and knowledge of the environment relative to other prospective teachers who have not taken the education of the environment.

In 1975 the UNESCO Environment Office conducted a study entitled "Resource Evaluation for Environmental Education: Criteria and Expectations of Member States" in 136 countries as a follow- to the conference in Stockholm. The findings of this study showed that the environment an inefficient in terms of quality and quantity, The International Environmental Education Program (IEEP) was established in partnership with UNESCO and the (UNEP) to combat this inefficiency. In this research Miles et al. (2006), studied the pre-service educators with the senior and junior to address the role of Australia's primary-level professional development programs in preparing potential teachers for community environmental experience and awareness, The findings showed that the teacher training curriculum was inadequate to prepare teachers to learn environmental conservation in addition to providing information and environmental education experiences.

Environmental Awareness

Nowadays, we face many social problems including environmental issues which clarified that the world is now recovering from many series sufferings by terrible human actions that obstruct the environment(Rogayan, 2019), The goal for everyone is to take action and push towards a common cause in the preservation of life on Earth, Students and farmers consciousness has been identified as an important resource in environmental field for Information through awareness which has a major

effect to behavioral change (Gonzaga, 2016).

One of the most prominent phenomena in the recent decade is the growing interest in environmental problems and their impact on public awareness, The rapid decline of the Natural systems resources and increasingly deteriorating climate are facts which can no longer be refused, Those are dangerous situations that the threaten existence of man and the earth both (Marpa & Juele, 2016), Multiple countries around the world have developed active and strong environmental program among the general public and students in general, for instance, India has been one of the fastest-growing countries in the world in resolving its environmental problems and improving its environmental protection (Sivamoorthy & et al.,2013).

Environmental issues have become problems of great concern to many sections of the world; however, many citizens in rich countries have a low level of awareness and knowledge of environmental issues (Hailu, 2016). in this study (Anilan, 2014) found that the level of environmental awareness among students in high school is high, as one research reveals, The level of environmental conservation and solid waste recycling activities at one Malaysian university campus was also evaluated (Omran & Baharuddin, 2017).

Liefländer and Bogner (2018) This research explores the relationship between the students 'environmental awareness and their environmental attitudes in the context of environmental intervention, We used questions to monitor ’ students environmental perceptions in three dimension of environmental knowledge (system, awareness of the practice, and knowledge of effectiveness) possibly due to measurement constraints (e.g. social desirability), we found no association between attitude Preservation and the environmental knowledge at all times of study.

Environmental education is intended to help people and organizations gain understanding and information about environmental problems and the environment (SILO, 2015). There are theoretical, physiological, and behavioral aspects of environmental knowledge. In other terms, environmental knowledge includes ideas that include all environmental decisions, values, and perceptions (Hasiloglu & Kunduraci, 2018).

Several kinds of research were conducted to test the students ' environmental awareness and activities at different levels (Singh, 2015), The studies (Milos & Cicek, 2014) focused mainly on college students about the' environmental awareness and activities and Students' environmental knowledge and understanding of their

research stream, a region of living and degree of understanding, behavior, involvement of college students in environmental practices (Bhat & et al., 2016) level of environmental knowledge, attitude, training on the recycling of organic waste by the university students And the perceptions of environmental risks and knowledge about environment among high school students (Omran & Baharuddin, 2017).

Shahnawaj (1990) in his research about environmental attitude & environmental awareness of students and teachers of higher and secondary schools, has pointed out in his research that women hold substantially more environmental consciousness than men.

In contrast, in this study (Tripathi,2000) stated that the boys to had good environmental knowledge, Environmental experts and world educators have consistently pointed out that a solution to environmental problems in the education system would involve a deep-rooted understanding of the environment, Environmental consciousness is a very important subject for a conversation today and there are plenty of workshops and conferences at different levels, Environmental and energy-related issues cannot be addressed unless the students are aware of them, since the students are our country's future citizens, Developing knowledge and attitude of environmental protection and preservation is a necessity for each individual.

In this study Shobeiri (2005) notes that resolving the current environmental problem requires environmental awareness and knowledge of the environment and must have a deep background and experience in the educational system at all levels, Current curricula at the secondary, primary and university levels offer many opportunities for students to become aware of the environmental, Awareness will make students more aware of environmental problems and thus the ability to shape their behaviors and attitudes, Responsible for its care is fundamental to sustainable development and environmental education.

Harun et al.(2011) The environmental consciousness of the students is strongly affected by their experience, awareness and attitude and sensitivity to the environment, This research aims to determine the level of awareness among Malaysian students regarding environmental literacy and attitude towards environmental issues, Data were collected using a questionnaire consisting of teachers and lecturers The questionnaire items consider the local community's

environmental issues and cultural sensitivities. Testing among 50 students of the form shows a good level of internal consistency of attitude and knowledge. The finding indicates that students generally have a higher degree of understanding of the environment in general except for some items that assess environmental problems such as climate change, greenhouse gases, The our attitudes are affected by the level of environmental awareness.

This research Al-Rabaani and Al-Mekhlafi, (2009) suggests that people will have to build understanding about the environment and gain knowledge and adopt behaviors that will direct them to action that is more environmentally friendly. Explained from their study Palmberg and Kuru (2000) that environmental knowledge background and environmental attitude are major factors for taking responsibility for the environment, Therefore, it is necessary to understand the current awareness and practices of students in order to enable them to understand the requirements of sustainable waste treatment and to lead the change de la Vega (2004) compared levels of attitude and awareness, knowledge towards pollution of environmental of Participants students from two governorates, The goals of determining AKA levels among students living under various environmental conditions,

The result of this study was statistically significant to have differences between the students from the two governorates about all environmental variables that were tested and learners from both cities identified newspapers as the most essential component of knowledge on environmental degradation and pollution.

A study on environmental attitude and awareness among students (Thakur, 2012) this study was performed using a descriptive survey method on a sample of 200 high school students from four schools and data was collected. The main findings were 1.students from Government and private schools demonstrated similar environmental consciousness 2. Students in science demonstrated a very high degree of global understanding of the climate than students who favor humanities, 3. Men students demonstrated a higher degree of environmental consciousness than women students but overall, no substantial difference was found between men and women students.

Bharambe (2013) found in his research that participants in high school do not have awareness to the environment, there is no significant variation in environmental knowledge regarding sexual and there is a considerable variation between students in the' environmental conservation concerning their parents ' qualifications, The

awareness of the environment among students who have highly qualified parents is more than the parents who are less qualified the environmental conservation and behavior is high among the learners who parents are farmer than students whose parents are teachers and labor.

Kant and Sharma (2013) in this research investigated secondary school students ' awareness of their intelligence regarding the environment, The study sample consisted of 100 high school students from the various schools of Faridabad district Students divided into two groups of high and low intelligence and then measured their respective of the environmental awareness, The study results indicate that there is a major difference between rural and urban students about environmental conservation as well as there is a positive relationship between knowledge and awareness.

Grewal (2011) in this research Studied the environmental attitude and environmental awareness of school children in the relationship between intelligence and language, The results showed that females have a high degree of environmental conservation and attitude compared to males but that males respondents are not significantly different from others based on their environmental awareness, A disparity was found in the school children's about environmental knowledge with regard local environment the respondents found variation between intelligence and language. There was a connection between environmental awareness and type of respondents, The language of the participation was related closely to the various dimensions of the environmental awareness such as safety, hygiene, forest and population The fire, environmental concerns, and overall environmental awareness while not closely associated with wildlife, are Polluted.

Nagra and Kaur (2013) in this study determine the Environmental knowledge and environmental education of teachers in high school regarding the type of school, gender and subject streams. Environmental Awareness and attitude Test has been used for gathering data from a random sample of 200 secondary school teachers for data analysis Statistical methods such as t-test and standard deviation, mean, applied for analysis data. The results showed an average degree of knowledge in these teachers about environmental education, there is no major difference was identified in environmental education knowledge about the type of school, gender and subject streams.

Islam (2008) found the level of understanding and involvement of the respondents in the environmentally friendly activities are low in Bangladesh, Along with many other recommendations, respondents in this country put stress on acquiring environmental information and tree plantation to resolve this situation. in his research Nagra (2010) indicated that environmental awareness involves building understanding and knowledge about environmental protection among citizens and social organizations, However, other research specified that environment attitude and understanding does not involve information about the environmental awareness but also the values and skills required to solve environmental problems, explained that understanding of the environment is the first stage towards environmental education, which essentially contributes to environmental behavior.(Sengupta & Maji,2010).

Gündüz et al. (2015) aim of this study to assess the difference in environmental awareness among students in Northern Cyprus and Azerbaijan, Turkey, by using Face-- interviews were carried out to the instructional level of students under the heading “environmental awareness”. The study Sample was consisting of students studying in northern Cyprus, Turkey during the academic period 2012- 2013. The study results showed that environmentally aware peoples always try to avoid the horrible fate of nature, they believe that the best ways to create this awareness are to lead people to trusted higher education institutions, finding also indicated that the nations examined were not resistant to environmental problems, The research goes on to explain these environmental concerns Environmental awareness in these countries is essential; thus, a comprehensive education program should be implemented and enforced starting from pre-school and various campaigns.

Gündüz and Bilir (2012) this study aims to measure the level of environmental conservation of 470 peoples studying in Northern Cyprus for water conservation and environmental education. In these questionnaire 175 males and 295 female students, quantitative research methods used in this research the analysis is obtained by the respondent questionnaire and results have analysis by SPSS software program. Environmental problems have become an important issue in the last 20 years, The t-test unrelated was used to measure the gender variance in this variance according to a level of nationality, region and parents are detected by Scheffe, ANOVA, Moreover, to analyze the attitudes and awareness of students regarding

environmental education and environmental behavior 0.87 respect to Cranach Alpha. The results finding from this study show the students generally have a high level of awareness for water conservation and environmental education; however, this awareness is not reflected at a behavioral level.

The research was conducted by Akkor, & Gündüz (2017) to find the behavior and attitude of students in the university in Northern Cyprus about EE the sample consisted of 175 college students in Northern Cyprus in the same year based on the “Environmental Standards" and "Environmental Awareness Meter" for respondents as information for collection technique. The participants 'responses were analyzed quantitatively using the SPSS program it found that girls students have better environmental behaviors and environmentally awareness sensitive more than boys students.

Ragheb and Beard (1982) conducted a research to assess the effect and permanence of the Ihlara Valley Natural Education project on environmental awareness, environmental attitude, opinion and behavior, the results of the analysis indicated that the nature education program had an impact on people's environmental awareness, attitude and behavior, and its length.

Dimopoulos and Pantis (2003) in his research “Environmental background, Attitudes, and Behavior in Secondary Education” he has studded a secondary school student knowledge, attitude, and awareness towered environment. This study has conducted as a governmental study that has taken 9000 secondary school students. The method that has been used is the mixed method. The study has used many types of questions to collect the data. The result was that majority of the students have environmental awareness and attitude and a positive behavior towered environment. In his research Bahar (2000) study the degree of previous awareness of university students in the field of environmental education and misconceptions" conducted on 200 university students; to analyze the level of students' knowledge about certain environmental concepts such as the ozone layer and the impact of global warming. This discovery reveals that most students either do not know or have the wrong information on the subject even when they took the "environmental science" lesson. The results also revealed that some of these students took the lessons about "Environment and Humans in high school.

Görümlü (2003) has studied the environmental knowledge of high school students the quantitative research has been used and the content analysis was the study design, the study has conducted on school students in Ankara. The result was that the student cannot answer the question that related to the environment and environmental issues; this result discovers that the student's knowledge of the environment is very inadequate.

El-Salam et al. (2009) have conducted many tests to measure the affection of environmental awareness, environmental attitudes of students in elementary school on environmental education as a result of the education provided to them. The result was that environmental knowledge has been increased by 69%, and the environmental attitudes have been increased until 88%.

