



Hacettepe University Graduate School of Social Sciences  
Department of International Relations

**IRAN'S MOTIVATIONS FOR MAINTAINING ITS  
NUCLEAR PROGRAM**

Erdal BAYAR

Master's Thesis

Ankara, 2015



# **IRAN'S MOTIVATIONS FOR MAINTAINING ITS NUCLEAR PROGRAM**

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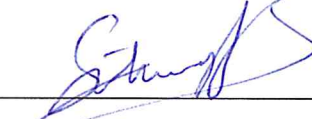
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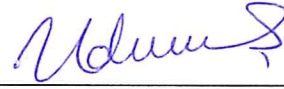
## KABUL VE ONAY

Erdal BAYAR tarafından hazırlanan "Iran's Motivations For Maintaining Its Nuclear Program" başlıklı bu çalışma, 19 Ocak 2015 tarihinde yapılan savunma sınavı sonucunda başarılı bulunarak jürimiz tarafından Yüksek Lisans Tezi olarak kabul edilmiştir.



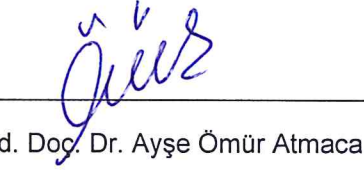
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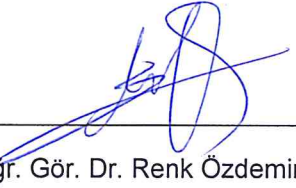
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Erdal BAYAR

## ÖZET

BAYAR, Erdal. İran'ın Nükleer Programını Sürdürmesindeki Motivasyonları, Yüksek Lisans Tezi, Ankara, 2015.

İran'ın nükleer programı, ülkenin nükleer faaliyetlerinin bir kısmının gizli olarak yürütüldüğünün ortaya çıkması sonrasında uluslararası bir mesele haline geldi. İran'ın nükleer program hakkında kaygılı devletler, İran'ı nükleer faaliyetlerden vazgeçirmek için yaptırım uygulamaya başladılar. İran, söz konusu yaptırım kararları nedeniyle özellikle ekonomik açıdan zarar görmesine rağmen nükleer faaliyetlerine devam etmektedir. Bu tez, İran'ın nükleer programını sürdürmesindeki motivasyonlarını açıklamaya çalışmaktadır. Bu amaçla, bu tezde nükleer silahların yayılmasının nedenlerini açıklamaya yönelik teorik yaklaşımlardan yararlanılmıştır. Bu çerçevede temel olarak Scott Sagan tarafından ortaya konulan sınıflandırma (Üç Model Yaklaşımı) kullanılmaktadır, çünkü bu konuda var olan tüm teorik yaklaşımları İran'ın nükleer programına uygulamak bu çalışmanın kapsamının ötesindedir. Güvenlik Modeli, İç Politika Modeli ve Norm Model, İran'ın nükleer faaliyetlerinin farklı boyutlarının anlaşılması için kullanışlı araçlar sunmaktadır. Zira İran'ın nükleer programını sadece güvenlik boyutu ile ele almak bu meselenin dar bir çerçevede değerlendirilmesine sebep olmaktadır. Bu tez, İran'ın nükleer programını sürdürmesinde iç politik yapısının (bilimsel, siyasi ve askeri aktörlerin) ve nükleer teknolojinin İranlılar açısından taşıdığı sembolik değer in önemli motive edici unsurlar olduğunu öne sürmektedir.

### **Key words**

Nükleer Silahların Yayılmasının Önlenmesi Antlaşması (NPT), Uluslararası Atom Enerjisi Ajansı (IAEA), Az Zenginleştirilmiş Uranyum (LEU), Yüksek Zenginleştirilmiş Uranyum (HEU), Ek Protokol, Nükleer Silahların Yayılmasının Önlenmesi

## ABSTRACT

BAYAR, Erdal. Iran's Motivations For Maintaining Its Nuclear Program, Master's Thesis, Ankara, 2015.

Iran's nuclear program has become an international issue after the emergence of the secret execution of a portion of its nuclear activities. Countries which were concerned about Iran's nuclear program began to implement sanctions to discourage Iran's nuclear activities. Although Iran harmed by sanction resolutions, particularly in terms of economy, continued its nuclear activities. This thesis is trying to explain Iran's motivations for maintaining its nuclear program. For this purpose, it has benefited from the theoretical approaches to explain the reasons for the proliferation of nuclear weapons in this thesis. Categorization that revealed by Scott Sagan(Three Models Approaches) is used; because applying all existing theoretical approaches to Iran's nuclear program is beyond the scope of this study. The Security Model, Domestic Politics Model and Norms Model provide useful tools for the understanding of different dimensions of Iran's nuclear activities because consideration of the Iran's nuclear program only with the security aspect, leads to the assessment of this issue in a narrow scope. This thesis argues that Iran's domestic political structure (scientific, political and military actors) and symbolic value of the nuclear technology in terms of the Iranians are significant motivating components for maintaining its nuclear program.

