

A Review on National and International Legal Documents on Combating Sand and Dust Storms

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Abstract: In the current world, various types of pollution are the result of the adverse effects of human activities. One of these types of contaminations is air pollution, originated from dust. Over the years, governments and international organizations both governmental and non-governmental have made great efforts to manage and reduce the destructive effects of sand and dust storms. However, the fact is that there is a serious gap in relation to the legal documents related to management and the reduction of destructive effects of sand and dust storms. In other words, countries that are somehow involved with this phenomenon have not implemented effective measures for the compilation and approval of binding documents for the reduction of sand and dust storms. This failure is rooted in many issues, including political, economic, social, and cultural concerns. It is also worth mentioning that among the few documents on managing and reducing the destructive effects of dust, many of them at the regional level are between just two or more countries directly affected by this phenomenon. The present article, applying an analytical-descriptive method, seeks to examine the Iranian national laws and regulations as well as international legal documents on sand and dust storms; it also outlines the existing legal vacuum and provides related practical solutions. Studies show that so far, a law that directly and specifically deals with the issue of sand and dust storms has not been approved and the international community has not succeeded in drafting and ratifying a specific document in this regard.

Keywords: Air pollution, Dust, Domestic law, International documents, Legal vacuum.

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1. Introduction: Nowadays, overuse of natural resources and paying no attention to environmental issues as well as failure to adhere to the proper consuming patterns in the conceptual framework of sustainable development have dramatically affected the environment. A report conducted by World Health Organization in 2012 showed that 23 percent of global deaths (and 26 percent of deaths among children under five) are due to modifiable environmental factors. According to this study, 7 million people died - one in eight of total global deaths - as a result of air pollution exposure. (WHO, 2012) One of the existing environmental challenges is sand and dust storms, which transcend borders; transit from one country, to another and cause severe environmental damages. The phenomenon of sand and dust storm has both natural and human origins. As a human factor, desertification is considered as the main cause of sand and dust storms. Desertification is major cause of sand and dust storms. The degradation of vegetation and climate change cause the destruction of dust stabilizing agents and the storm of contaminated dust can easily enter the territories of the countries. In recent years, the occurrence of such storms has even disrupted the sovereignty of some countries. This type of pollution which mainly transfers from one region to another is categorized as trans-boundary pollution. (Hosseini, 2012)

Principle 1 of the Stockholm Declaration (United Nations, 1972), in relation to human right to natural resources and the surrounding environment states: "Man has the fundamental right to freedom, equality, and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being." The right to environment, despite being considered in international documents and positively admitted by the states, according to some environmental jurists, has yet to be recognized as an international customary law. However, it has been regarded as an ambitious right, which mainly reflects national goals and objectives rather than a supportable judicial law. In contrary, some also believe that a number of environmental rights such as right to life, right to health, and right to own property, independently or alongside with other rights have been admitted in existing international

documents. However, the status of this right has been manifested as a fundamental right in constitutions and domestic laws of many countries. Sand and dust storms have a profound impact on natural environment and human health, and undoubtedly, such storms are considered a violation of the right to a healthy environment. (Bernstein, Winter 2004/Spring 2005) This study evaluates national and international documents in relation to sand and dust storms and outlines related existing challenges.

2. National Legal Documents and Sand and Dust Storms

Amongst important principles of Iranian constitution, articles 45 and 50 encompass all environmental issues including air pollution caused by sand and dust storms. Article 45 states: "The followings are under the control of the Islamic government: wastelands and public wealth, abandoned or unclaimed land of deceased owners, mines, seas, lakes, rivers, and other public bodies of water, mountains, valleys, forests, marshlands, natural prairies, unrestricted pastures, inheritance without any heir, wealth without any identified owner, and public wealth that is confiscated from the usurpers. The Islamic government will treat these in accordance with the public interest." Article 50 expresses as follows: "In the Islamic Republic of Iran, preserving the environment where the present and the future generations may have an improved social life is considered a public duty. Consequently, any activity, economic or what else that leads to the pollution of the environment or its irreparable damage will be forbidden." (I.R.Iran. Const. art.50, § 4) Article 50 is expressed implicitly and its scope includes environmental activities that have internal or external effects. Article 50 considers environmental protection as a civil right. One of the strengths of Article 50 is to generalize the concept of environmental pollution, which comprises all types of pollution. In the remainder of this discussion, other high-level and low-level laws and regulations, directly or indirectly related to air-borne dust pollution, will be considered.

2.1 High Level Documents

2.1.1 General Environmental Policies

Towards the implementation of paragraph one of article 11 of the Iranian constitution, the government notified general environmental policies to come into force on November 17, 2015. The main pillars of general environmental policies are including establishment an integrated national environmental system, carrying out a coordinated and systematic management of natural resources, criminalization of environmental degradation, preparing an atlas of country's ecosystem, enhancing environmental diplomacy, expanding green economy and institutionalizing environmental culture and ethics.