Agriculture Extension

Essentially, Agriculture Extension is the one who provides new ideas and information to rural places in order to effect change and improve the quality life of farmers and their communities it can be useful among farmers for environmental education, Therefore an extension is of great importance Farmworkers would be missing access to the training and support needed to improve their farming and other activities without agriculture extension, The significance of the extension of agriculture can be better described if its three major elements are taken into account: the farm family, knowledge of communication (Abi-Ghanem, et al, & Parker, 2009).

The goal of extension in agricultural is to change perspective of the farmers towards their problems, agriculture Extension is concerned not only economic and physical objectives but also with improvement of the rural populations themselves, therefore, agriculture Service agents discuss issues with people in rural areas; assist them in gaining a clearer insight into their agricultural issues as well as environmental issues in deciding how to overcome these problems, how to make better use of resources and technology Assist farmers in introducing new technologies, crops, breeds, etc. Provide information on promising new research results, create opportunities for farmers processing, marketing, etc (Malawi, 2000), assist farmers to get a clear vision of their growth. However, agricultural extension workers must have the technical ability of rural life, cultural knowledge of adult education, language and protocols of religion (Jaradat, 2003).

The agricultural extension agents are primarily responsible for raising

awareness among farmers across the community and has a strong dependence on sharing of knowledge among the farmers (Hedjazi et al., 2006), The key concerns of extension services are the production of agricultural education, information, and skills, and environmental education (Farooq & et al., 2007) Accordingly, the primary purpose of agricultural extension programs is to disseminate and educate farmers with the current agricultural technologies through the use of various extension teaching methods such as human, community and modern communication systems.

According to the (FAO,1985) study, the widespread acceptance of research findings by the population of farmers in many developing countries remains quite limited, This system requires the continuous flow of knowledge from farmers to researchers, agricultural extension services provide the passage from researchers to the farmers. But sadly, in this situation extension programs have failed to effectively carry out their role. Several researchers (Hamilton & Hudson, 2017; Ozur et al., 2007; Worth, 2007) have examined and the identification of signs for reworking agricultural extension services approaches, agricultural extension attitudes of specific tasks for their professionals, farmers' perceptions and extension professionals' perceptions of shared agricultural technology costs and the students' attitude of agricultural extension, effect of information provided to farmers by agriculture extension specialists as farmers imagine (Knook& et al., 2018). However, these studies do not assess the difference in the role of agriculture extension actors, particularly extension workers and farmers about the purpose of agriculture extension office and extension teaching materials, training skills and instruments and principles of agricultural extension (Al-Ajelli & Mohammad, 2017).

This study attempted to overcome this problem in awareness and literature aimed to evaluate the perception and knowledge the different faces of agricultural extension by extension agents and farmer's, Because of a worldwide movement to improve the regional extension programs in developing nations that began late, agricultural extension is taking on a new dimension, In the modern learning needs of agriculture in the 20th century, populations appear as the world enters an age of modernization, environmental education, globalization decentralization that affecting both developed and no developing farmers, although, in different ways around the world, there is a fresh and strong determination to address the threats of hunger and poverty in rural areas (Schnepf, 2004).

The agriculture Extension agents could be a force in this fight, regardless of

whether they belong to governmental organizations, government agencies, institutions, or farmers 'partnerships, NGOs, agriculture Extension in developing nations has a current key role and requires serious attention from the political decision-makers for its meaningful reform and modernization like some important daily works such as health and education, the extension work on agriculture is also important for farmers 'welfare regardless of who works it as long as it is done successfully as we have seen in recent years (AL-Abbassi, 2012). Agricultural extension workers could be employed in private extension service firms, personal extension consultants, non-governmental organizations, universities and farmers organizations and academic institutes and maybe others.

The goal of this research to determine the perceived and measured training need for agricultural extension staff in Iraq AL-Abbassi and AL-Harbawi (2012) the goal of this study to determine to find the relationship between these requirements and other professional and personal characteristics of workers' Data collected through a questionnaire; personal and vocational characteristics were included in the first part of the study, the second part includes 16 items Concerning the training requirements by using Date analysis, correlation, Means were used concerning the individual correlation. The findings indicated a positive correlation between calculated training needs and perceived; also there was a significant relationship between training requirements with years of comprehensive work experience desire for extension work and previous extension learning, while there was no significant correlation with educational qualification, workplace, and specialization, The researchers suggested that attention be given to the point of view of the worker in designing their training plans and that all categories of the worker be included in the service training.

Hosseini et al. (2012) this study aimed to explore the role of extension methods in enhancing rural women who were members of this fund in their capacity for innovation. The total population was 600 and picked 173. The study results show the participants ' level of potential for creativity was in the medium range. Based on the findings, respondents favored methods of group teaching as opposed to methods of individual and mass teaching.

Khan and Akram (2012) this research used to determine the performance of different extension methods and expansion services employed by agriculture extension in Four districts randomly selected a total of 240 sample participants, 60

district farmers each, With the help of SPSS program. The data obtained analysis by using descriptive statistics; the finding of the study indicated that the perception of the literate respondents regarding the activities of agricultural extension workers and extension programs was high, evaluation of farm extension programs by research workers showed that, based on their weighted score, farming /home visits were viewed as a very successful and better method ranked 1, followed by field practice days at 2 and experimental plots at 3.

Abdullahi et al. (2013) Are determined the degree what Mobile phones facilitate extension roles and analyze the difference information exchange by extension agents in agricultural development who use mobile and those that not use This research was conducted in Nigeria, interview and Group Discussions focus used to collect data from 40 and 12 randomly selected extension agents respectively. The result showed 65% of extension agents interviewed is using mobile for their assignments; the result further shows that there were significant differences between extension agents using mobile and those who do not.

In his study Luukkainen (2012) aimed to collect information from the farmers on extension practices and agriculture extension services to suggest using of new extension practices in farming, to compare efficiency of extension processes to recommend the most effective extension method for innovation to farmers and results of the research, Two sets of questionnaires were the main method of obtaining data, one given to extension providers and another to farmers, focusing on three ways of guidance: farmer to farmer and facilitator of dissemination and demonstrations. The results showed that farmer-to-farmer is the more efficient method of extension of data.

The attitude of farmers toward extension services

An agricultural extension was originally intended to support farmers in comprehensive farm management, covering specific topics such as soil management and poor soil management (Klerkx & Jansen, 2010) as well as Extension officials are responsible in the office and agricultural visits for a variety of ways to exchange information with farmers, including face to face, (Klerkx & et al., 2010).

Farmers in the Kurdistan region Iraq suffer from the loss of extension services both qualitatively and quantitatively, and in some cases under-trained extension workers face various challenges in answering farmers ' questions, during

farm and office, irrespective how the best extension professional is committed to serving farmers, when farmers negatively perceive these extension professionals result of the inability to answer to farmers' questions, extension efforts become useless (Ferroni & Zhou, 2011). Some farmers receive an intermediate education based on traditional agriculture (Scialabba& Hattam, 2002) farmers tend to use extension services in general unlike most farmers who do not receive formal education and are technologically marginalized, they tend to ignore the extension system. The FAO, (2010-2011) indicated that participatory approaches that encourage contact between researchers and farmers lead to positive reactions that allow researchers to adapt innovations to the needs of farmers.

Rattura and Matti (2001) revealed a very poor link between the extension departments and other service departments such as research and training in ministries Extension staff serve as focal points for communicating research findings to farmers, Agricultural extension office, which is primarily responsible for increasing awareness among farmers across the world is a heavy dependence on information exchange among producers (Hedjazi et al, 2006), The main concerns of the extension program in farming are farming awareness, knowledge and skills development (Ngongo, 2016).

Therefore, extension agencies are charged with the primary objective of disseminating and educating farmers with the latest farming technology using various extension teaching practices such as methods of person, community and mass communication Farming extension aims to provide farmers across the nation useful and important information to improve agricultural production, organizational quality and training for organizational efficiency and effectiveness in any form in this research Ovwigho (2011) described two major types of training courses in agriculture extension is pre-employment education and job training farming program contributes to the development of the country's economy providing services and food for the communities, accounting for almost 45% of Iraq's rural community and employing nearly 20 % of the workers. Farming workers plays an important role in agricultural development in rural areas; agricultural extension work success depends on the competency (skills & knowledge) of the extension agent which is an essential element in extension activities. Extension workers should have specialized experience in many fields that provide them with the necessary skills and experience to be able to do the work they are assigned through preparation of the continuous

change in skills and awareness Agricultural extension officers need to keep up with this transition, extension nowadays plays a major role in agricultural development and environmental education; extension work success in agriculture depends on skills and expertise that are the basic elements of all agricultural expansion activities (Saleh & et al., 2016).

Olufemi et al. (2016) in this research, compare the students 'level of awareness &knowledge& attitude about environmental degradation. The aim was to evaluate the level (AKA) among respondents living under specific environmental situations. Participants included 753 students specifically selected from grades 8 to 12 from the information and attitude questionnaire of the two provinces, questionnaire Data were analyzed using t-tests and descriptive statistical statistics, Statistically meaningful differences were found among participants from both regions across all of the environmental variables studied, where students from Mpumalanga province had higher mean scores than their counterparts from Gauteng. Students from both regions have identified newspapers as the primary source of knowledge on environmental pollution.

Agriculture Extension in Iraq

After the change in Iraq 2003, Iraq's agricultural extension system faced several changes as the Ministry of Agriculture canceled many agricultural divisions and some agricultural extension programs and transferring some of them Significant amounts were spent on increasing agricultural production through the extension of agriculture and the development and building a large number of remote centers and farms in Iraq's governorates (Haleem, 2018). The IAER Initiative that collaborates with the United States Department of Agricultural / International Agricultural Program and United States Department of farming / Regional Agriculture and Food Institute funded by the State Department through improving the Iraqi extension program, IAER was designed to address the substantial lack of new technology and agricultural education available to rural Iraqi communities The goal of the IAER was to promote rural economic development in Iraq by activation agricultural extension program this objectives were two goals: first to increase agricultural capacity By extending training to Iraqi extension staff, and second to promote effective interagency cooperation and collaboration among Iraqi government agencies to support Extension.

Arhaeem (2019) the goal of this research to identify obstacles to the communication of agricultural extensions from agricultural workers in the Kirkuk Governorate and to find a connection between the limitations of farming extension connection in Province and each of factors (administrative place, age, academic performance), the study involved all farm workers in the Kirkuk Governorate's Ministry of farming (113) and then removed the pilot data set respondents 50% after that, there were (41) Participants in the study sample. The research data were collected through a questionnaire. The first step contained data on farm employees; the second part included a method to measure the challenges to agricultural extension contact. The finding of the study reveals that the obstacles of farming extension interaction divided to four sections, Very big and significant barriers, interaction channel-related agricultural communication barriers (4) and big challenges, barriers to farming extension information sharing related to the environment (3), Challenges are heavy and big (5), also The results of this study demonstrate that there is a correlation between the connectivity limitations of the participants and the factors (performance, age)and the lack of a relationship between the information-sharing barriers from the respondents' perspective and the unclear place achieved several findings and recommendations.

Agricultural extension is a key institutional component which facilitates the exchange and transmission of knowledge and information may be useful to the customer, Unfortunately, in most developing countries, a farming extension has limited to spread modern technology to farmers and the situation continues to deteriorate by the day (Eicher, 2001). This inability is responsible for increasing stress of increasing production food problems and limited capacity to face changing requirement of modern farming (World Bank, 2002). Agriculture has emerged as the backbone of the world economy and has potential for growth, It is the way to gain about 50% of the world's people (Abdullah & et al., 2005).