### **Key Words**

Non-Proliferation Treaty(NPT), International Atomic Energy Agency (IAEA), Low-enriched Uranium (LEU) ,Highly-enriched Uranium (HEU), Additional Protocol, Non-Proliferation

## TABLE OF CONTENTS

<b>KABUL VE ONAY</b> .....	<b>i</b>
<b>BİLDİRİM</b> .....	<b>ii</b>
<b>SUMMARY</b> .....	<b>iii</b>
<b>ABSTRACT</b> .....	<b>iv</b>
<b>TABLE OF CONTENTS</b> .....	<b>v</b>
<b>LIST OF TABLES</b> .....	<b>vii</b>
<b>LIST OF FIGURES</b> .....	<b>viii</b>
<b>LIST OF APPENDİCES</b> .....	<b>ix</b>
<b>LIST OF ABBREVIATIONS</b> .....	<b>x</b>
<b>INTRODUCTION</b> .....	<b>1</b>
<b>CHAPTER 1: NUCLEAR WEAPONS AND NUCLEAR PROLIFERATION</b> ...	<b>7</b>
<b>1.1: THEORIES ON NUCLEAR PROLIFERATION</b> .....	<b>7</b>
<b>1.2: NUCLEAR WEAPONS AND NUCLEAR ENERGY</b> .....	<b>18</b>
1.2.1: Basic of Nuclear Physics.....	<b>17</b>
1.2.2: Nuclear Energy.....	<b>22</b>
1.2.2.1: Nuclear Fuel Cycle.....	<b>26</b>
1.2.2.2: Nuclear Reactors.....	<b>30</b>
<b>1.3: THE NUCLEAR NONPROLIFERATION REGIME</b> .....	<b>34</b>
<b>CHAPTER 2: IRAN AND ITS NUCLEAR PROGRAM</b> .....	<b>48</b>
<b>2.1: IRAN</b> .....	<b>48</b>
2.1.1: A brief history of Iran.....	<b>50</b>
2.1.2: Social and Economic Structure of Iran.....	<b>56</b>
<b>2.2: IRAN’S NUCLEAR PROGRAM</b> .....	<b>62</b>
2.2.1: Origin of the Nuclear Program of Iran.....	<b>62</b>
2.2.2: After the Iranian Revolution.....	<b>66</b>
<b>2.3: PROCESS OF NUCLEAR ISSUE</b> .....	<b>68</b>
<b>CHAPTER 3: IMPLEMENTATION OF THE THREE MODEL APPROACH TO IRAN’S NUCLEAR PROGRAM</b> .....	<b>85</b>
<b>3.1: SECURITY MODEL</b> .....	<b>85</b>
3.1.1: The Concept of Deterrence.....	<b>86</b>
3.1.2: Iran’s Threat Perceptions.....	<b>88</b>



<b>3.2: DOMESTIC POLITICS MODEL</b> .....	<b>98</b>
3.2.1: Atomic Energy Organization of Iran (AEOI) .....	<b>99</b>
3.2.2: Islamic Revolution Guards Corps (IRGC).....	<b>103</b>
3.2.3: The President.....	<b>106</b>
3.2.4:The Supreme Council of National Security and the Islamic Consultative Assembly.....	<b>110</b>
3.2.5: The Supreme Leader.....	<b>112</b>
<b>3.3: NORMS MODEL</b> .....	<b>115</b>
3.3.1: Nuclear Myth and Nuclear Taboo.....	<b>115</b>
3.3.2: Views of the Iranian people and officials on the Nuclear Issue.....	<b>118</b>
3.3.3: Assessment.....	<b>122</b>
<b>CONCLUSION</b> .....	<b>128</b>
<b>BIBLIOGRAPHY</b> .....	<b>134</b>
<b>APPENDICES</b> .....	<b>158</b>

**LIST OF TABLES**

1. Explanatory Powers/Limitations of Existing Proliferation Theories.....	17
2. Operating modes of Nuclear Reactors.....	33
3. Proliferation Threat Perceptions; Individual States.....	93
4. Iran's Ballistic Missile Tests.....	96

## LIST OF FIGURES

1. Potential vs Actual Nuclear Proliferation.....	10
2. Nuclear Chain Reaction.....	20
3. Penetration of radiation.....	24
4. Nuclear Fuel Cycle.....	29
5. Types of Nuclear Reactors.....	31
6. Minorities in Iran.....	56
7. Growth of Nuclear related Scientific papers produced by Iran.....	101
8. Structure of Atomic Energy Agency of Iran.....	102
9. Iran’s National Security Establishment.....	106
10. Foreign Policy Decision Making Process in Iran .....	107
11. Authorities of the Leader of the Revolution.....	113
12. Iran’s 50.000 rials banknote.....	121
13. Types of Nuclear Fission Weapons.....	161
14. Nuclear Fusion.....	162
15. The Production of Tritium from Lithium Deuteride.....	162
16. The Hydrogen Bomb: Schematic.....	163

**LIST OF APPENDICES**

<b>Appendix 1:</b> Map of the Middle East showing US military locations in the region and the sites of Iranian nuclear facilities .....	158
<b>Appendix 2:</b> The United States and UN Sanctions Targeting Iran.....	159
<b>Appendix 3:</b> The first nuclear bombs: “Little Boy” and “Fat Man”.....	160
<b>Appendix 4:</b> Types of Nuclear Fission Weapons.....	161
<b>Appendix 5:</b> Nuclear Fusion and Nuclear Fusion-Based Weapons.....	162
<b>Appendix 6:</b> International Initiatives Supporting the Nonproliferation Regime.....	164
<b>Appendix 7:</b> Turnitin Originality Report.....	172
<b>Appendix 8:</b> Ethics Board Waiver Form For The Thesis Work.....	173