General environmental policies are presented in clause 15 in which the question of controlling and combating sand and dust storms has been underlined. The first pillar of Iranian general environmental policies focuses on comprehensive, coordinated, and systematic management of natural resources (such as air, water, soil, and biodiversity) and relies on sustainability of ecosystem especially through legal capacity building and empowerment as well as establishing appropriate structure alongside public participation. Clause four of these policies is aimed at preventing and avoiding the spread of all types of illegal pollutants that also includes airborne dust and particulate pollution. In clause 5 the issue of constant monitoring and controlling the sources and factors contributing to air, water, soil, noise pollution, waves and destructive rays and adverse climate changes have been mentioned. Accordingly, all sources and contaminating factors are required to comply with the environmental standards and indicators set forth in the laws and regulations as well as spatial planning development programme. The fifth clause covers all types of contaminations, including dust pollution. In this connection, issues such as conservation, restoration, rehabilitation, and development of renewable natural resources, including seas, lakes and wetlands, are the focus of attention.

The seventh clause of these policies directly deals with the issue of dust, in which the importance of managing the adverse effects of climate changes and addressing environmental threats such as desertification, dust, drought, microbial and radioactive agents, as well as identification and management of emerging environmental challenges, are emphasized. (General Policies, 2015)

2.1.2 Fifth Five-Year Development Plan Act of I. R. of Iran

Given that the Fifth Development Plan Act is still in place and the deadline for its implementation has not yet been completed, the dust related-articles that the plan aimed to cover will be examined in this paper.

Article 191 deals with the preparation and implementation of a management plan for sensitive ecosystems such as Lake Urmia. In fact, drying of Lake Urmia generates salt dusts that consequently destruct fertile plains of the area and causes harm to neighboring inhabitants.

In line with the policy of declining polluting and destructive factors of the environment, all major manufacturing, industrial, construction, service, and infrastructure units are required to carry out their major production, services, and development projects in accordance with the criteria of environmental impact assessment approved by High Council for Environmental Protection. These are supposed to be done prior to implementation phase and at the stage of feasibility and location-allocation studies. All project owners are obliged to take samples and perform measurements on the level of pollution and environmental degradation and submit the results in a self-declaration report to the Department of Environment. They are also required to upgrade their technical specifications to comply with environmental standards and to reduce the pollution and destruction of basic resources, especially natural resources and water. Failure to comply with environmental standards and regulations by large industrial plants will result in production and distribution of environmental pollutants and degrading factors, particulate matter and dust that are endangering human health.

Article 193, in order to protect coasts and national wetlands, emphasizes on urban waste management equipped with modern methods and new technologies with priority of organic methods. Prioritizing the identification of emission control centers as well as control and reduction of greenhouse gas emissions, obliges the Department of Environmental Protection to provide the necessary measures towards reducing air pollution based on global standards. Clause 3 of article 193 prohibits any new industrial and mineral exploitation in national wetlands. Given the especial economics,

agriculture, ecosystem, biodiversity and tourism conditions of the wetlands, the existence of suitable pasture lands and surrounding landscapes, the serious challenges in allocating water resources in these areas, and in general, the complexity and the fragility of natural habitats in wetlands, the government, participating local exploiters, is obligated to implement an integrated management programme. In fact, drying of national wetlands increases the probability of dust spreading and causes more air pollution. It also makes dried wetlands become one of the dust diffusion centers.

2.2 Non-programme Rules

In general, there are limited rules and regulations regarding preparedness, response, and counteraction to sand and dust storms in Iranian domestic law and documents. The existing related documents, which are examined in the following discussion, often do not directly deal with the issue.

2.2.1 *The Law on Prevention of Air Pollution (Approved on April 23, 1995)*

Although the law on prevention of air pollution does not directly address the phenomenon of sand and dust storm, the provisions contained therein can be somehow effective in counteracting sand and dust storms. These regulations are as follows:

Article 2 of the Law on prevention of air pollution prohibits any action that causes air pollution. According to this article, air pollution is defined as follows: "The existence and distribution of a certain amount and time of pollutant including solid, liquid, gas, radioactive and non-radioactive radiation in open air so that the air quality is so harmful to human, living organisms, plants or and buildings". (Air Pollution Act, 1995) Based on the definition given in Article 2, it can be concluded that sand and dust storm, due to changes in air quality and harmful to the health of humans and other living organisms and plants, can be defined in the context of the definition of air pollution.

According to article 18, Department of Environment in cooperation with the relevant Ministries and other governmental agencies, in cases where the pollutions caused by the activities of industrial factories are endangering the health of the neighboring inhabitants and the mitigation or elimination of the pollutions are

impossible, are required to prepare a plan for the transfer of factories to appropriate sites (preferably industrial townships) and submit it to the Cabinet of the government for approval. Accordingly, it can be assumed that, if the activities of factories are contaminating and spreading pollutions such as dust that can't be easily reduced or eliminated, these factories and workshops must be transferred to other places where do not threaten people's health.