Farming is actively leading, locally and globally on the population operation which forms the basis for economic and social development, a study has been documented (Shizari & et al., 2006). Such years of residency in rural areas, level of education and activities the effect on involvement training programs on educational level, Citizen training requires were different compared to regular-indigenous extension staff and there was poor coordination between the duration of work and they require for sustainability coaching The top five skills Agricultural extension

agents need to Including environmental waste treatment and decentralized technology as well as soil degradation and water protection and integrated crop management human resource development programs will research how to tackle the through-service regions in training programs (Alibaygi & Zarafshani, 2008).

In the research of Saleh (2015) the highest rate is 95%, (85) for employees who've already studied agricultural extension courses and least was 6%, (5) for employees who've not studied agricultural extension lessons of the total employees, this indicates that most extensions are perceived agricultural extension courses.

Based on the findings of the research Abdulhamid and Emmanuel (2012) notice there are training requires for extension staff from Nigeria, and there are issues associated with farming extension office service. Depending on these results it is suggested that Extension employees must be encouraged to attend workshops, additional seminars, and lessons at the higher organizations all of them had a good attitude to their vocation and most are happy with their work.

Al-Ghamdi and Shanafey (2008) According to this research agriculture, extension workers of a large percentage in the field of gardening did not receive training in diseases, pests, equipment, and skills training required in the fight against diseases, insects, machinery for both engineers and farming technician increased, agricultural extension aims to change the actions of the mentor's awareness, abilities, behavior, ideas in order to improve their living standard as persons, households, communities, and environment (Saleh et al, 2004). Humans have been the most important component of the successful agricultural extension system, The aim of the community development project is to better educate the beneficiaries and change their behavior strongly to provide them with the expertise to develop production methods and improve land management, and to grow the farmers 'ability to themselves (Al-Rimawi & et al., 1996), an extension has made a considerable contribution to development of farming and rural areas. The agricultural extension position, as in many other developing countries, continues to spread agricultural technology and innovation among farmers, leading to higher productivity (Evenson, 1997). Extension, along with other factors in agricultural production, has seen a significant increasein farmers ' use of improved modern farming practices.

The Agricultural research stations developing new technologies and ideas to those working in agriculture, while extension staff communicates and promotes these to farmers when they are adopted and they can reach the researchers easily by extension for a solution to farmers and producers' problems and technology transfer (farming Extension Manual, 2005), agricultural extension plays a major role improving productivity, benefit and remaining poor(Luqman & et al., 2004&Farooq and Ishaq, 2005) This failure is due to several factors: poor research-extension connections, absence of mobility, lack of resources and little training opportunities to upgrade agriculture extension staff skills. A low lack of resources production of major crops is responsible for an inefficient and isolated agricultural extension program (Butt et al, 2005& Khan, 2005).

Al-Ajelli and Mohammad (2017) intended in their study to determine the level of use agricultural extension methods by agricultural extension staff in the Governorate of Sulaimani and their correlation with personal and functional variables (gender, educational level, age, specialization, job title, duration of the employment service, duration the agricultural extension service, previous training, attitude towards agricultural extension The sample consisted agriculture extension workers working in Sulaimani's agricultural extension directorate, survey were obtained by questionnaire, the first part contained some personal information and functional variables while the second part concentrated on evaluating the level usage of agricultural extension methods. Data is analyses using the SPSS statistical system, The results showed a significant association between the degree of use of agricultural extension methods and each of the following variables: age, duration of the agricultural extension service, the employment service period, access to agricultural information sources, attitude towards agricultural extension and job satisfaction.

The researchers recommend that the agricultural sector concerned in the Kurdistan region Iraq pay more attention to the agricultural sector and activate and support operations agriculture and open intensive training courses are very important for the staff that works in the agricultural extension sections and departments and role of media in developing agriculture in the region by opening television channels majoring in the agricultural program.

CHAPTER III

Methodology

Introduction

This section includes the approaches used in this study; including a field of study, techniques for data collection and sampling procedures and describes the study design that was used with this section. The section also explains study sample, sampling techniques, and data collection procedures, processes used to analyze the data.

Research Design

In this research, it is investigated whether the difference between farmers and students who studying in agriculture college in Erbil and Duhuk and Sulaimani governorate about Environmental knowledge and background and environmental issues as well as environmental awareness.

The research consists of farmers in some villages around the Erbil capital of the Kurdistan region Iraq and students were in the College of Agriculture in three universities from the KRI in an autumn semester for the academic year 2019 – 2020. The research study consisted of 400 samples (200) students and (200) farmers.

KRI is a large agricultural region total population of this part of Iraq is around 8 million, nearly 50 % of the KRI population lives in rural villages and mountainous areas, and most of them are employed by the agricultural sector The environmental conditions of this region provide a wide area of opportunities for agricultural development due to the complexity of soil, hydrological and climatic conditions requiring environmentally sensitive agricultural development practices to be included in educational, scientific, extension and training programs. This area has been exposed to a range of pressures resulting from population increase and effects of wars, climate change, inadequate land-use planning, political conflicts, and disruption on ecosystems (World Bank, 2017), Annual precipitation in this partridges varies from 300-1000mm and there is no water shortage, these problems as whole harm the Kurdistan region's climate and the authorities should consider solving some of them and start to take action. If not, the life of next-generation will is dangerous

Figure1. Map of the Kurdistan region of Iraq (KRI)

Study Sample

The populations studied were from farmer's rural villages in KRI and students of the College of Agriculture from the KRI. The study population was 400 forms (200 for students and 200 for farmers). The list of questionnaires used in three governorates (Dohuk, Erbil, and Sulaimani). The questionnaire was given to students at the Faculties of Agriculture, and also was given to farmers in the villages' around Erbil city Randomly selected students from agricultural colleges and farmers in the villages, 200 students and 200 farmers to give the final idea of the questionnaire Some of the questionnaires were translated into Kurdish to be easy to understand for farmers.Table1. Representing the sample size and the sample distribution as following:

Frequency distribution of the study sample

	f	%
students	200	50%
farmers	200	50%
Total	400	100%

Two collections of questionnaires were prepared during the study to gathering information and data from the participants. The total number was distributed as 400 questionnaires. One questionnaire was tailored filled from the student and the

other one is to the far total of 400 questionnaires have been filled out and sent back. 200 were for Agriculture, while another 200 were from a village.

Data Collection Tools

The data gathering method aims to determine and compare the background on environmental problems and the environmental awareness levels of the students in a college of agriculture and farmers in villages around Erbil city and the study tool in this study is classified into three parts. The first parts (personal information questions) including five questions concerning age, gender, area living, study level, no household) and the environmental background. That information is going to be used to identify demographical variability and if there is any relation between the demographical variability and the study aim.

The second part (study questions) includes (10) questions that identify the background information on environmental problems and questions of environmental attitude. The third section (environmental awareness) includes (22) questions that going to identify environmental awareness. While creating the measurement tool, opinions were obtained from experts who have been trained in Environmental Education, environmental awareness, English Grammar, agriculture extension, and Scientific Research proficiency. In this research, the tool for data gathering was used as personal information, background information on environmental problems and environmental awareness test.KRI was the sample area the questionnaire distribution system was through the one-on-one form of distribution. The explanation for this was to ensure clarity during the questionnaire administration which was circulated in October to the farmers and students who were still at university.

Data procedure

Two collections of questionnaires were prepared during the study to obtain the information and data from the participants. The total number of questionnaires was distributed as 400. One questionnaire was tailored filled from the student and the other one is to the farmer total of 400 questionnaires have been filled out and sent back. 200 were for Agriculture, while another 200 were from villagers
After the construction of the tool was completed, the pilot study was conducted with environmental education experts. There was no addition or removal to the instrument

questions after the pilot study was applied. Data were collected in a university environment and villages to provide a more effective response process for the participants. Data collected at the end of the 2019-2020 semesters.
Results are evaluated in two parts according to many research questions. The first part has 10 questions to identify the background knowledge on environmental issues that the participants' have. The second part has 22 questions that identify the environmental awareness the participants' have. Both parts questions have proved that can measure the participants' level.

Data Analysis

The Quantitative data methods were used to analyze data, once results were obtained, it organized and responses were coded by using numbers to show and reaction each various response, then SPSS program used for analyzing data, which included frequency, ANOVA, and t-test, descriptive statistics the data were tested for their reliability by Cranach's alpha reliability statistics this used to evaluate quantitative information to produce frequencies, percentages, means, and standard deviations.

Analysis of variance (ANOVA) is a technique of statistical analysis used to assess whether there are differences at a selected probability level between two or more groups of samples. In this research, ANOVA table was used to check if there is any difference in awareness level and background on environmental issues and level of environmental consciousness and attitude among respondents from Agriculture College and farmers in KRI. The researcher developed tables to compare the various coded. The researcher used SPSS software to analyze the data, which used to create explanatory graphs and figures.

CHAPTER IV

Findings and Discussion

Introduction

This chapter covers findings and discussion, results consist of figures, statistics and descriptive of two goals of research, these targets are the levels of environmental conservation and background knowledge on environmental issues of agriculture students and farmers in Kurdistan region Iraq. The findings were inferred and debates were made after every goal of the research to make a comparison between these groups. Additionally, the hypotheses were further checked by running ANOVA analysis of each goal of the study's targets.

Respondent Personal Information Analysis

The following sections cover the findings of questionnaire data analysis by using a statistical package of social analysis. Results represent the frequency distribution of participants' responses to the questionnaires; the results are shown in tables and graphs

Age Distribution of the Respondents

One of the variables chosen for this study is the age group as an essential factor in determining environmental awareness and knowledge of environmental issues for students of agricultural colleges and farmers. Accordingly, we considered the age difference one of the variables in our study. From the age frequency distribution, as shown in Figure 1, we found that the age group from 18 to 23 has the highest frequency distribution ratio (35.3%). Looking at Table 1, it can be seen that the model consists of students and farmers between the ages of 18-23 at 35.3%, 24-28 at 14.8% and 30-35 at 32.8%, 40-54 in 17.3%.

Table 1.

Distribution of respondent ages

Age	f	%
18-23	141	35.3
24-29	59	14.8
30-35	131	32.8
40-45	69	17.3
Total	100	100,0

We can see that the distribution of exemplary according to age is the highest between the ages 18-23.

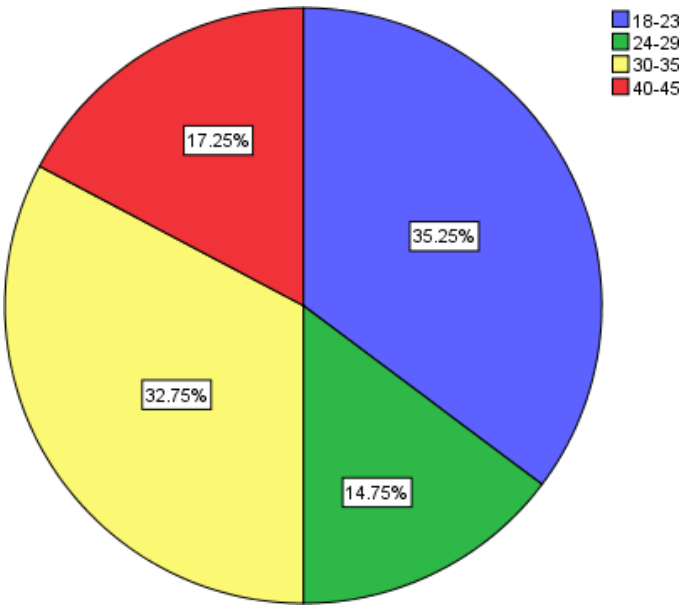

Figure 2. Age-frequency distribution of all respondents

As figure 1 shows the response distribution of exemplary according to age is the highest between the ages of 18-23 is 35.25%

Respondents Gender Distribution

Gender was one of the variables of my studies. Where we assumed in this study, there is a differential between sexes groups regarding their environmental understanding and backgrounds to environmental issues, given their academic level whether they are students or farmers living in cities or villages.