## LIST OF ABBREVIATIONS

- AEOI:** Atomic Energy Organization of Iran
- CIA:** Central Intelligence Agency
- EU:** European Union
- EU/3:** European Trio (United Kingdom, France and Germany)
- GAO:** Government Accountability Office
- HEU:** Highly enriched Uranium
- IAEA:** International Atomic Energy Agency
- IRGC:** Islamic Revolution Guardian Corps
- I.R.I:** Islamic Republic Of Iran
- JPA:** Joint Plan of Action
- LEU:** Low-enriched Uranium
- MAD:** Mutual Assured Destruction
- MI6:** Military Intelligence Section 6
- MW:** Megawatt
- NATO:** North Atlantic Treaty Organization
- NPT:** Non-Proliferation Treaty
- NWFZ:** Nuclear Weapon Free Zone
- P5+1:** Permanent members of UN Security Council + Germany
- UN:** United Nations
- UNSC:** United Nations Security Council
- U.S.:** The United States
- WMD:** Weapon of Mass Destruction
- WMDFZ:** Weapon of Mass Destruction Free Zone

## INTRODUCTION

Nuclear technology is double-sided. The first use of it was in nuclear weapons. Then peaceful uses of were promoted, one which is generation of power.<sup>1</sup> Due to this feature, some mechanisms have been established to regulate access to such sensitive technology so; states can take advantage of these technologies in a controlled manner.<sup>2</sup> However, it is difficult to argue that these control mechanisms provides flawless control over parties. For instance, in 1991, Iraq's non-compliance with its safeguards obligations and its nuclear-weapons-related activities has increased concerns about the adequacy of the existing comprehensive safeguard agreements (INFCIRC/153). Because according to this safeguard system the IAEA performs its audit activities under the assumption that the sates declare all relevant nuclear activities.<sup>3</sup> According to this traditional safeguards system, states have to fulfill its obligation to notify all its nuclear activities to the IAEA but this system does not provide ability to audit that may prevent them when they intend to produce nuclear weapons. Therefore, a new safeguard protocol (Additional Protocol)<sup>4</sup> was created, and it proposes more stringent control measures over parties. This was an important step in terms of strengthening the non-proliferation regime that continues to evolve and gain strength.

After it was revealed that Iran failed to report some of its' nuclear activities to the International Atomic Energy Agency, Iran's nuclear program has become an

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<sup>1</sup> “Dual-use items are goods, software and technology normally used for civilian purposes but which may have military applications, or may contribute to the proliferation of Weapons of Mass Destruction (WMD).” European Commission website, Dual-use controls, <<http://ec.europa.eu/trade/import-and-export-rules/export-from-eu/dual-use-controls/>>, [Access Date:15/11/2014]

<sup>2</sup> For a study that is criticizing this regime because of its creation of a nuclear apartheid. See: Shane J. Maddock, “Nuclear Apartheid: The Quest for American Supremacy from World War II to the Present”, University of North Carolina Press, 2010. This concept was used by Iran’s President Mahmoud Ahmedinejad in order to emphasize discrimination against Iran. See: Address by H.E. Dr. Mahmoud Ahmadinejad, President of the Islamic Republic of Iran, before the Sixtieth Session of the United Nations General Assembly, New York, 17 September 2005, <<http://www.un.org/webcast/ga/60/statements/iran050917eng.pdf>>, [Access Date:15/11/2014]

<sup>3</sup> Oliver Meier, “Fulfilling the NPT Strengthened Nuclear Safeguards” VERTIC Briefing Paper, April 200, p.4, <[http://www.vertic.org/media/Archived\\_Publications/Briefing\\_Papers/Briefing\\_Paper\\_00\\_2.pdf](http://www.vertic.org/media/Archived_Publications/Briefing_Papers/Briefing_Paper_00_2.pdf)>, [Access Date:29/01/2015]

<sup>4</sup> The Additional Protocol (93+2) increases the power of the IAEA and the responsibilities of the NPT parties. For a useful summary, See: Daryl Kimball and Kelsey Davenport, “The 1997 IAEA Additional Protocol At a Glance”, Arms Control Association, Updated: February 2014, <<https://www.armscontrol.org/factsheets/IAEAProtoco>>, [Access Date:18/11/2014]

international concern. The International community concerned about Iran's nuclear program imposed sanctions to discourage Iran's nuclear activities. Although Iran was harmed by sanction resolutions, it continued to its nuclear activities. This thesis is trying to explain the motivations of Iran for maintaining its nuclear program.

Iran began its nuclear activities in 1957 through an alliance with the United States during the Mohammad Reza Shah era till 1979. The first nuclear power plants in Iran were initiated by Germany and France in 1974.<sup>5</sup> After the Islamic Revolution, these nuclear power plant construction projects could not be completed. Iraq attacked Islamic Republic of Iran in 1980, and a war began between the two countries. Iranian leaders decided to restart nuclear activities while the war was continuing. In January 1995, Iran and Russia signed a contract to complete construction of the reactors at Bushehr.<sup>6</sup> Thus, Russia, which has advanced nuclear technology, provided substantial support to Iran's nuclear activities.