Industrial townships and complexes, power plants and production units, in accordance with article 19 are required to allocate at least 10 percent of their spaces to planting of green areas and cultivation of appropriate trees in the area. Green belt are considered as an effective way to combat dust pollution produced by power plants, production units, ... and perform as a protective ring in this field. According to article 20, factories, workshops, power plants, brick burners, and limestone plants that produce a lot of dust during the production process are required to use appropriate fuels and combustion systems in ways that reduce air pollution.

Article 22 of the Law on the prevention of air pollution, prohibits the excessive release of all types of air pollutants, including commercial, household, and other materials in open air. Air particulate matters are considered as air pollutants and the term is applied to describe solid and liquid particulate in the air, which are very diverse in terms of type and size. In terms of size, they are divided into three types: Coarse particles or 10 PM, fine particles or 2.5 PM and ultra-fine particles or 0.1 PM.

Article 23 deals with airborne dust pollution. According to this article, all pollutant sources, including baths, bakeries, hotels, restaurants etc., are obliged to consume appropriate fuel, preferably urban gas and take appropriate measures to prevent the spread of smoke and other pollutants in the open air. In accordance with article 24, burning, and accumulation of urban and household waste in public and open spaces, due to release of pollution and particulate matters, is prohibited.

Article 25 put emphasis on the attention to environmental issues through the preparation of comprehensive urban improvement plans and considers the development of urban green spaces as one of the ways to control and combat dust pollution. Taking this into consideration, designing and planning of the cities, townships,

and residential complexes from the aspect of open and green spaces, proximity of functions, network of corridors and transportations, standards of floor area ratio, etc., should be in accordance with environmental criteria.

2.2.2 Regulation on Preparedness and Combat Harmful Effects of Dust Phenomena in The Country (Approved on July 21, 2009)

In accordance with the article 1 of this regulation, in order to establish national readiness, manage and counteract the harmful effects of the dust storms in the country and set up regional cooperation, a task force with the responsibility of the First Vice President and the following members will be established: Heads of Department of Environment, National Disaster Management Organization, Metrological Organization, Forests, Ranges and Watershed Management Organization, and Deputy Minister of Power, Deputy Minister of petroleum, Deputy Minister of Health and Medical Education, Deputy Minister of Interior, Deputy for International Affairs of the Ministry of Foreign Affairs and the Deputy for Strategic Planning and Monitoring of the Presidency. (Cabinet Approvals, 2009)

This regulation set out some short, medium, and long-term programmes to combat dust phenomenon. These programmes are as follows:

A. Short-Term Programmes

- In order to obtain accurate information on the phenomenon of dust in the south and west provinces of the country and to identify the centers for their initial formation, and also to forecast and alarm the occurrence of dust storms, the Department of Environment and the Organization of Meteorology in cooperation with the Organization of Forests, Ranges and Watershed are obliged to jointly prepare the plan of development and equipment of monitoring stations for atmospheric conditions, pre-awareness systems and metrological control of the region within three months and submit it to the task force for approval.

- The Ministry of Agriculture in coordination with the Meteorological Organization and the relevant provinces, in accordance with the timetable set by the task force and based on the results of studies on identification of critical centers of desertification, are required to take necessary measures for mulching and other

appropriate actions in areas that have high wind erosion potential.

- Towards awareness building and enhancing public information on preparedness and combating dust pollution, the affected south and west provincial governments in cooperation with the provincial departments of Meteorological, Education, Environment, Regional Water Organization, Medical Sciences Universities and health care services, are required to provide necessary training and educational programmes and run them in cooperation with local TV stations.

- Organization of Forests, Ranges, and Watershed is obliged to prepare a plan for constructing green spaces in the crisis epicenters and put it into effect with the cooperation of the Organization of Mobilization Resistance Force.

- The Task Force of the ministries, with the suggestion of the Crisis Management Organization which is affiliated with the Ministry of the Interior, is authorized to allocate necessary fund for combating sand and dust storms from the credit line of article 10 of the Law on the government's financial regulations and provide it with the universities of medical sciences of south and west of the county including provinces of Bousher, Khuzestan, Hormozgan, Ilam and Kermanshah.

- Ministry of Energy is required to maintain the water appropriation of southern and western wetlands of the country, designated by the joint commission of Department of Environment and the Ministry of the Energy, and provide necessary cooperation to protect and restore these wetlands and submit regular reports to the task force.

B-Medium Term Programmes

- Municipalities of the cities located in the southern and western provinces of the country, in accordance with the criteria of comprehensive plan and based on the priorities for location and the specific type of cultivations, are required to observe the viewpoints of the Department of Environment and the Organization of Forests, Ranges and Watersheds on implementing the plan of green space belt for the relevant cities.

- In order to decline the damages of municipal drinking water treatment plant caused by sand and dust storms, Ministry of Energy is required to construct green belts equipped by appropriate windbreaker layers around the facilities.