Table 2.

Distribution of respondents according to Gender

Gender	f	%
Male	228	57.0
Female	172	43.0
Total	400	100.0

The number of participants in the study as shown in table 2 is 400 people. 43% of the participants are female, while 57% are male. We can see that the ideal gender distribution is more male than female.

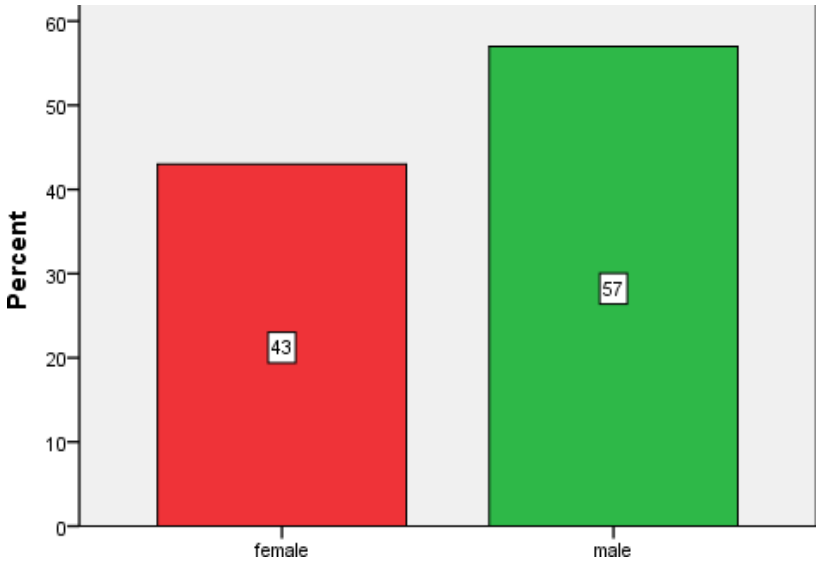

Figure 3. Gender distributions of the respondent

As shown in figure 3 the response of the farmers and students who participants in the answer of the questionnaire are most male 57%.

Distribution of the Respondents according to Living Area

Environmental awareness is closely related to environmental problems as well as environmental knowledge of living sites, where some areas that suffer from environmental degradation are suspected, while others are not Thus, this research aims to assess the understanding and awareness of farmers and students to the environment from the frequency of distribution; it is clear that most of the respondents were from semi-urban settlements located around the city of Erbil.

Table 3.

Distribution of respondents according to their Area of living

Area living	**f**	**%**
Urban	115	28.5
Semi-urban	166	41.5
Rural	119	30.0
Total	400	100.0

As shown in Table 3 the majority of the study participants are semi-urban, as 41.5% this is followed by 30% of the rural population and finally the urban population with 28.5%. Further analysis will clarify whether environmental awareness and knowledge of environmental issues programs can penetrate rural areas as there appear to be more participants in this study. The study's findings suggest that there is no significant impact on the level of environmental consciousness among farmers and students from the multiple divisions within an urban society. This suggests therefore that the position within the urban area and regions has little or no relationship to the degree of student knowledge.

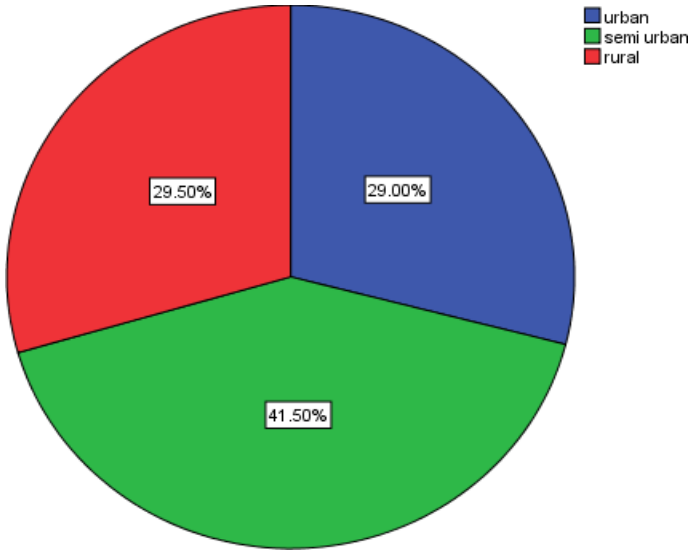

Figure 4. Distribution of respondents according to Residential area

Distribution of participants by household number person

In context background education and environmental awareness, the number of people in a household is important; table 4 indicates how the respondents are classified according to the number of the households.

Table 4.

Distribution of the respondents' according to household's number

household size	f	%
Live alone	22	5.5
2	33	8.3
3	81	20.3
More than 3	264	66.0
Total	400	100

From the data analysis in Table 4, it is clear that most of the respondents in this study are with a family of more than 3 percentage frequency of (N=264) 66%

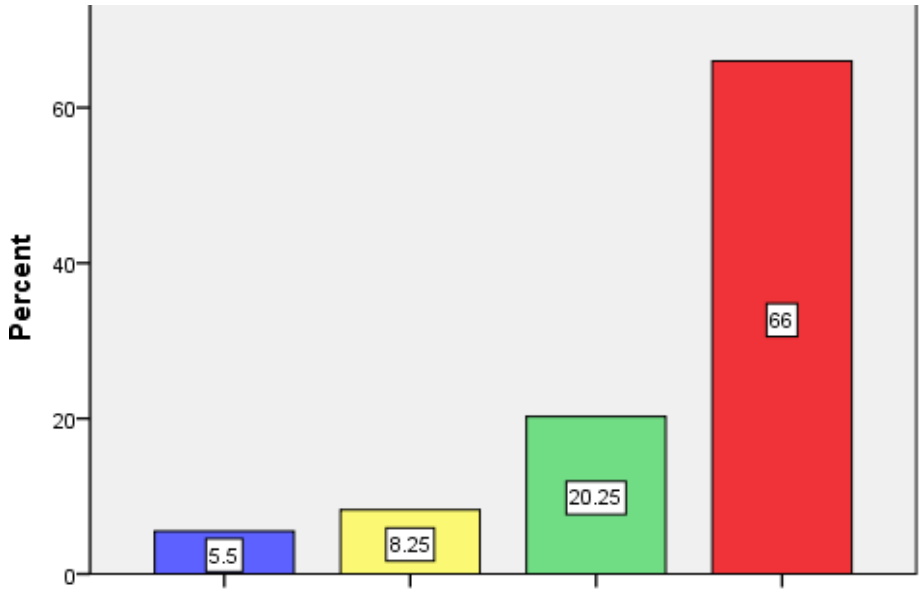

Figure 5. Distribution of respondents by Household individual number

Distribution of respondents according to' level of education

The frequency distribution of the participants in table 5 was a variable of my study according to their level of education.

Table 5.

Distribution of respondents by educational standard

Education level	f	%
High school	90	22.5
College	228	57.0
No, read and write	82	20.5
Total	400	100.0

Figure 6 shows the range of whole respondents by histogram the frequency. It is essential to identify whether there is a correlation between background knowledge of environmental issues and environmental awareness level on education. The percentage distribution of frequencies as shown in table 5 indicates that university students have higher level percentage frequency distribution (57 %). It shows that

most of the participants have high education and only (20.5 %) no education.

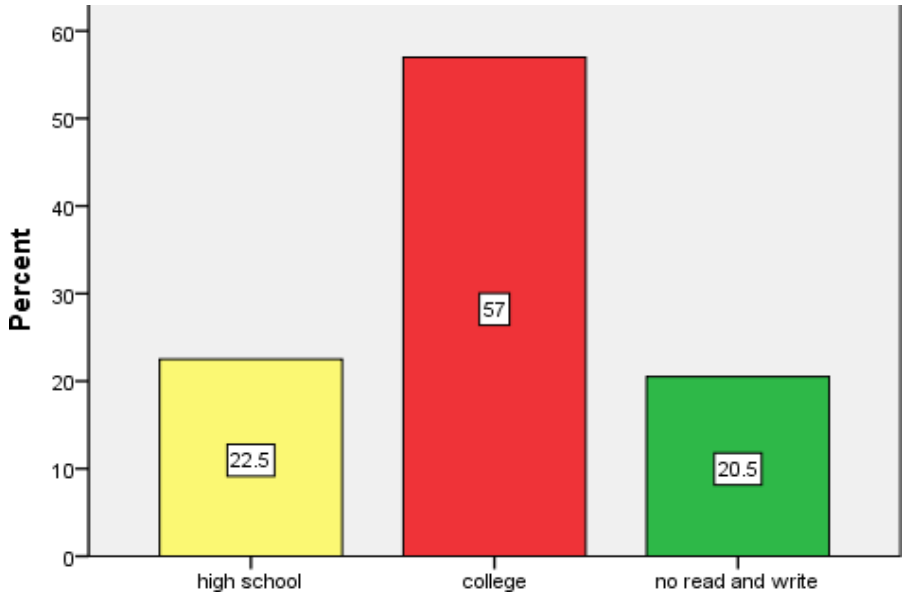

Figure 6. Classification of the participants according to education level in the whole population

The following table shows the statistical distribution of personal information of respondents:

Table 6.

Descriptive Statistics of personal information of participants

	N	Min	Max	Mean	Std.Deviation
Age	400	1	4	2.32	1.127
Gender	400	1	2	1.57	.496
Area	400	1	3	2.00	.766
Household	400	1	4	3.47	.864
Education	400	1	3	1.98	.656
Valid N(listwise)	400				

Respondents to questionnaire from the agriculture student's and farmers about background knowledge on environmental issues

The participants answered and returned a total of (400) questionnaires from the surveys returned, 200 for Agriculture college students consisting of 50% of the

total respondents, while 200 for farmers around Erbil, consisting of 50% of the study population. It was noticed from the findings that more men respondents 57% more compared with women 43%.

Table 7.

Respondents to questions by students and farmers about background knowledge on environmental issues

Question	Level	Students frequency	%	Farmers frequency	%
1.Change in agricultural Productivity is a result of an environmental problem	Agree	81	40.5	95	47.5
	Strongly Agree	31	15.5	35	16.5
	Partly Agree	46	23.0	33	16.5
	Disagree	19	9.5	19	9.5
	Strongly Disagree	23	11.5	20	10.0
2. One of the environmental problems is climate change	Agree	94	47.0	90	45.0
	Strongly Agree	51	25.5	52	26.0
	Partly Agree	27	13.5	33	16.5
	Disagree	19	9.5	13	6.5
	Strongly Disagree	9	4.5	12	6.0
3. Soil erosion is one of the environmental issues	Agree	91	45.5	85	42.5
	Strongly Agree	31	15.5	26	13.0
	Partly Agree	47	23.5	60	30.0
	Disagree	22	11.0	19	9.5
	Strongly Disagree	9	4.5	10	5.0
4. One of the environmental challenges is water pollution	Agree	62	31.0	71	35.0
	Strongly Agree	74	37.0	51	25.5
	Partly Agree	42	21.0	50	25.0
	Disagree	12	6.0	24	12.0
	Strongly Disagree	10	5.0	4	2.0
5. Industrial discharge is one of the	Agree	59	29.5	69	34.5
	Strongly Agree	47	23.5	56	28.0
	Partly Agree	59	29.5	52	26.0

Table 7. Continued

environmental issues	Disagree	19	9.5	16	8.0
	Strongly Disagree	16	8.0	7	3.5
	Agree	78	39.0	83	41.5
	Strongly Agree	59	29.5	44	22.0
6. Air pollution is one of the environmental problems	Partly Agree	40	20.0	50	25.0
	Disagree	15	7.5	15	7.5
	Strongly Disagree	8	4.0	8	4.0
	Agree	56	28.0	57	28.5
	Strongly Agree	26	13.0	38	19.0
7. Poor agriculture practices is an environmental issue	Partly Agree	56	28.0	57	28.5
	Disagree	46.16	23.0	30	15.0
	Strongly Disagree		8.0	18	9.0
	Agree	73	36.5	71	35.5
	Strongly Agree	48	24.0	54	27.0
8. Poor disposal of solid waste is an environmental issue	Partly Agree	41	20.5	47	23.5
	Disagree	29	14.5	17	8.5
	Strongly Disagree	9	4.5	11	5.5
	Agree	60	30.0	67	33.5
	Strongly Agree	77	38.0	56	28.0
9. Deforestation is an environmental issue	Partly Agree	34	17.0	47	23.5
	Disagree	18	9.0	22	11.0
	Strongly Disagree	11	5.5	8	4.0
	Agree	51	25.5	59	29.5
	Strongly Agree	56	28.0	57	28.5
10. Lack of sewage system is an environmental issue	Partly Agree	62	31.0	60	30.0
	Disagree	20	10.0	10	5.0
	Strongly Disagree	11	5.5	14	7.0

Table 7 shows that there is a positive relationship in answering about background knowledge on environmental issues between farmers and students taking into consideration the simple majority on the environmental awareness-raising concepts trend in their Kurdistan region of Iraq, The study findings indicate that students and farmers are very well knowledge of environmental issues such as pollution, soil degradation, and deforestation and lack of sewage system and water contamination. A majority of farmers and Agriculture College students stated that they have a good idea of these environmental principles although It was also noticed that some of farmers and agriculture college students have no idea or little knowledge of different terms and conditions since that environmental concerns are emergent and complex, the results of this study imply that Agriculture College students and farmers by using agriculture extension are well prepared trained in the future to address current environmental challenges.