In 2002, a member of the People's Mojahedin Organization of Iran (MeK, PMOI, or MKO), Ali Reza Jafarzadeh disclosed the existence of Iran's nuclear facilities which were not declared to the IAEA<sup>7</sup> (International Atomic Energy Agency).<sup>8</sup> From this date, Iran's nuclear program acquired an international dimension and has become one of the most significant current international issues. Iran negotiate have with EU/3 (United Kingdom, France and Germany) countries in 2003, then the group of P5+1 (Permanent members of UN Security Council + Germany) became one of the parties to the negotiation process in 2006.<sup>9</sup> On the other hand, the United States emphasized the military intervention option. Although this bumpy process gained a positive appearance, considerable progress should be made for the final solution since

<sup>5</sup> In 1974, the German company Kraftwerk Union began to build nuclear power plant in Bushehr (بوشهر). In the same year Iran and France signed an agreement for the establishment of a nuclear power plant in Bandar Abbas (شهرستان بندرعباس). Ersoy Önder, "Iran'ın Nükleer Programının Analizi ve Türkiye: ilişkiler, yaklaşımlar ve gelişmeler", IQ Kültür Sanat Yayıncılık, İstanbul, 2013, p.93 Also; Andrew Koch, Jeanette Wolf, "Iran's Nuclear Facilities: a Profile", Center for Nonproliferation Studies, 1998, p.1 <<http://cns.miis.edu/reports/pdfs/iranrpt.pdf>>, [Access Date:14/11/2014]

<sup>6</sup> Andrew Koch, Jeanette Wolf, "Iran's Nuclear Facilities: a Profile", Center for Nonproliferation Studies, 1998, p.1 <<http://cns.miis.edu/reports/pdfs/iranrpt.pdf>>, [Access Date:14/11/2014]

<sup>7</sup> "Agency" will be used as the abbreviated name of this institution.

<sup>8</sup> Mustafa Kibaroglu, "Good for Shah, Banned for the Mullahs: The West and Iran's Quest for Nuclear Power". *Middle East Journal*, vol. 60, no:2, 2006, p.207

<sup>9</sup> It can be seen as a triumph of diplomacy if Iran and P5+1 reach an agreement through negotiations. Actually, this issue is not just about Iran as Adam Mount argued. "Reaching a deal will not only restrain Iranian nuclear program, but could help restrain others in the future" Adam Mount, "P5+1 Talks Are Not (Just) about Iran", *The National Interest*, December 8, 2014, <<http://nationalinterest.org/feature/p5-1-talks-are-not-just-about-iran-11806?page=2>>, [Access Date:08/12/2014]

military option on Iran has not been removed from the table completely.<sup>10</sup> This possibility constitutes a significant risk to the security of the Middle East. A possible military intervention on Iran would lead to more serious problems than the interventions in Afghanistan and Iraq.<sup>11</sup>

The aim of this thesis is answering the following question about Iran's Nuclear Program.

*What are the motivations of Iran for having and maintaining Iranian its nuclear program?*

Answer of this question is important for the solution of the nuclear issue because understanding each other is necessary to reach a solution. The parties, particularly parties from different cultures, should empathize with each other for the progress of the negotiations. Knowledge about the motivations of the parties will be useful in determining the policy to be applied to the solution of the issue.

These sub-questions will be helpful to better understanding of motivations of Iran for maintaining its nuclear program.

What is the effect of Iran's socio-cultural and religious structure on Iran's Nuclear Program?

What is the role of scientific institutions and bureaucratic actors on Iran's Nuclear Program?

What is the significance of nuclear program for Iranian people?

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<sup>10</sup> Joe Siegel, "Obama assures Israel that a military option on Iran remains on the table", New York Daily News, September 30, 2013, <<http://www.nydailynews.com/news/politics/obama-assures-israel-military-option-iran-table-article-1.1472246>>, [Access Date:15/11/2014]

<sup>11</sup> There are serious discussions on the possibility of war with Iran. Also there is discussion among the academists. For instance, a debate on military action which occurred in 2012; Matthew Kroenig, "Time to Attack Iran: Why a Strike is the least bad option", Foreign Affairs, January/February 2012, vol. 91, no.1 and Colin H. Kahl, "Not Time to Attack Iran: Why War Should be a Last Resort", Foreign Affairs, March/April 2012, vol.91, Issue 2, pp.166-173



This thesis is structured as follows: The first chapter of this study aims to establish a background on nuclear proliferation/nonproliferation, nuclear energy and nuclear weapons. First of all, theories on nuclear proliferation will be introduced briefly. These theories will help to explain or understand the main reasons for motivations of states to proliferate. In this section of the study, theories on nuclear proliferation will be given briefly. Then, the characteristics of nuclear energy will be addressed. Brief information will be given about the generation of nuclear energy and the operating mechanisms of nuclear weapons for understanding the issues that are at the center of discussions and negotiations. In order to understand why Iran's nuclear program turned into an international issue, brief information about the formation and elements of the nuclear non-proliferation regime will be given.

In the first part of the second chapter, the history of Iran will be mentioned shortly. Then, the economic and social structure of Iran will be introduced, because it provides important tools to understand Iranian domestic and foreign policies. The second chapter of this study will focus on the history of Iran's nuclear program. The Islamic Revolution has led to a break in Iranian-Western relations. Cooperation in the field of nuclear technology has disappeared because of this break. After the Islamic Revolution, relations with the West (especially the United States) have shaped Iran's nuclear program. For this reason, historical background of the nuclear program will constitute the whole of this chapter. The development of the negotiation process will be addressed in this context.