- The Organization of Forests Ranges and Watersheds, in cooperation with the Ministry of Defense, Meteorological Organization and the Organization of Mobilization Resistance Force and in line with the National Plan of Action to Combat Desertification and Reduction the Drought Effects in the country, is obliged to cultivate at least annually 600 sq.km of local and low-water-consuming trees in a form of wind breaker layers within the period of five year. The priority areas in south and west of the country which are environmentally vulnerable are as follows:

- a. Green space belt of all regional airports by observing the zone of airports.
- b. Safe zone (150 meters) of railways and intercity roads.
- c. Watershed basins of exploited dams.
- d. Green belt on the Southwest Borderline.
- e. Critical wind-erosion centers.

- Deputy for Strategic Planning and Monitoring of the President, in coordination with the Department of Environment are required to propose an independent budget line in the national budget bills for executing dust-related researches in the country and at regional level that is to be carried out by Climatological Research Institute.

C- Long-Term Plans

- Ministry of Agriculture, in order to protect soil erosion by wind, is required to prepare a comprehensive plan for management and rehabilitation of pastures in the south and west provinces of the country within the period of one year and submit it to the government to put into operation and obtain the needed fund in framework of the fifth development plan.

- Ministry of Agriculture in cooperation with Department of Environment, within the period of fifth development plan are required to implement a comprehensive plan for combating shifting sands and wind erosion in south and west of the country by prioritizing biological methods,

- Ministry of Roads and Transportation in line with the purpose of navigating flights in the circumstance of sand and dust storms, is required to prepare and set forth the programme of the development of airports in south and southwest of the country to the advanced navigational equipment and improved metrological facilities.

- Deputy for Strategic Planning and Monitoring of the President's office, based on technical,

economic, and environmental surveys of the executive agencies is required to predict the needed credits for implementing the programme of the current regulations within the annual budget lines of the relevant agencies.

- For the purpose of studying the trans-boundary dimension of sand and dust storms and to establish a field of regional cooperation, a team of experts, selected by the task force of the subject of article 1 is established and will be dispatched to the regional countries with the cooperation of the Ministry of Foreign Affairs. The expert team is supposed to submit solutions for decision making of the task force.

- The Organization of Forests Ranges and Watersheds as the national authority of the United Nations Convention to Combat Desertification, in cooperation with the Department of Environment, Meteorological Organization, Ministry of Energy, and Ministry of Foreign Affairs, are obliged to draft a plan of multilateral cooperation among regional countries. The plan aimed at preventing and control of sand dust storms at the regional level and the task force of the article 1 will approve it. (Exec. order, 2009)

2.3 Clean Air Standards for The Years 2009, 2010, 2011 (Approved on August 2, 2009)

In 2009, clean air standards used to consider particulate matters with less than 10 and 2.5 microns as airborne contaminants. In that year, the benchmark criterion of particulate matters was 150 microgram per square meter. There was no distinction based on particle diameter and any authorized parameter, which were considered at that time. Since 2011, these parameters were added to standards of the clean air. (Cabinet Approvals, 2009)

3. International Legal Document

From the viewpoint of international law, the existence of transboundary centers of sand and dust storms among two or more neighboring countries categorize it as transnational phenomena. The Stockholm Declaration of 1972 and Rio Declaration of 1992 brought the global attention to the importance of the environment. The maintenance of the human race and its survival in a safe and non-violent environment is one of the core issues of the United Nations. Degradation of environmental quality is a serious threat to human survival. Hence, respect

for human rights has a direct and immediate relationship with the protection and preservation of the environment. The relationship between human rights and the right to a healthy environment has attracted the attention of many scholars. Among international documents, in addition to the Stockholm and Rio declarations, the United Nations World Charter for Nature (1982), and several other declarations have also recognized the right to a healthy environment. Therefore, it seems that international documents and treaties explicitly or implicitly have recognized the right to a healthy environment. Some uncertainties, which previously categorized this right as a soft law, are now converting it into the hard law.

On the other hand, the changes and developments have intensified the necessity for international cooperation. Governments have concluded that the possibility of having a healthy environment would be so difficult without the cooperation of people and non-governmental organizations. One of the Seventeen goals of the Sustainable Development Goals is immediate action to combat climate changes, which encompasses the control and combating sand and dust phenomena. In the following, legal and non-binding documents that somehow deal with the issue of dust will be reviewed.

3.1 Convention on the Elimination of Desertification

The occurrence of droughts and severe famine in the late 1960s and early 1970s in Africa highlighted it as a global challenge and common pain of hundreds of millions of people, especially in underdeveloped countries. Subsequently, the United Nations General Assembly adopted the first related resolution in 1974 to grab the attention of public opinion on the issue of desertification crisis and combating it. In line with this policy, the United Nations Environment Programme (UNEP) launched broad measures in four continents of Asia, Africa, Latin America, and Europe focusing on the preparation and implementation of desertification control programme as well as water and soil conservation projects with the help of the developed countries. However, subsequent evaluations carried out in 1991 showed that, in spite of UN efforts and follow-ups as well as UNEP national, regional, and trans-regional training workshops on how to

deal with desertification, these measures have not been rightly tailored to the needs of the international community. Hence, for the first time, a summit was convened at the highest possible level in Rio de Janeiro, which addressed a matter other than economy or culture.