Background knowledge of Environmental issues

The second aim of the work was to provide students and farmers in the Kurdistan region of Iraq with an environmental background, it was found, in general, that the attitude of farmers and agriculture students towards environment is positive. The responses collected indicated a good attitude in the majority of farmers and students to environmental education. Farmers and students took a perfectly appropriate stand on practical awareness in the area of environmental issues, However, the study also revealed that students' behavior towards taking assume responsibility when coping with environmental problems was in preserving the environment. The results show that the Calculation of an independent T-test showed that there is no difference in background knowledge of farmers and students about environmental problems in Kurdistan Region of Iraq.

As we know some environmental issues are directly related to loss of life, and the information can be made publicly available through the media. Because knowledge of serious environmental issues makes people able to protect them from harm and care more about the environment. Interviews on how to better control environmental degradation can be achieved through television and radio, in particular, through media channels.

The broadcast can explain the factors that cause environmental degradation and take appropriate measures about this effect to avoid its spread. Result of the

descriptive statistical analysis revealed that a high percentage of the participants to agree/strongly agree, on the background knowledge on environmental issues and environmental awareness exploitation in Kurdistan region Iraq, while a slight percentage of the participants accepted to disagree and strongly disagree (See the details in Table 7).

In general, agricultural students have a favorable view of the existing methods of learning in environmental education and they view the teaching method in environmental education as effective, however, some participants were not completely satisfied with the extension system and there is a lack of quality about an agricultural extension.

The local government in this region is opening many agricultural offices to provide general environmental and agricultural guidance and advice to farmers and people in environmental fields, which will help more farmers to understand agricultural environmental issues and increase their awareness and environmental culture. Participants in this study indicated a great value to farmers' views on opening agricultural offices and implementing a proactive approach to promoting agricultural and environmental extension and sustainable practices in the form of media events and enhancing extension and acceptance services. This would also provide information exchange and logistics services.

Frequency distribution of response to questions by students and farmers about environmental awareness test

EE has a great deal to do with clarifying environment concepts, It is, therefore, necessary that farmers and agriculture students are being conscious and able to explain environmental awareness. In this segment, participants were asked to indicate to what level.

They were aware of the environmental awareness test. The standard has been set at five levels, Agree, Strongly Agree, Partly Agree, Disagree, and Strongly Disagree, indicating that the effects of the term environment have been shown in table 8.

Table 8.

Students and farmer's frequency level of environmental awareness test

Questions	Level	Students frequency	%	Farmers frequency	%
1. Extermination of plants and extinction of animals is harmful to humankind	Agree	52	26.0	58	29.0
	Strongly Agree	99	49.5	94	47.0
	Partly Agree				
	Disagree	22	11.0	27	13.5
		9	4.5	7	3.5
	Strongly Disagree	18	9.0	14	7.0
2. Polluted rivers and oceans have no impact on life	Agree	4	2.0	13	6.5
	Strongly Agree	10	5.0	7	3.5
	Partly Agree	20	10.0	16	8.0
	Disagree	75	37.5	75	37.5
	Strongly Disagree	91	45.5	89	44.5
3. I am worried to see the paper and plastic waste in the garbage instead of recycling it	Agree	89	44.5	84	42.0
	Strongly Agree	62	31.0	42	21.0
	Partly Agree				
	Disagree	33	16.5	48	24.0
		9	4.5	13	6.5
	Strongly Disagree	7	3.5	13	6.5
4. The air I breathe is quite polluted	Agree	57	28.5	84	42.0
	Strongly Agree	25	12.5	48	24.0
	Partly Agree	56	28.0	37	18.5
	Disagree	48	24.0	18	9.0
	Strongly Disagree	14	7.0	13	6.5
5. Living things will disappear in the future When nature begins to degradation	Agree	69	34.5	71	35.5
	Strongly Agree	45	22.5	50	25.0
	Partly Agree	50	25.0	59	29.5
	Disagree	25	12.5	13	6.5
	Strongly Disagree	11	5.5	7	3.5
6. We may not have drinkable water in the future	Agree	52	26.0	70	35.0
	Strongly Agree	29	14.5	47	23.5
	Partly Agree	66	33.0	50	25.0
	Disagree	37	18.5	17	8.5
	Strongly Disagree	16	8.0	16	8.0
7. it is the politicians are responsible for increasing waste garbage around the country	Agree	59	29.5	72	36.0
	Strongly Agree	43	21.5	54	27.0
	Partly Agree				
	Disagree	49	24.5	41	20.5
		29	14.5	21	10.5
	Strongly Disagree	20	10.0	12	6.0
8. Most people will die or become sick due to air pollution in the future	Agree	73	35.5	65	32.4
	Strongly Agree	63	31.5	69	34.5
	Partly Agree	43	21.5	50	25.0
	Disagree	15	7.5	13	6.5
	Strongly Disagree	6	3.0	3	1.5

Table 8. Continued

	Agree	57	28.5	85	42.5
9. I want to learn how to preserve the clean water, rivers, and streams	Strongly Agree	84	42.0	65	32.5
	Partly Agree	36	18.0	37	18.5
	Disagree	14	7.0	11	5.5
	Strongly Disagree	9	4.5	2	1.0
	Agree	67	33.5	79	39.5
10. There aren't sufficient numbers of organizations or institutions to protect the environment and take steps necessary	Strongly Agree Partly Agree Disagree	40	20.0	53	26.5
	Strongly Disagree	47	23.5	41	20.5
		32	16.0	15	7.5
		14	7.0	12	6.0
	Agree	68	34.5	54	27.0
11. I turn off running water tamp when I don't need it at home and workplace	Strongly Agree	72	36.0	92	46.0
	Partly Agree	43	21.5	36	18.0
	Disagree	11	5.5	15	7.5
	Strongly Disagree	6	3.0	3	1.5
	Agree	76	38.0	70	35.0
12. I'd like to contribute protect the ocean, rivers, and streams from those who want it to be polluted	Strongly Agree Partly Agree	57	28.5	61	30.0
	Disagree	39	19.5	49	24.5
		21	10.5	16	8.0
	Strongly Disagree	7	3.5	4	2.0
	Agree	84	42.5	66	33.0
13. I'm a volunteer to spare some of my free time to protect plants and animals.	Strongly Agree Partly Agree	41	20.5	40	20.0
	Disagree	49	24.5	58	29.0
		19	9.5	28	14.0
	Strongly Disagree	7	3.5	8	4.0
	Agree	69	34.5	69	34.5
15. I would like to assist in the purification of a polluted ecosystem (dams, rivers, forest, and ocean)	Strongly Agree Partly Agree Disagree	56	28.0	47	23.5
		51	25.5	56	28.0
		16	8.0	18	9.0
	Strongly Disagree	8	4.0	10	5.0

Table 8. Continued

	Agree	69	34.5	58	29.0
16. To avoid polluting the environment I wouldn't drive faster than(100KMH)	Strongly Agree	45	22.5	34	17.0
	Partly Agree Disagree	49	24.5	64	32.0
		18	9.0	28	14.0
	Strongly Disagree	19	9.5	16	8.0
	Agree	65	32.5	58	29.0
17. I'm ready to purchase school and home materials made of recycled waste	Strongly Agree	43	21.5	44	22.0
	Partly Agree Disagree	38	19.0	44	22.0
		34	17.0	38	19.0
	Strongly Disagree	20	10.0	16	8.0
	Agree	55	27.5	57	28.5
18. I would use artificial fertilizer if I had gardened in my garden house	Strongly Agree Partly Agree	26	13.0	29	14.5
	Disagree	61	30.5	69	34.5
		34	17.0	34	17.0
	Strongly Disagree	24	12.0	11	5.5
	Agree	56	28.0	42	21.0
19. I prefer to spend time at recreational places and parks rather than visiting a crowded place	Strongly Agree Partly Agree	42	21.0	18	9.0
	Disagree	48	24.0	52	26.0
		34	17.0	61	30.0
	Strongly Disagree	20	10.0	27	13.5
	Agree	64	32.0	47	23.5
20. I think the recycling process has positive effects on the environment	Strongly Agree	59	29.5	40	20.0
	Partly Agree Disagree	45	22.5	73	36.0
		18	9.0	30	15.0
	Strongly Disagree	14	7.0	10	5.0

Table 8. Continued

	Agree	64	32.0	45	22.5
21. I'm trying to use my special paper bag to carry things when I'm shopping rather than a plastic bag	Strongly Agree	41	20.5	41	20.5
	Partly Agree	40	20.0	58	29.0
	Disagree	37	18.5	46	23.0
	Strongly Disagree	18	9.0	10	5.0
	Agree	51	25.5	46	23.0
22. I will use solar electricity instead of gasoline generator in house or workplace or government institutions	Strongly Agree	42	21.0	50	25.0
	Partly Agree	46	23.0	46	23.0
	Disagree	36	18.0	41	20.5
	Strongly Disagree	25	12.5	17	8.5

The general finding from table 8 suggests that there has been a significant relationship between the level of understanding and awareness in definition of ecosystem among farmers and agriculture students in Kurdistan Region Iraq , the participation in Q1 have a clear idea of the word environment Agree (students N=124,farmers N=152) and Partly agree (students N =22, farmer N=28) and Disagree (students N=27, farmers N=20) and answer about Q2 Agree(student N=14,farmersN=20) Partly agree (students N=20, farmer=16) Disagree (student n=166, farmer=164) and Q3 Agree (student n=151,farmer=126) Partly agree (student n=33,farmerN=48) Disagree(student N=16,farmer N=26) and Q4 Agree(student N=82,farmer N=132) Partly agree (student n=56,farmer N=37) , Disagree (student n=62,farmer N=31) ,

Q5 Agree(student N=114,farmer N=121) Partly agree (student N=50,farmer N=59), Disagree (student N =36,farmer N=20)And Q6 Agree (student N=81, farmer N=117) and Partly agree (student N =66,farmer N=50) and Disagree (student N=81,farmer N=33), Q7 Agree(student N=102,farmer N=126) Partly agree (student n=49,farmer n=41) Disagree (student n=49,farmer n=33) and Q8 Agree (student N=136, farmer N=134) Partly agree (N=43,farmer N=50) Disagree(student n=21,farmer N=16)and Q9 Agree(student N=141,farmer N=150) Partly agree (student N=36, farmer N=37) , Disagree (student N=23,farmer N=13) , Q10 Agree(student n=107,farmer =132) Partly agree (student n=47,farmer N=41), Disagree (student n =46, farmer n=27),