The third chapter of this thesis will examine Iran's nuclear activities within the framework of international relations theories which focus on nuclear proliferation, but we will not benefit from a single theoretical approach because a single theory is not sufficiently descriptive for Iran's nuclear program. Realist and Neo-Realist perspectives do not provide a sufficient space of understanding needed to answer the guiding questions provided above. Therefore, the domestic politics which Realism ignores should be taken into account. To ensure this, domestic structure of the Islamic Republic of Iran will be looked at in this study. Also, symbolic meaning of the nuclear program taken from the Iranian viewpoint, which is ignored by the realist approach, is an important factor in understanding public support for the nuclear program. In short, Iran's nuclear program is not just a political issue; it has political, military, economic,

cultural, historical and religious dimensions. It does not seem possible to examine in depth all these dimensions in a master's thesis, so this study will take advantage of theoretical approaches which aim to explain nuclear proliferation. Each individual theory focuses on certain points of nuclear proliferation while ignoring other dimensions of the issue and this situation leads to a lack of explanatory power. To avoid this, this study will be based on Scott Sagan's "three models approach" which offers a more comprehensive framework. In the third chapter of this study, Iran's nuclear program will be examined using three models. The "security model", which argues that states tend to acquire nuclear weapons due to security concerns, will be useful to interpret Iran's threat perception. In the first part of this chapter, Iran's security policy will be examined, and we will focus on the security concerns that might lead Iran to obtaining nuclear weapons. In the second part of the third chapter the "domestic politics model", which focuses on the main domestic actors who may be influential in the decision to develop nuclear weapons, will be used in order to analyze the impact of the domestic political structure on Iran's nuclear program. In the last part, we will focus on the symbolic meanings of nuclear technology/weapons taken from the Iranians' viewpoints. While doing this, the "norms model" will provide us a useful tool.

The thesis will make a textual analysis of the data from primary sources related to the subject such as official statements, resolutions and reports published by government agencies, UNSC decisions, IAEA's official documents, etc., as well as from secondary sources like newspaper reports, books, articles, encyclopedias and internet resource. Also many figures and tables will be used in order to illustrate better and for avoiding excessive detailing of the subject.

The sources used were predominantly written in English, because English is the dominant language in the discipline of International Relations. Also most of the Iranian scientists have written their books and articles in English. Farsi (or Persian) and Turkish sources constitute a comparatively a small part of this study. Although there is a large amount of literature on nuclear technology and Iran's nuclear program, it is not possible to find concrete data because countries tend not to share information about their nuclear programs. Information regarding the contents of nuclear programs is classified as "sensitive information". This is one of the major limitations of this study. Also the nuclear dispute has not been finalized yet, so, the continually expanding literature on the

dispute makes it impossible to follow. And it is difficult to opine on a process that has not reached its conclusion. These factors make it difficult to write the thesis on this issue, and the multidimensionality of Iran's nuclear program also makes reaching a definite conclusion difficult.

There is many masters' thesis written on nuclear program of Iran. Most of these theses have been prepared on the basis of a single theory or approach. A limited number of theses offer a combination of different approaches, but these theses do not include technical dimension of nuclear energy/technology and nuclear nonproliferation regime enough. Also, the sources used in these studies usually reflect the views of the United States.

## **CHAPTER I: NUCLEAR WEAPONS AND NUCLEAR PROLIFERATION**

In this part of the thesis nuclear weapons and causes of the spread of these weapons will be discussed. For this purpose, firstly, theories and approaches on the nuclear proliferation will be examined, because different scientific approaches will facilitate the understanding of this issue. Afterward, some technical details will be given about the structure of nuclear weapons and methods of obtaining nuclear energy in order to understand some technical aspects of nuclear program of Iran. In the last part of this chapter, efforts on preventing nuclear proliferation and nuclear non-proliferation regime will be discussed. Since having knowledge on this subject will be useful to understand the international law aspects of the dispute.

### **1.1: THEORIES ON NUCLEAR PROLIFERATION**

Proliferation refers to the spread or an increase in number. There are two types of proliferation: “vertical proliferation” and “horizontal proliferation”. Vertical proliferation refers to an arms race between superpowers. The United States and the Soviet Union had tens of thousands of nuclear warheads.<sup>12</sup> Although the number of nuclear warheads has reduced as result of arm reduction treaties between superpowers (START I, START II), increasing destructive power of warheads indicates the presence of vertical proliferation.<sup>[13][14]</sup> After the first atomic bomb detonated by the United States in 1945, the Soviet Union became the second state to possess nuclear weapons in

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<sup>12</sup> George A. Lopez and Nancy J. Myers(Eds.), “Peace and Security: The Next Generation”, Rowman & Littlefield Publishers, Oxford, 1997, p.8 and p.50

<sup>13</sup> For instance, the largest nuclear test conducted by the Soviet Union yielded 58 Mt (Megaton) of TNT destructive power which is 4296 times larger than the bomb dropped on Hiroshima. Horizontal proliferation means the spread of nuclear weapons to new countries that do not now have this type of weapon. George, Bunn, “Horizontal Proliferation of Nuclear Weapons”, The Dunellen Company, Inc., New York, 1970, pp.29 in Ed. By Bennett, Boskey, and Mason Willrich,,” Nuclear Proliferation: Prospects for Control”.