In the resolution of the conference, known as Agenda 21, chapter 12 devoted to desertification and accordingly the United Nations called upon to address this issue as one of the most overriding global crises. In this connection, the United Nations adopted resolution no. 719/47 at the General Assembly's 47th session in which the establishment of a committee namely "intergovernmental negotiating committee for the elaboration of an international convention to combat desertification in those countries experiencing serious drought and/or desertification, particularly in Africa" was approved. Finally, the text of the Convention adopted on June 17, 1994, a day that was named by the United Nations as the "World Day to Combat Desertification and Drought." (Cabinet Approvals, 2009)

In October 1994, the official signing ceremony of the convention took place in Paris. The Minister for Construction, representing Islamic Republic of Iran, was the third signatory to the Convention. The convention eventually ratified by the Iranian Parliament in December 1996 and the Islamic Republic of Iran became one of its committed members. Perhaps, amongst all treaties and declarations on environmental law, none directly related to the issue of sand and dust storms. However, the Convention on Desertification has become more relevant to the issue. As stated in the introduction to the convention, desertification is essentially, due to the complex interaction of physical, biological, political, social, cultural, and economic factors. Desertification and drought effect on sustainable development through their interactions with important social issues such as poverty, inadequate health and nutrition, food insecurity and immigration issues, displacement of people and demographic interactions. The convening of this treaty was the result of the efforts of the participants in the Rio Summit. Chapter 12 of the 21st Century Agenda entitled desertification acknowledges that one sixth of the world's population lives in desert areas. It encouraged the UN General

Assembly to begin negotiations on signing of an international treaty to combat desertification and submit it in 1994 for approval. (Legal Department of Presidency, 2000)

The preamble of the convention stipulates, "Reaffirming the Rio Declaration on Environment and Development, governments in accordance with the UN Charter and international law entitle the right of sovereignty for utilization of their resources in line with environmental policies and the development of their territory. Governments also have a responsibility to ensure that activities within their jurisdiction do not cause damage to the environment of other states or areas beyond the limits of their national jurisdiction." Looking accurate to the introduction of this convention implies that all emphasis is placed on the principle of participation of individuals, non-governmental organizations, and other major groups in desertification.

The purpose of the Convention, as stated in Article 2, is to combat desertification and to reduce the effects of drought in countries that are seriously affected by drought and desertification. Achieving this objective encompass long-term comprehensive strategies, simultaneously improve land productivity fulfill conservation and sustainable management of water and soil resources and ultimately improve the living conditions of people, especially at the community level.

Therefore, the member States of the convention seek to achieve the following three goals:

- Fighting with two phenomena of desertification and drought,
- Take care of the soil
- Preserving desert ecosystem.

Articles 3, 4 and 12 of the Convention emphasize on participation in decision-making and processing Article 19 sparks the need for education, capacity building, and public awareness in the implementation of the objectives of the treaty. Compensable inequalities with regard to need to combat desertification have been acknowledged in paragraph 7 of article 20, and the introduction of the Convention. One of the most important obligations of the member States is the codification of a national action plan to confront drought and desertification, which requires identifying effective factors in desertification and tackling drought as well as introducing the

necessary technical, financial and human resources. Therefore, the members of the Convention should, within the framework of sustainable development policies, prioritize the reduction of drought effects and based on their capabilities, devote adequate resources to combat drought. (United Nations, 1994) As it is clear, this convention indirectly relates to the issue of sand and dust storms, since it has never referred to the word "dust" anywhere in the text.

3.2 Convention on Climate Change

Today, climate change is one of the major concerns of the international community. In the 1980s, scientific evidence showed that greenhouse gas emissions from human activities create dangers for the global climate. As a result, the public opinion felt the necessity for convening international periodic conferences and forming some agreements to resolve the issue. Governments held series of international conferences to reflect public opinions and called for an international contractual arrangement to investigate this issue. In the 1990s, the General Assembly of the United Nations established the Intergovernmental Negotiating Committee to formulate the United Nations Framework Convention on Climate Change.

The Negotiating Committee prepared the draft of the convention, which was approved on May 9, 1992 at the United Nations Headquarters in New York. The convention was prepared at the Earth Summit in June 1992 in Rio de Janeiro, Brazil, for signing members. The convention was signed by heads of states and senior officials from 154 countries during the Rio meeting and came into force on March 21, 1994. By mid-1999, more than 175 UN member-States had ratified or accepted it and thus required them to comply with the provisions of the Convention. Iran became a party to the convention in 1996 after ratification of the government and the Islamic Consultative Assembly. The Convention on Climate Change consist of 26 articles.