Q11 Agree (student n=140,farmer n=146) and Partly agree (student n =43,farmer n=36) and Disagree (student n=17, farmer N=17), Q12 Agree(student N=133, farmer N= 131)Partly agree (student n=39,farmer n=49) Disagree (student

n=26,farmer n=20) and Q13 Agree (student N=125, farmer N=106) Partly agree (student N=49,farmer N=58) Disagree(student N=26, farmer N=36)and Q14 Agree(student N=98, farmer N= 104) Partly agree (student N=68, farmer N=70) , Disagree (student N=34, farmer N=26) , Q15 Agree(student N=125, farmer N=116) Partly agree (student n=51, farmer N=56), Disagree (student n =23, farmer N=28), Q16 Agree (student N=114, farmer N=92) and Partly agree (student N =49, farmer N=64) and Disagree (student N=37, farmer N=44), Q17 Agree(student n=108, farmer N =102)partly agree (student N=38, farmer N =44) Disagree (student N=54, farmer n=54) and Q18 Agree (student N=81, farmer n=86) Partly agree (student N=61, farmer n=69) Disagree(student N=58, farmer n=45)and Q19 Agree(student N=98, farmer N=60) Partly agree (student N=48, farmer N=52) , Disagree (student n=54, farmer n=88)and Q20 Agree(student N=123, farmer N=87) Partly agree (student=45,farmerN=73)Disagree(student N=32, farmer N=46)and Q21Agree(students N=105, farmer n=8), Partly agree(student N=40, NN=58),Disagree(students N=55, farmer N=56) and Q22 Agree (student N= 93, N, N=96) and Partly agree(students N= 44, farmer N=46) Disagree(students N=58, NN=61) totally most students and farmers have good opinions and information about environmental awareness.

ANOVA of the level of Agriculture College students and farmers about background knowledge on environmental issues

The students and farmers in the Kurdistan Region Iraq community statistics analyze and create a connection in terms of background knowledge on environmental issues, and one way was the measurement of ANOVA, which is shown in Table 9.

Table 9.

ANOVA table determine level of students Agriculture College and farmers about background knowledge on environmental issues

	SS	df	MS	F	Sig.
Between Groups	1.440	1	1.440	1.024	.312
Q1 Within Groups	559.560	398	1.406		
Total	561.000	399			
Between Groups	.010	1	.010	.009	.926
Q2 Within Groups	462.350	398	1.162		
Total	462.360	399			
Between Groups	.562	1	.562	.547	.460
Q3 Within Groups	409.135	398	1.028		
Total	409.698	399			
Between Groups	3.423	1	3.423	2.916	.088
Q4 Within Groups	467.175	398	1.174		
Total	470.597	399			
Between Groups	6.003	1	6.003	4.769	.030
Q5 Within Groups	500.975	398	1.259		
Total	506.977	399			
Between Groups	1.563	1	1.563	1.437	.231
Q6 Within Groups	432.875	398	1.088		
Total	434.438	399			
Between Groups	3.423	1	3.423	2.459	.118
Q7 Within Groups	554.055	398	1.392		
Total	557.477	399			
Between Groups	.810	1	.810	.638	.425
Within Groups	505.580	398	1.270		
Q8 Total	506.390	399			
Between Groups	2.403	1	2.403	1.848	.175
Q9 Within Groups	517.375	398	1.300		
Total	519.778	399			
Between Groups	.490	1	.490	.370	.544
Q10 Within Groups	527.670	398	1.326		
Total	528.160	399			

Table 9 represents the results achieved, with different environmental issues reporting various P values using a 95% of level of confidence in background knowledge on environmental issues; the P-value of (Q1- Q2-Q3-Q4-Q6-Q7-Q8-Q9-Q10) was obtained from Questionnaire about background knowledge on environmental issues between students and farmers. It identified that P values obtained were also greater than 0.05, Thereby, The findings obtained in the research thus shows that there are no significant changes in the level of background knowledge on environmental issues between students and N this means that there is a positive relationship of background on environmental issues amongst and agriculture college students. The findings of Q5 P value= 0.30 is less than 0.05 indicate that have a substantial difference between students and farmers in knowledge about environmental issues. It was recognized from the above results that there is a general connection in the understanding of environmental problems between farmers and students.

It was also noted that students of the Faculty of Agriculture have a great awareness of environmental problems. These results are consistent with and agreed with studies of (Harun et al, 2011) on environmental attitude and knowledge of students in Sabah, Arguably environment problems and challenges have found a suitable place in the curricula of the Faculty of Agriculture. Moreover, environmental material teachers are well trained in these issues and concerns. The findings of this research show that students at the Faculty of Agriculture have a high degree of knowledge and can effectively tackle existing environmental challenges.

Level of students Agriculture College and farmers about environmental awareness test

To study and compare the importance of the relationship between students and farmers in Iraq's Kurdistan region about environmental awareness and background knowledge on environmental conservation, by using group statistical data and one way ANOVA table method have been used and the findings shown in table 10 are present.

Table 10.

ANOVA table determine level of Agriculture College students and farmers about environmental awareness test

		SS	df	MS	F	Sig.
Q1C	Between Groups	3.422	1	3.422	.958	.328
	Within Group	1422.055	398	3.573		
	Total	1425.478	399			
Q2C	Between Groups	.123	1	.123	.114	.736
	Within Groups	428.175	398	1.076		
	Total	428.298	399			
Q3C	Between Groups	9.303	1	9.303	8.665	.003
	Within Groups	427.295	398	1.074		
	Total	436.598	399			
Q4C	Between Groups	27.563	1	27.563	21.522	.000
	Within Groups	509.715	398	1.281		
	Total	537.277	399			
Q5C	Between Groups	2.560	1	2.560	2.198	.139
	Within Groups	463.600	398	1.165		
	Total	466.160	399			
Q6C	Between Groups	13.690	1	13.690	10.214	.002
	Within Groups	533.470	398	1.340		
	Total	547.160	399			
Q7C	Between Groups	8.702	1	8.702	6.003	.015
	Within Groups	576.995	398	1.450		
	Total	585.698	399			
Q8C	Between Groups	2.103	1	2.103	.399	.528
	Within Groups	2096.875	398	5.269		
	Total	2098.978	399			
Q9C	Between Groups	.040	1	.040	.038	.846
	Within Groups	423.920	398	1.065		
	Total	423.960	399			
Q10C	Between Groups	8.702	1	8.702	6.603	.011
	Within Groups	524.575	398	1.318		
	Total	533.278	399			
Q11C	Between Groups	2.560	1	2.560	2.396	.122
	Within Groups	425.190	398	1.068		
	Total	427.750	399			

Table 10. Continued

Q12C	Between Groups	.422	1	.422	.384	.536
	Within Groups	437.755	398	1.100		
	Total	438.178	399			
Q13C	Between Groups	2.403	1	2.403	2.171	.141
	Within Groups	440.535	398	1.107		
	Total	442.938	399			
Q14C	Between Groups	.160	1	.160	.139	.709
	Within Groups	457.680	398	1.150		
	Total	457.840	399			
Q15C	Between Groups	1.440	1	1.440	1.228	.269
	Within Groups	466.870	398	1.173		
	Total	468.310	399			
Q16C	Between Groups	3.423	1	3.423	2.458	.118
	Within Groups	554.175	398	1.392		
	Total	557.598	399			
Q17C	Between Groups	.002	1	.002	.002	.968
	Within Groups	628.475	398	1.579		
	Total	628.478	399			
Q18C	Between Groups	2.890	1	2.890	2.214	.138
	Within Groups	519.470	398	1.305		
	Total	522.360	399			
Q19C	Between Groups	26.523	1	26.523	17.820	.000
	Within Groups	592.375	398	1.488		
	Total	618.897	399			
Q20C	Between Groups	8.703	1	8.703	6.549	.011
	Within Groups	528.875	398	1.329		
	Total	537.577	399			
Q21C	Between Groups	.360	1	.360	.244	.621
	Within Groups	586.750	398	1.474		
	Total	587.110	399			
Q22C	Between Groups	1.210	1	1.210	.716	.398
	Within Groups	672.790	398	1.690		
	Total	674.000	399			

Table 10 the findings of the different environmental principles included various levels of P values by using a 95% confidence level in an environmental awareness P-value of Q1= .328 and Q2 =.736, Q5=.139, Q8=.528, and Q9=.846, Q11=.122, Q12=.536, Q13=.141 and Q14=.709, Q15=269, Q16 =.118, and Q17=.138, Q18= .138, Q21=621 and Q22=398 variety of environmental values were derived from the collected tests, in the other questions, It was also found that the P values obtained are greater than 0.05. It was found in some questions that there is a high P-value in Q17=.968 and the least P-value in Q4 and Q19 =.OOO .and results obtained from The P-value of Q3=.003 and Q4= .000, Q6= .002 and Q10=.011, Q20=.011 in this question the P-value is less than 0.05 which means have different significant between respondents in answer the results of the questions obtained in the research thus indicates that there is no significant difference in the level of environmental conservation of farmers and agriculture students in Kurdistan region Iraq. This suggests that there is a good relationship of environmental consciousness amongst agriculture college students and farmers considering their position of settlement in an urban divide and level of education.

Table 11.

Statistics on questions reliability

	Scale Mean if Item Deleted	**Scale Variance if Item Deleted**	**Corrected Item-Total Correlation**	**Cronbach's Alpha if Item Deleted**
Age	130.9128	181.544	.134	.745
Gender	131.6628	186.772	-.009	.747
Area	131.2278	184.296	.097	.745
Household	129.7652	183.153	.128	.744
Education	131.2528	187.149	-.038	.749
Q1	129.7828	178.281	.228	.740
Q2	129.4428	179.309	.223	.741
Q3	129.7052	180.835	.185	.742
Q4	129.4352	176.025	.336	.735
Q5	129.6003	180.077	.183	.742
Q6	129.4703	177.158	.311	.737
Q7	129.9902	180.370	.161	.744
Q8	129.5777	176.293	.312	.736

Table 11. Continued

Q9	129.4403	178.133	.245	.739
Q10	129.5928	178.240	.239	.740
Q1C	129.1152	173.924	.188	.746
Q2C	131.3803	187.094	-.045	.752
Q3C	129.4352	178.250	.270	.738
Q4C	129.8153	177.821	.250	.739
Q5C	129.5928	176.465	.322	.736
Q6C	129.8428	177.141	.269	.738
Q7C	129.7052	178.255	.222	.741
Q8C	129.2402	170.965	.178	.751
Q9C	129.2427	175.319	.385	.733
Q10C	129.6502	177.071	.276	.738
Q11C	129.2077	176.798	.328	.736
Q12C	129.4252	176.665	.328	.736
Q13C	129.6452	177.749	.286	.738
Q14C	129.7528	178.500	.253	.739
Q15C	129.5477	175.658	.350	.735
Q16C	129.8102	180.101	.170	.743
Q17C	129.8503	175.091	.308	.736
Q18C	130.0227	178.883	.219	.741
Q19C	130.1603	182.659	.080	.748
Q20C	129.7002	176.913	.280	.738
Q21C	129.8977	176.643	.272	.738
Q22C	129.9327	178.591	.190	.742

Reliability Statistic

The reliability and validity have been determined to employ quantitative analyzes, but not for cases where the data were evaluated since opinions and answers from respondents could change at any one time. The quality of the data was expressed by using the validity and reliability contribution of the supervisor and also professionals in environmental education studies have strengthened the validation of the questionnaires.