<sup>14</sup> William Epstein, “The Global Politics of Arms Control”, W. H. Freeman and Company, San Francisco, 1979, pp.183 in “Progress in Arms Control?”

1949. Following these two countries, the United Kingdom (1952), France (1960) and China (1964) have become nuclear weapon states.<sup>15</sup>

First of all, there is no definite answer to the question “why do states proliferate?” Although some significant contributions have been provided in answering this question, various limitations and difficulties make it impossible to achieve a precise answer. Several of these limitations and challenges are as follows; lack of access to adequate information on such sensitive issues, the problem of reliability of official sources, methodological problems caused by the lack of concrete data, etc.<sup>16</sup> Despite all these and similar problems, according to some scholars, the answer is quite clear: “*States acquire nuclear weapons to increase their security in an anarchical world.*”<sup>17</sup> But this claim was more meaningful in the conditions of its time.<sup>18</sup> The phenomenon of nuclear proliferation has not been fully explained. There are many theories on this phenomenon, but none of them explains the issue perfect. This situation is quite normal, because modeling and theorizing requires simplification and each simplification means some elements of the issue are ignored. Therefore, the explanatory power of the theories is relative; each theory of nuclear proliferation has strengths and weaknesses.<sup>19</sup>

According to Ogilvie-White, there are two main classes of hypotheses which constitute the greatest weight of studies in this issue: first class of hypotheses assumes that “*nuclear technology itself is the main driving force behind nuclear proliferation...*”. According to this class, achieving enough level of technology to produce nuclear weapons automatically result in obtaining nuclear weapons.<sup>20</sup>

And for the second class of hypotheses motivations of states are essential to understanding the dynamics of nuclear proliferation.<sup>21</sup> Jacques E. C. Hymans argues that there are two theoretical camps on the question of proliferation dynamics: “Realist”

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<sup>15</sup> These countries have gained legal status as “Nuclear Weapon States” by the Treaty on the Non-Proliferation of Nuclear Weapons. George A. Lopez and Nancy J. Myers(Eds.), op. cit. p.53

<sup>16</sup> Tanya, Ogilvie-White.“Is There a Theory of Nuclear Proliferation? An Analysis of the Contemporary Debate”, *The Nonproliferation Review*, Fall 1996, pp.43 <<http://cns.miis.edu/npr/pdfs/ogilvi41.pdf>> [Access Date:21/09/2014]

<sup>17</sup> Bradley A. Thayer, “Nuclear Weapons as a Faustian Bargain”, *Security Studies*, Vol.5 (Autumn 1995) p.150 cited in Tanya Ogilvie-White, “Is There Theory of Nuclear Proliferation? An Analysis of the Contemporary Debate”, *The Nonproliferation Review*, Fall 1996, p.44

<sup>18</sup> Pakistan and North Korea have not acquired nuclear weapons yet in 1995. Iran’s nuclear program has not become a crisis.

<sup>19</sup> For a descriptive comparison of proliferation theories, See. Figure 1 in Tanya, Ogilvie-White, p.55

<sup>20</sup> Tanya, Ogilvie-White, p.44

<sup>21</sup> Ibid.

view and “Idealist” view. The realist view focuses on states’ security demands in the international anarchical system. In this view, nuclear weapons are an important tool to deter potential attackers. On the other hand, according to the “idealist” view, states tend to acquire nuclear weapons because of their utility and of its symbolism.<sup>22</sup> Scott D. Sagan suggests a more comprehensive classification than Hymans’. Sagan examined the issue of nuclear proliferation by using three theoretical frameworks (models); “the security model” corresponds to the “realist” way of thinking, “the norms model” is similar to the “idealist” viewpoint, and “the domestic politics model” which was ignored by Hymans.<sup>23</sup>

Realist approaches<sup>24</sup> (Classical Realism and Neo-Classical Realism) dominated thinking on nuclear proliferation.<sup>25</sup> Because realist approach provides convincing reasons to explain the obtaining weapons of mass destruction. Also there was limited knowledge about states’ security decision-making during the Cold War, so realist approach which left domestic issues out of the analysis, could remain convincing explanation for nuclear proliferation.<sup>26</sup>

According to the classical realist approach, states are unitary actors that seek to maximize their power in order to survive in an anarchical<sup>27</sup> international system. In this environment where there is not a higher authority, acquiring a nuclear weapon should be considered rational behavior since it is intended to protect states’ interests and the most vital interest of a state is security. Providing security is indispensable for a state’s survival.<sup>28</sup> States cannot be sure about the intentions of the other states, so they need to provide their security by themselves. According to traditional/realist security concept there is also no distinction between the security of the state and individuals or groups. Additionally, such an approach mentions that the state is the most important object that

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<sup>22</sup> Jacques, E. C. Hymans., “Theories of Nuclear Proliferation: The State of the Field”, *The Nonproliferation Review*, Vol. 13, Issue 3, 2006, p.455

<sup>23</sup> Sagan, D. Scott., “Why do States Build Nuclear Weapons?-Three Models in Search of a Bomb”, *International Security*, Vol. 21, No.3, pp.63-64

<sup>24</sup> Sagan entitles these approaches as “the Security Model”, Hymans refers to the “Realist view”.