The convention was designed to keep greenhouse gas levels intact to prevent climate change that could disrupt natural cycles. In other words, the ultimate goal of the convention is to achieve a stabilized concentration of greenhouse gas emission in the atmosphere at a level that avoids dangerous interactions between human activities and the climate system. Such a level should be achieved within a relevant

timetable to allow ecosystems to adapt naturally to climate change and to ensure that food security is not threatened and economic development is sustained. According to the scientific findings, the convention considers greenhouse gas emissions as a factor in the change the balance of global of airborne atmospheric compounds. Among the scientific theories, two theories of carbon dioxide emissions and volcanic dust are closer to the reality of greenhouse gases. Volcanic dusts have an inversely function with regard to the climate system. They reflect solar short waves, but long reflecting waves from the surface of the earth pass through them without any loss, therefore they can reduce the temperature of the earth. Paying attention to the contamination of dusts undermines the importance of this function. However, as pointed out in the Convention, the main topic of the convention is on greenhouse gases, and dusts are the small amount of particles released from the eruption of volcanoes, which are completely natural, unlike to human activities that have not been addressed in the convention.

It seems that the issue of transnational threats of sand and dust storms did not elaborated enough at the time of the adoption of the convention. However, the adoption of this convention could be an introduction to the establishment and adoption of a binding instrument on transnational dusts. Paragraph 2 of article 1 of the convention, defines the "Climate Change" as follows: Climate change means a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods." (Atabi, Nazemi, Seddighi, & Tavakoli, 2010) These changes do not include natural changes in the weather that periodically occur and could be indirectly related to the phenomenon of dust.

3.3 Ramsar Convention

Indeed, the debate on preventing the destruction of wetlands in Europe led the efforts to establish a legal framework to protect and save the wetlands from the risk of destruction. This action began in 1962. After many years of efforts and holding various meetings, it finally ended in 1971 and the first environmental convention to protect the wetlands convened.

The Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitat known as Ramsar Convention is pioneer among international environmental treaties, which puts forward the protection and appropriate utilization of wetlands, especially important international ones. Accordingly, member States are required to work towards achieving this goal through the adoption of national, local, and regional policies and through the promotion of international cooperation between each other and governmental and non-governmental organizations. (Secretariat of Ramsar Convention, 2013)

According to the Convention, States parties are obliged to comply with the following commitments:

- Designate at least one site that meets the Ramsar criteria for inclusion in the List of Wetlands of International Importance
- Promote the conservation and wise use of wetlands
- Include wetland conservation within their national land-use planning
- Establish nature reserves on wetlands and promote wetland training,
- Consult with other Contracting Parties about the implementation of the Ramsar Convention.

Ramsar Convention relates the application of the sovereignty of member States to their responsibility for protecting and wise utilization of national wetlands. Consequently, any failure brings about the responsibility of the State party. (Timoshenko, 1988) Since the ratification, Ramsar Convention has been amended twice: first by adopting the Paris Protocol in 1982 and second by applying some amendments in 1987 main treaty that was later on known as Regina Amendments.

3.3.1 Paris Protocol

The adding of article 10 to the text of the Ramsar Convention at the Extraordinary Conference of the Contracting Parties in December 1982 at UNESCO Headquarters in Paris approved the Paris Protocol. The protocol, which was implemented in 1986, clarified the procedure for the amendment of the Convention and approved the version of the treaty in English, French, Arabic, German, Russian, and Spanish. Today almost all the members of the treaty have accepted the Paris Protocol, and as a rule, new members joining Ramsar Convention

are considered part of Paris and Regina Amendments protocols. (Paris Protocol, 1982)

3.3.2 *Regina Amendments*

In an extraordinary Conference of Parties, which was convened in Regina-Canada in 1987, a series of reforms, especially to articles six and seven were applied. The reforms under discussion did not change much of the core principles of the Convention; however, some aspects of the Convention were modified which are including the powers of the contracting parties, the establishment of a standing committee, budget, and establishment of a permanent office or secretariat. These amendments were applied on May 1, 1994. (Regina Amendments, 1987)

One of the positive aspects of the Convention is to provide a general and comprehensive definition of the wetlands that is acceptable to the international community. In accordance with the provisions of the Convention, wetland is an "areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six meters." (The Ramsar Convention, 1987) This definition includes grasslands and substrates covered with grasslands, coastal areas, mud or clay waterways, estuaries, rivers, freshwater marshes, forests or freshwater lakes and marshy lakes. In addition, applying the standard criteria of the Convention, the lakes behind the dams are considered as wetlands. Although, according to the Convention, marine wetlands refer to the areas that the depth of water at low tide does not exceed six meters, the Convention covers areas of water depths of up to six meters and the islands located in these areas. In other words, Ramsar Convention covers rivers and lakes in general, regardless of the water depth.