Cronbach alpha is a statistical expression that indicates scale proximity. Generally accepted is a reliability coefficient of <0.07>. As seen in table 13, the Cronbach alpha reliability is .717Therefore, the study scale is categorically reliable.

Table 12.

Cronbach Test for Alpha Reliability

Cronbach's Alpha	N of Elements
.717	38

A total of 38 elements representing scales were produced to use in the present analysis, as shown in Table 12. The measures are based on a detailed review of the related theoretical and scientific literature, which demonstrates the validity of its content. The collection of items and assessment of their reliability and validity was covered in this part. In this analysis, the reliability of scales was measured dependent on the internal accuracy of the items in each scale by using Cronbach's alpha factor.

Level of farmers and students about background knowledge on environmental issues

In order to evaluate the hypothesis with p=0.05, the independent t-test method was used. Table 12 shows the results. However, the t-test results showed that it was present.

Table 13.

Independent T-test about background knowledge on environmental issues for farmers and students

	Levine's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. 2-tailed	Mean difference	Std.Error difference	95%confidence Interval of the difference	
								Lower	Upper
Students Equal variances assumed	.463	.497	-.313	398	.754	-.01600	.05107	-.11641	.08441
Farmers Equal variances not assumed			-.313	395.366	.754	-.01600	.05107	-.11641	.08441

Table 13 indicates no statistically important difference (p = .497 > 0.05) from the findings obtained between agriculture college students and farmers with detailed awareness about environmental issues, It is clear that farmers and students have different levels of background knowledge on environmental issues related to various environmental problems. Registered various P values by using a level 95% confidence level in knowledge on environmental issues the P-value is .497 is greater than 0.05 which means no difference between opinions farmers and students about background knowledge on environmental issues.

Farmers and student's environmental awareness test

Table 14 shows the independent sample t-test for environmental awareness for both students and farmers.

Table 14.

T-test of environmental awareness of students and Farmers

	Levin's Test for Equality of Variance		t-test for Equality of Means						
	F	Sig.	T	df	Sig. (2 tailed)	Mean difference	Std.Error difference	95%C0nfidence interval of the difference Lower	Upper
Student	Equal variances assumed	.109	.742	-.524	398	.601	-.02205	.04209	-.10479	.06070
Farmers	Equal variances not assumed			-.524	397.982	.601	-.02205	.04209	-.10479	.06070

The results obtained in Table 14, it is noted that the participants have a significant understanding of the environmental problems, their sources and their implications. It was noticed that P-value is .524 is higher than 0.05 which indicates there are no significant differences between farmers and students about environmental awareness test in the Kurdistan region Iraq therefore, there is have a good relationship considering the qualified majority between farmers and students

based on knowledge of environmental challenges through these environmental factors are strongly related in the wider sense of environmental protection, it is unlikely for students and farmers to vary in the degree of awareness and information on environmental issues this poses a question of students' and farmers' understanding of the principle of interrelatedness in environmental conservation. In a general observation, there is a relationship in the trend on the level of awareness this means that level of awareness of environmental problems and concepts is not significantly affected by factors arising from the different divides of an urban region.

Chapter's Summary

This chapter covered the findings and discussion of the research. This was done by looking at the goals of the research, firstly, background knowledge of environmental issues and second, environmental awareness testing between students of the Faculty of Agriculture and farmers of the Erbil plain, it was found that there is no significant difference in the degree of basic knowledge and environmental issues for students and farmers in general in the Kurdistan region of Iraq except in Some questions may be strange to farmers. However, it was noted that farmers were less conscious of current environmental concepts and challenges.

CHAPTER V

Conclusion and Recommendation

Introduction

This study contains conclusion of my research on the environmental awareness and background knowledge of environmental issues of agriculture college students and farmers in the Kurdistan region of Iraq based on the mentioned goals, this section also addresses main observations, advice, and suggestions.

Conclusion

We concluded the following from the findings according to each of the study objectives.

Environmental Awareness

The first aim of this research was to detect the degree of environmental understanding among agriculture college students and farmers in Kurdistan region of Iraq. The study findings demonstrated that there is no significantly different in the degree of environmental consciousness between these two groups, According to the P-values obtained from the ANOVA analysis It can be said, there is no substantial difference between students from the Faculty of Agriculture and farmers in the extent of environmental understanding, One may assume that students and farmers from various parts of a semi-urban area are not at all aware of the environmental status of the site. The survey also showed that perception to environmental varies from one environmental principle to the next and one is a concern for the other; it found that agriculture college students have a very high degree of awareness of existing and emerging environmental concerns.

The study also revealed that students and farmers have about the same level of awareness relevant to environmental conditions. The findings highlighted several factors that need determined effort by all to create more awareness among society regarding

Environmental awareness and knowledge in environmental issues related to agriculture in the Kurdistan region of Iraq.

The media will have a major role to play in the dissemination of awareness and environmental understanding. These include coordinated efforts and rules between government institutions and voluntary organizations in this field and expand it to educational institutions at all levels. Environmental consciousness is becoming an important means by sustainability, renewable energy, law and regulations, policy, planning, and changing behavior for achieving the environmental objectives. The main goal of environmental consciousness has always been to understand how humans live harmoniously by tools to interpret such data with pie charts.

Recommendations

After getting the results of the study, I want to make the following recommendations within the framework of each of the aims of the study; these recommendations may increase the environmental awareness and environmental background knowledge among the Kurdish community.

Environmental Consciousness

Through this survey, many environmental concepts and problems described in the questionnaires were defined by agriculture college students and farmers and, it became clear that they are at an appropriate level in terms of understanding of the current and developing environmental issues. the fact that environment and environmental issues are complex and emerging is widely recognized, as a result, the material and information that learners interact with should be updated periodically, as there is a possibility that participants may not associate with similar issues in the field of the environment, After ensuring that students in the College of Agriculture are aware of new and existing environmental challenges and principles, it is suggested that the curricula in the faculties of agriculture be updated in particular with topics that address environmental education content for evolving environmental concepts that have problems, This will increase environmental education more important in achieving its goals, especially agricultural extension agents.

I recommend that students and extension workers communicate with leading environmental agencies, for example, semi-governmental and research bodies that

will help increase awareness of students and extension workers about the environment and environmental issues. It is recommended to provide all kinds of support by international organizations and to communicate between these systems with faculties of agriculture to prepare efficient cadres for environmental education. The media should be encouraged to produce educational programs on environmental issues and agricultural extension work and publish them. Environmental education should be part of national education and should be considered as part of formal and informal education at all levels concerning a lifelong learning process.

Background information on Environmental problems

For environmental education goals require more challenging and complicated educational outcomes, this should indicate ensure that participants are not only aware of environmental problems, but also about correct attitudes towards environmental issues This needs to increase understanding about environmental risks and an appreciation of environmental values, stimulate interest in environmental issues, commit to protecting the environment in practice and take necessary measures to conserve natural resources. In the region, teachers must encourage using modern teaching methods including archeology visits, the establishment of agricultural activities, academic tours and community work. All of which would expose peoples to the realities of environmental issues and environmental concerns, as well as recommending lessons provided to students of the university and should be of sufficient quantity and quality about environmental education. University students should be provided with positive attitudes towards the environment and environmental problems, and it will be useful to provide newspapers, magazines and other publications on the environment in university libraries and clubs.

As the number of student’s visits to nature increases, the level of environmental background knowledge and environmental behavior of learner’s increases, to increase students' environmental awareness and attitudes, hiking trails in nature should be increased. The research recommends increasing interest in agricultural extension and teaching due to its importance in increasing environmental awareness among farmers, as well as finding ways to enhance communication and cooperation between agricultural extension workers and farmers.

The research also recommends the necessity of activating communication

channels and enhancing cooperation between agricultural researchers and extension centers between them and the farms of the other side to determine the most appropriate way to combat agricultural and environmental pests and provide appropriate conditions for achieving the best means for protecting the environment and preserving it as well as motivating teachers, and teachers extension workers in their educational work And indicative, it is necessary to appreciate their work and help them to develop technical competencies by providing the necessary technical support.

The research also found the need to continue for continuous improvement of farmers' understanding of environmental protection in Kurdistan in Iraq regarding environmental protection when using lands, fertilizers, and pest control materials to protect environmental resources, as well as environmental degradation and the problems caused by them.

Suggestions for Further study

There is still need for further studies on the participating students and farmers on background knowledge on environmental problems and environmental awareness and attitude of students of all levels of their study to an environment in Kurdistan region Iraq The increased knowledge of environmental concerns and environmental consciousness contributes to an improved attitude and thus a shift to the environmental behavior. I suggest the research on the following areas:

- Researching the levels of environmental consciousness for students at the various educational levels in order to increase their attitude towards their involvement in environmental activities, this need to introduce courses on environment and environmental issues.
- Study the connections between environmental training, environmental conservation level, and environmental history, agriculture extension and involvement of students and farmers in environmental practices.
- Study the role of agricultural extension in environmental education and the relation between agriculture and the environment.

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APPENDICES

Appendix 1. Ethics Approval Form

YAKIN DOĞU ÜNİVERSİTESİ

BİLİMSEL ARAŞTIRMALAR ETİK KURULU

Dear Twana Yousıf Mawlood

Your application titled **"An Environmental Comparison Between Students And Farmers: Environmental Approach And Agriculture Extension"** with the application number YDÜ/EB/2020/483 has been evaluated by the Scientific Research Ethics Committee and granted approval. You can start your research on the condition that you will abide by the information provided in your application form.

Assoc. Prof. Dr. Direnç Kanol

Rapporteur of the Scientific Research Ethics Committee

Direnc Kanol

Note: If you need to provide an official letter to an institution with the signature of the Head of NEU Scientific Research Ethics Committee, please apply to the secretariat of the ethics committee by showing this document.

Appendix 2. Questionnaire tool to students and farmers

Dear Participant,

This questionnaire is a part of a master's study in the Environmental Education and Management Department at Near East University in Cyprus. The research study aims to determine and compare the thoughts of students and farmers about the environment. Your contribution to this study is greatly appreciated, as it will add significantly to the value of this research. Your responses will be kept secure and will remain confidential.

Thank you

Twana Yousif Mawlood

Master Student Environmental Education and Management Department

Section A: Personal information of Respondent

1) What is your age? ……
2) What is your gender? ( )Female (…)Male
3) How would you describe the area in which you are living? (…)Urban (…) Semi-urban (…) Rural
4) The number of your household?

(…)Live alone (…) 2
(…) 3 (…) More than 3

5) Level of Education

(…)High school (…) College (…) No, read and write

Section B: Background Knowledge on Environmental Issues

For this study please respond with the option provided in the checkboxes in respect to the question by indication either of the following:
Strongly Disagree (S.D); Disagree (D); Partly Agree (P.A); Agree (A); Strongly Agree (S.A)

Mark the appropriate box for your answer

Statements	S.D	D	P.A	A	S.A
1- Change in agricultural productivity is a result of an environmental problem					
2- One of the environmental problems is climate change					
3- Soil erosion is one of the environmental issues					
4- One of the environmental challenges is water pollution					
5- Industrial discharge is one of the environmental issues					
6- Air pollution is one of the environmental problems					
7- Poor agriculture practices is an environmental issue					
8- Poor disposal of solid waste is an environmental issue					
9- Deforestation is an environmental issue					
10 Lack of sewage system is an environmental issue					

Section C: Environmental Conscious Awareness Test

Environmental Awareness Test	S.D	D	P.A	A	S.A
1- Extermination of plants and extinction of animals is harmful to humankind.					
2- Polluted rivers and oceans have no impact on life.					
3- I am worried to see the paper and plastic waste in the garbage Instead of recycling it.					
4- The air I breathe is quite polluted.					
5- Living things will disappear in the future When nature begins to Degradation..					
6- We may not have drinkable water in the future.					
7- it is the politicians are responsible for increasing waste garbage around the country.					
8- Most people will die or become sick due to air pollution in the Future.					
9- I want to learn how to preserve the clean water, rivers, and Streams.					
10- There aren't sufficient numbers of organizations or institutions to protect the environment and take steps necessary.					
11- I turn off running water tamp when I don't need it at home and Workplace.					
12- I'd like to contribute protect the ocean, rivers, and streams from those who want it to be polluted					
13- I'm a volunteer to spare some of my free time to protect plants and animals.					
14- Fossil fuel resources will be used up if degradation continues.					
15- I would like to assist in the purification of a polluted ecosystem (dams, rivers, forest, and ocean					
16- To avoid polluting the environment I wouldn't drive faster than(100KMH)					
17- I'm ready to purchase school and home materials made of Recycled waste.					
18- I would use artificial fertilizer if I had gardened in my garden House.					
19 - I prefer to spend time at recreational places and parks rather Than visiting a crowded place.					
20- I think the recycling process has positive effects on the Environment.					
21- I'm trying to use my special paper bag to carry things when I'm shopping rather than a plastic bag.					
22- I will use solar electricity instead of gasoline generator in House or workplace or government institutions.					