<sup>25</sup> Tanya, Ogilvie-White, p.44, Jacques, E. C. Hymans., pp.455-456

<sup>26</sup> Tanya, Ogilvie-White, p.44

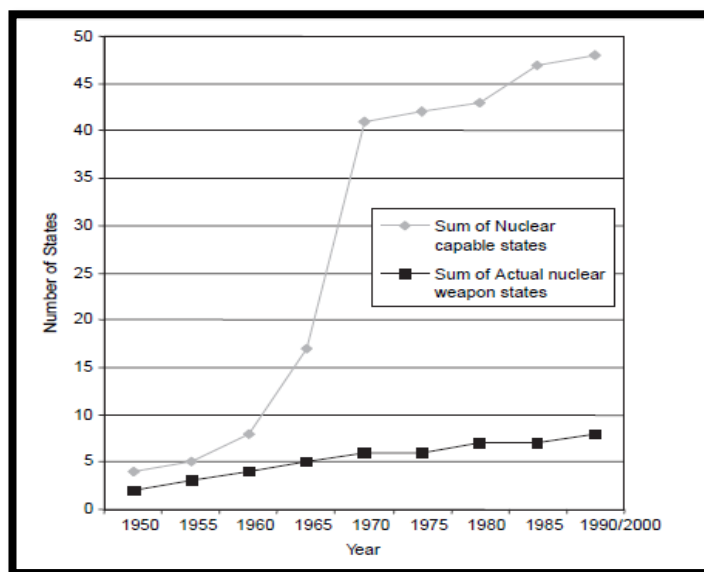
<sup>27</sup> Anarchy does not mean chaos or disorder. It refers to a system where sovereignty of the states is the principle, and there is no higher authority over the states. John J. Mearsheimer, “Structural Realism” in (Ed.)Tim Dunne, Milja Kurki, Steve Smith, “International Relations Theories: Discipline and Diversity”, Oxford University Press, New York, 2007, p.73

<sup>28</sup> Ibid. pp.44-45

should be protected. In sum state is the “referent object” for the realist view.<sup>29</sup> On the other hand, critical security studies argue that security should be evaluated in a more comprehensive manner and human beings should be included in the analysis.<sup>30</sup>

The view of classical realist approach to nuclear proliferation is over-simplistic and security-oriented; therefore, it is limited to explain the phenomenon of nuclear proliferation. For instance, figure 1 clearly shows us that the majority of potential nuclear weapon states did not choose possession of such weapons. In a state of nature, states faced with existential threats should acquire nuclear weapons to ensure their own security, but the actual situation is quite different, only one-fifth of the potential states capable of nuclear weapons have actually developed nuclear bombs.<sup>31</sup> It could be argued that proliferation of nuclear weapons is not inevitable. In short, realist approach provides some explanation for nuclear proliferation, but it is inadequate in many respects.

**Figure 1:** Potential vs. Actual Nuclear Proliferation



**Source:** Jacques, E. C. Hymans, *Theories of Nuclear Proliferation: The State of the Field*, p.457

The Structural Realist (Neo-Realist) approach concurs in many assumptions of the classical realist view. According to structural realism, in analogy to classical realist view, states are unitary and rational actors which are situated in an anarchical

<sup>29</sup> David Mutimer, “Critical Security Studies: A Schismatic History”, p.86, in Alan Collins (Ed.), “Contemporary Security Studies”, Oxford University Press, New York, 2010, Second Edition.

<sup>30</sup> Ibid. p.89

<sup>31</sup> Jacques E. C. Hymans, op. cit. pp. 456-457

international system. Survival is the main objective of state, as claimed by classical realists. It is not possible to have precise information about the intentions of other countries.<sup>32</sup> The distinguishing feature of structural realism is the claim of that the international system's structure (unipolar, bipolar or multipolar) has a decisive role on the behavior of states.<sup>33</sup> Another assumption of structural realism is that each states, more or less, has offensive military capability that could harm its rivals or neighbors.<sup>34</sup>

The Neo-Realist approach uses deterrence theory in order to explain the spread of nuclear weapons. According to Kenneth N. Waltz, MAD (mutual assured destruction) reduces the probability of an outbreak of war between two nuclear powers.<sup>35</sup> Therefore, many states that want to ensure their survival will try to acquire nuclear weapons, and this will make proliferation irresistible.<sup>36</sup> These inferences of the neorealist approach were accused of being static and ethnocentric.<sup>37</sup> Because according to neo-realist perspective change is only possible with the elimination of the anarchic structure of the international arena. Critical theorists do not accept the unchanging world idea, so they argue that "*the theory should be directed towards understanding the possibilities for change and how to exploit possibilities for change...*".<sup>38</sup> Therefore the concept of "emancipation" is situated in the center of the critical security studies.<sup>39</sup> Unlike traditional security concept that represents the realist-neorealist approach Critical Security Studies analyzed the security concept from a wide frame and add many different topics which concerns humanity are discussed in the security concept.<sup>40</sup>

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<sup>32</sup> John J. Mearsheimer, op. cit.73-74

<sup>33</sup> Kenneth N. Waltz, "Theory of International Relations", Addison-Wesley Publishing Company, California, 1979, pp.40-42

<sup>34</sup> Tanya, Ogilvie-White, p.46

<sup>35</sup> Tanya, Ogilvie-White, p.45, Kenneth N. Waltz, "Nuclear Myths and Political Realities", *American Political Science Review*, Volume 84, no:3(September 1990), pp.732-733

<sup>36</sup> Ibid.