The growing awareness of the environmental challenges and the need for reasonable protection and use of wetlands have become global issues. In order to protect the sites covered by the Ramsar Convention and in accordance with paragraph 1 of article 2, wetlands that can be listed in international important sites "shall be precisely described and also delimited on a map and they may incorporate riparian and coastal zones adjacent to the wetlands, and islands or bodies of marine

water deeper than six meters at low tide lying within the wetlands, especially where these have importance as waterfowl habitat." (The Ramsar Convention, 1987)

The Ramsar Convention did not have much activity in the early years, and was subject to abandonment. This situation improved dramatically after the ratification of Regina Amendments. However, many of the member States have not fully implemented the Convention. It is estimated that in the ecological conditions, 84 percent of the wetlands registered in the list of the Convention have changed so far.² Some member States, in line with protection and wise utilization of wetlands, have taken steps and codified specific national policies, which indicate an enhanced understanding on the importance of wetlands. In contrast, a few countries have not joined the Convention. With regard to the designation of wetlands, some member States have not met the criteria of Ramsar Convention and most of the wetlands are not enlisted as Wetlands of International Importance and are left unprotected and exposed to serious threats. (Ramsar Convention, 1987)

The status of Iran's wetlands, taking into consideration the number of wetlands registered in the Montreux Record, is increasingly alarming. In order to improve the situation of country's wetlands, Department of Environment as the national authority for the wetlands, has the mandate to apply adequate procedures and obligations outlined in the Ramsar Convention. Otherwise, the continuation of this situation will dry wetlands and increase dust emissions in the air, which will intensify the air pollution. The Ramsar Convention is also required to set up ways to deal with dust in Central and West Asia, especially Iran. (Talaie & Daryadel, 2015)

4. Regional Legal Documents

In the context of trans-boundary pollution caused by smoke and dust particles, so

2 .According to the official website of the Ramsar Convention on Wetlands, totally 32 Ramsar sites have been removed from Montreux Record in the year up to September 2011. Sites included in the Montreux Record, "a record of Ramsar sites where changes in ecological character have occurred, are occurring, or are likely to occur maintained by the Secretariat in consultation with the Contracting Party concerned (Recommendation 4.8, 4th COP, Montreux, Switzerland)." (The Montreux Record, 2011)

far no specific document has been developed globally. The most famous regional document in this area is the regional action plan for dust, which was formulated by ASEAN in 1997. The main reason for adopting this programme was the forest fires in the Southeast Asia that were took place in 1997. In this fire, heavy smoke and dust polluted the air and caused severe problems for not only originally engaged countries but also spread to other regional countries including Malaysia, Myanmar, Singapore, and Thailand. In this regard, ASEAN agreement on trans-boundary haze pollution should also be mentioned. This document is, in fact, the first agreement that explicitly deals with dust issues.

4.1 ASEAN Agreement on Trans-Boundary Haze Pollution

The agreement on trans-boundary haze pollution was codified and signed following an international conference, held in Kuala Lumpur in the year 2002. The agreement, identifying the harmful effects of the haze on human, living organisms and ecosystems, put emphasis on preventive, precautionary, and coordinated measures for bilateral and multilateral cooperation on appropriate responses in emergencies and highlighted the importance of appropriate management of the forests. The purpose of this agreement is to prevent and control the trans-boundary pollution of dust as consequence of drought and forest fires, which must be reduced through national, regional, and international coordination. (ASEAN, 2002)

4.2 Memorandum of Understanding Between Iran And Iraq

On June 8, 2011, the Iranian and Iraqi environmental officials hold a meeting. The meeting concluded with the signing a memorandum on bilateral cooperation to control one million hectares of critical dust-rising regions in Iraq, between Iraqi Minister of the Environment and the chief of Iranian Department of Environment. However, according to the Iraqi Environment Minister, the implementation of this memorandum depends on the budget and decisions of the Iraqi government.

According to this memorandum, the Iranian side, through training Iraqi experts, transferring new equipment and desertification facilities to Iraq, is required to put forward the

plan for managing and controlling one million hectares of deserted land and dust-rising regions in Iraq over the course of five years. Iranian Meteorological Organization is committed to provide Iraqi side with all needed meteorological data and weather forecasting products. Reciprocally, Iraqi meteorological body is obliged to provide the Iranian counterpart with all related data. (Iran-Iraq Agreement, 2011)

4.3 Ankara Declaration

In October 2010, a regional environmental cooperation meeting was held in Turkey. The meeting, which was attended by four Iraqi, Syrian, Turkish and Iranian officials, led to the signing of Ankara's statement. The statement emphasized on the cooperation of member countries in minimizing environmental pollution, especially the phenomenon of dust. The statement also urged that member States, in accordance with the principles of fairness and reciprocity, would endeavor to control soil wind erosion and improve regional projects to cope these threats within the framework of sustainable development and in line with the related treaties and agreements to which they may be committed.