Kurdish Questionnaire for Farmers

بةشداربووي بةريَز

ئةم ثرسيارنامةية بةشيَكة لة خويَندني ماستةرنامة لة بةشي ثةروةردة و بةريَوةبردني ذينطةيي لة زانكؤي(Near East)لة قوبرس .ئاما نج لةم تويَذينةوة بؤ دياريكردني و بةراوردكردني بيري خويندكاري كؤليَذي قوناغي ماستةر كشتوكالَ و جوتياران دةربارةي ذينطةي دةوروبةر بةشداريت لةم ثرسيارنامةية زؤر بةرز دةنرخيَنريَت وة طرنطي و بةهاي ئةم تويَذينةوةية بةرزدةكاتةوة وةلأمةكانت بة نهاراوةيي و نهيَني دةثاريَزريَن .

لةطةلأ ريَز و سوثاس

توانا يوسف مولود
قوناغي ماستةر

برطةي يةكةم: زانياري كةسي وةلأمدةر

1. تةمةنت ضةندة ؟ ....
2. رةطةزت ضيية؟ ....
3. ضؤن باسي ئةو شويَنة دةكةيت كة ليَي دةذيت ؟

( ) شارستاني ( ) نيمضة شارستاني ( ) طوندنشين

4. ذمارةي ئةو كةسانةي لةطةلَت دةذين ؟

( ) بةتةنيا دةذيم ( ) 2 ( ) 3 ( ) لة 3 زياتر

5. ئاستي خويَندةواريت ؟

( ) ئامادةيي ( ) زانكؤ ( ) نةخويَندةوار

بڕطەي دووەم: زانيني زەمينة يى لةسةر ثيَشهاتةكاني ذيَنطةيي

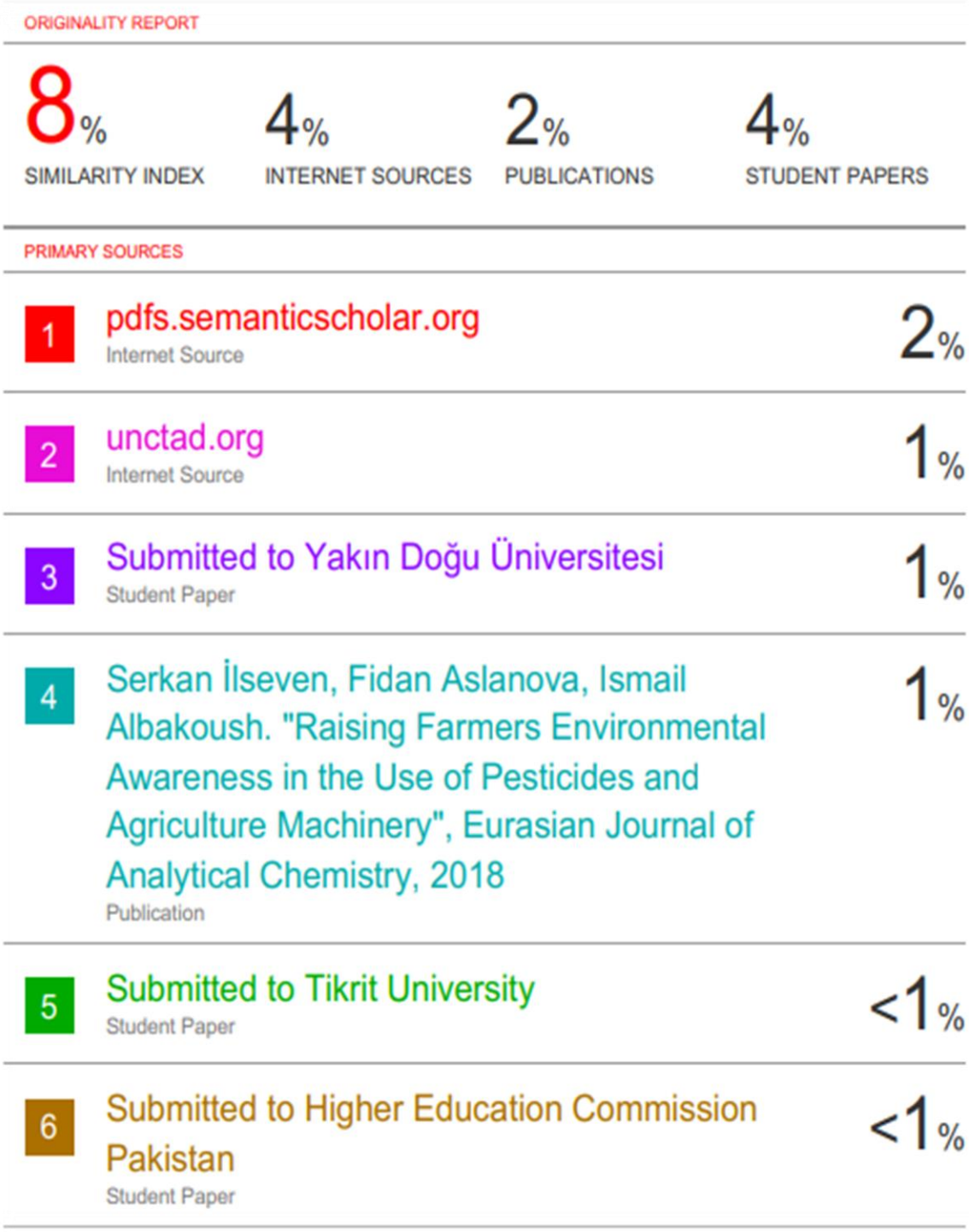
بؤ مةبةستي ئةم خويَندنة تكايةئةو بذاردةيةي دةستةبةرت كردووة لة ثرسيارنامةكة لة ضوارطؤشةكة دايبنيَ لة ثيَوةي ئةم دةستةواذانةي خوارةوة :
بةرادةيةكي طةورة هاورانيم(S.D) ، هاورانيم (D) ، نازانم (P.A) ، هاورام (A) ،بةرادةيةكي طةورة هاورام (S.A)

وتة	S.D	D	P.A	A	S.A
1.طؤران لة بةرهةمي كشتوكالي لة ئةنجامي طرفتي ذيَنطةيية.					
2..طؤرانكاري كةش وهةوا كيَشةيةكي ذيَنطةية					
3.رامالييني خاك كيَشةيةكي ذيَنطةية					
4.ثيسبووني ئاو كيَشةيةكي ذيَنطةية					
5.دةرضووةكاني ثيَشةسازي كيَشةيةكي ذيَنطةية					
6.ثيسبووني هةوا كيَشةيةكي ذيَنطةية					
7.خراثي كرداري كشتوكالي كيَشةيةكي ذيَنطةية					
.خراثي فريَداني ناشةرؤكي رةق كيَشةيةكي ذيَنطةيي.					
9 .لةناوضوون دارستانةكان كيَشةيةكي ذيَنطةية					
10. نةبووني سيستةمي ثيَشةلؤك كيَشةيةكي ذيَنطةية.					

تاقیکردنەوەی هۆشیاری ژینگەیی بڕگەی سێیەم :

S.A	A	P.A	D	S.D	هۆشیاری ژینگەیی
					1. لەناوچوونی ئاژەڵ و گیانلەبەران و ڕووەکی زیان بەخشە بۆ مرۆڤایەتی
					2. پیسبوونی ڕووبار و دەریا زیان بەخشە بۆ ژینگە
					3. دڵخۆش دەبم کاتێک دەبینم خەڵکی کاغەزی لە زبڵدان فڕێدەدات لە جیاتی بەکارهێنانەوەی
					4. ئەو هەواڵانەی ژینگە گرنگیم پێ نییە
					5. ئاژەڵەکان لە داهاتوودا لە ناو دەچن بە هۆی تێکدانی بەردەوامی سروشت
					6. لەوانەیە ئاوی خواردنەوە دەست نەکەوێت لە ئایندەدا
					7. ئاڵۆزیی لە بەرئەوەیە سەوزەکان دەکرێت ئەنجامی کەڵەکەبوونی زبڵ و خاشاکی زۆر
					8. زۆربەی لە خەڵک دەمرن یان نەخۆش دەکەون لە داهاتوودا بە هۆی پیس بوونی هەوا
					9. پێویستە هۆشیاریمان هەبێت لە شوێنەکانی ئاو و ئاستی دەریا و دەریاچە و ڕووبارەکان
					10. ئەمانەی پێویست لە ڕێکخراو و دامەزراوەی ژینگەییمان نییە بۆ ئاراستەی ژینگەی پێویست و بڕیاری پێویست بدات لە کاتی پێویست
					11. من هەرکاتێک ببینم ئاو لە هەر شوێنێک بەفیڕۆ دەڕوات کراوە بوو دەیبەستمەوە جا لە ماڵ و جا لە شوێنی کارم
					12. ئاودانی بە دڵۆپە بەکار دەهێنم لە بۆ ئاودانی باخچەکە لە جیاتی ئاودانی بە جۆگەلە
					13. هەندێک لە کاتم تەرخان دەکەم بۆ ئاراستەی ڕووەک و ئاژەڵ
					14. بەکارهێنانی سەرچاوە بەردەوامەکان بە بەردەوامی دەبێتە هۆی تێکدانی ژینگە بەتایبەتی لە سەرخۆ
					15. من دەتوانم بەشداری لە خاوێن کردنەوەی شوێنی پیس بوون وەکو ڕووبار و دارستان و شوێنە گەشتیاریەکان
					16. بۆ دوورکەوتنەوە لە پیس بوونی ژینگە من ئۆتۆمبێل بە خێرایی 100 کم زیاتر لێناخوڕم
					17. من ئامادە باشیم هەیە کە کاڵ و قوتوی قوتابخانە بکڕم کە دروستکراوی دووبارە بەکار هێنانەوەکەیە (ڕیسایکلین)
					18. ئامادە باشیم هەیە لە کاتی حەوانەوە یان بۆ پشووی کاتم ئاوی ئەشتاسازی بەکار بهێنم
					19. بۆ بەسەر بردنی کاتەکانم لە شوێنی ڕابواردن لە جیاتی پشووەکانی تەلەفزیۆن
					20. لەم وانە ئەو ... بەرگری هێنانەوە کاردانەوەی دروستی هەیە لە سەر ژینگە
					21. هەڵبەتەی (زەرفی کاغەز) ئایینی خۆم بەکار دەهێنم لە جیاتی هەڵبەتەی پلاستیکی دروستکراو لە کاتی کڕینی کاڵ و ئاڵ
					22. کارەبای وزەی خۆر بەکار دەهێنم لە جیاتی بەکار هێنانی کارەبای ئاسایی بەهۆی پیسبوونی

Appendix 3. Plagiarism



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