According to Ankara Declaration, participating ministers agreed to set up a "joint task force" consisting of experts from related ministries or departments of the countries, one senior and three experts, and international organizations; prepare 2-year Plan and exchange of experiences in the field of environment, Air Quality Management, Metrology and De-desertification forestry, soil fixation and control of soil erosion and dust, haze, storm mitigation. (Ankara Ministerial Declaration , 2010)

4.4 Regional Cooperation to Combat Sand And Dust Storms in Asia And The Pacific

The role of the United Nations development system in enhancing global and regional cooperation to combat sand and dust storms is mainly focused on preparedness and management of dust and sandstorms through the early warning systems and sharing information on climate and weather to predict and calculate sand and dust storms. In line with UN 2030 Agenda for Sustainable Development and United Nations Convention to Combat Desertification, the General Assembly based on

the report of the Second Committee (Second Committee, 2015) adopted resolution no. 70/195 on combating sand and dust storms on December 22, 2015 in which regional, sub-regional and interregional organizations encouraged to continue to share their best practices, experiences and technical expertise in combating dust and sandstorm. (General Assembly, 2015)

United Nations Economic and Social Commission for Asia and the Pacific recalling resolution no. 70/195 adopted resolution no. 72/7, which entitled "regional cooperation to combat sand and dust storms in Asia and the Pacific." According to this resolution, member States were invited to promote "their cooperation towards enhancement of necessary tools, projects and mechanisms aimed at facilitating needed measures, such as forecasting the likelihood of damaging sand-and dust-related events, data collection and knowledge-sharing, setting up monitoring systems and mitigating the adverse impacts of this phenomenon on the health of people, in particular people living on frontiers and in rural areas, in collaboration with related international, regional and sub-regional entities, including United Nations regional commissions, within their respective mandates and expertise." (Economic and Social Commission for Asia and the Pacific, 2016)

In its seventy-third session, the Economic and Social Commission for Asia and the Pacific published a report on the progress in the implementation of Commission resolutions including resolution no. 72/7. Accordingly, the continuation of the "efforts for the establishment of the Asian and Pacific Centre for the Development of Disaster Information Management as a subsidiary body of the Commission" was underlined. The report pointed out that, "at the 1st Governing Council meeting of the Centre, which was held in New Delhi on 2 November 2016, the Council approved the Centre's strategic plan and programme directions. It also approved the Centre's work plan for 2016-2017 and its programme of work for the biennium 2018-2019, which includes items on the enhancement of regional cooperation mechanisms that engage the member countries concerned to address sand and dust storms in partnership with UNEP, World Metrological Organization and the secretariat of the Convention on Combating

Desertification." (Economic and Social Commission for Asia and the Pacific, 2017)

5. Conclusion

The examination of the national and international legal systems shows that the sand and dust storms' phenomenon in comparison to other air pollutants is less considered. Several international documents have been adopted and developed through the last decades, some notable endeavors have been sought to protect air against various types of pollutants. However, looking at these documents and other international efforts suggests that they are mainly focused on pollutants rather than dust. This is despite the fact that today the most challenging problem in Iran is sand and dust storms, which are mostly formed in neighboring countries, and considerably affects Iran.

One of the most important problems facing the country in relation to the issue of dust is the lack of comprehensive and inclusive legislation regarding the preparedness and combat against dust phenomena. The Iranian government has taken various measures at the regional level to combat sand and dust storms. These efforts include bilateral and multilateral consultations, joint memorandum of cooperation with regional countries, convening regional meetings, and even enforcement of some actions in the territory of Iraq. The agreement on cooperation between Iran and Iraq in dealing with the phenomenon of dust is one of the most important bilateral agreements. In this context, there is a need to conclude a regional convention in which neighboring countries are obliged to implement contractual obligations in relation to the tackling and mitigating sand and dust storms. Therefore, the most important proposal is drafting a regional convention to prevent, control, and combat the phenomenon of dust based on the related experiences and achievements of Southeast Asian countries. The necessity of moving toward a convention on sand and dust storm is recommended in article 19 of the "regulation on preparedness and combat harmful effects of dust phenomena" (Cabinet Approvals, 2009) however it is merely and initially proposed as a regional plan. Bearing in mind the high possibility of exacerbating the occurrence of sand and dust storms in the future and the geographically involvement of Middle Eastern countries with this phenomenon, it is essentially important that

the regional states mobilize their efforts toward establishing a multilateral comprehensive convention between regional countries.

Given the lessons learned from similar crisis, such as Southeast Asian experiences, solving environmental problems requires regional cooperation. Moreover, although a number of customary commitments can be made by the countries regarding cooperation and combating sand and dust storms, the role of contractual obligations should not be neglected.

Legal solutions to combat the phenomenon of sand and dust storm:

- Accelerating and facilitating the implementation of the memorandums of

understanding between regional countries, which are in a similar situation and exposed to sand and dust storms, including Middle Eastern countries.

- The necessity of making legislative, judicial and administrative arrangement for the purpose of tackling sand and dust storms, including the proper implementation of policies to prohibit any changes in the functionality of forest ecosystems, especially wetlands and rivers.

- Drafting a multilateral agreement on regional cooperation to control and combat the phenomenon of dust.

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