<sup>37</sup> "Ethnocentric" indicates that the othering discourse such as creating "us" and them, friend and foe. Ken Booth, "Security and Emancipation", *Review of International Studies*, Vol.17, No.4 (October 1991), p.322

<sup>38</sup> Jill Steans, Lloyd Pettiford, Thomas Diez...et. al.(Eds), "An Introduction to International Relations Theory: Perspectives and Themes", Pearson Education Limited, London, 2010(Third Edition), p.124

<sup>39</sup> Bilal Karabulut, "Güvenlik: Küreselleşme Sürecinde Güvenliği Yeniden Düşünmek", Barış Kitabevi, Ankara, 2011, p.77

<sup>40</sup> Ibid. p.26, and Jill Steans, et al. op. cit. p.125,



Kenneth N. Waltz argues that the spread of nuclear weapons will be useful for peace and international stability<sup>41</sup>. Since it is difficult to predict outcomes of war with conventional weapons, and state leaders may decide waging war has a bearable cost.<sup>42</sup> This claim was simple and impressive for scholars especially during the Cold War, but rational deterrence theory contains many elements which may be criticized. First of all, the concept of deterrence was the central security concept of the Cold War but this concept is not useful in the explaining the post Cold War security concept and policy.<sup>43</sup>

Also rational deterrence is meaningful only in inter-state relations, but in security issues such as terrorist attacks, ethnic discrimination, environmental threats, etc. being nuclear power is not deterrent.<sup>44</sup>

Realist assumption of the state as a unitary rational actor is not only one possibility.<sup>45</sup> Waltz also refers to the decision-making of military leaders to contribute to his arguments, yet this situation leads to an analytic problem, because according to the realist approach, the state is unitary actor, so individuals and organizations should remain outside of the analysis.<sup>46</sup>

Classical realist and neo-realist approaches are inadequate in order to explain the causes of nuclear proliferation, because these approaches do not offer a detailed analysis to understand this multidimensional phenomenon.<sup>47</sup> According to Ogilvie-White states have multiple and interrelated goals but realist approaches overlook this case.<sup>48</sup>

According to Scott Sagan, the domestic politics model constitutes one of the important dimensions of nuclear proliferation.<sup>49</sup> Ogilvie-White refers to Mitchell Reiss's *Without the Bomb: The Politics of Nuclear Proliferation*, who points out the

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<sup>41</sup> Kenneth N. Waltz, "The Spread of Nuclear Weapons: More May Better", Adelphi Papers, number 171, London: International Institute for Strategic Studies, 1981 <[http://polsci.colorado.edu/sites/default/files/10B\\_Waltz.pdf](http://polsci.colorado.edu/sites/default/files/10B_Waltz.pdf)> [Access Date:17/10/2014] For a contrary opinion, See. Scott D. Sagan, "More will be Worse", in Scott D. Sagan, Kenneth N. Waltz, "The Spread of Nuclear Weapons: A Debate Renewed", W.W. Norton & Company, 2 nd Edition, 2003

<sup>42</sup> Kenneth N. Waltz, pp.734

<sup>43</sup> George A. Lopez and Nancy J. Myers(Eds.), "Peace and Security: The Next Generation", Rowman & Littlefield Publishers, Oxford, 1997, p.51

<sup>44</sup> Bilal Karabulut, "Güvenlik: Küreselleşme Sürecinde Güvenliği Yeniden Düşünmek", Barış Kitabevi, Ankara, 2011, p.15

<sup>45</sup> Scott D. Sagan, "Perils of Proliferation: Organization Theory, Deterrence Theory, and the Spread of Nuclear Weapons", *International Security*, Vol. 18, no:4(Spring, 1994), pp.69-70

<sup>46</sup> Tanya, Ogilvie-White, op. cit. pp.45

<sup>47</sup> Ibid. pp.48

<sup>48</sup> Ibid. pp.48

<sup>49</sup> Sagan, D. Scott., "Why do States Build Nuclear Weapons?-Three Models in Search of a Bomb", *International Security*, Vol. 21, No.3, pp.63-64

role of “domestic pressures”<sup>50</sup> in developing nuclear weapons. For him, motivations for and against acquiring nuclear weapons are not suitable for generalization because of their variable structure. Different states may want to have nuclear weapons with divergent motivations.<sup>51</sup>

Neo-liberal institutionalists<sup>52</sup> take into account the internal characteristics of a state in order to explain policies towards nuclear armament. In this way, contrary to classical realists’ and neo-realists’ approaches, neoliberal institutionalists argue that domestic and foreign policies are not completely separate from each other.<sup>53</sup> Tanya Ogilvie refers to Etel Solingen who affirms that liberal democratic states may decide not to produce nuclear weapons because they consider them inimical to their interests.<sup>54</sup> Glenn Chafetz states this classification in another way: between core states and periphery states. Core states refer to liberal democracies. These democratic states constitute shared values and norms which enable international cooperation. Periphery states are devoid of shared values and norms, which is they are prone to arms racing.<sup>55</sup> Stephen M. Meyer examined the motivational basis of nuclear proliferation in detail and found “...three basic categories of incentives: international political power/prestige incentives, military/security incentives, and domestic political incentives.”<sup>56</sup> All these incentives and motivations have an effect, directly or indirectly, on the domestic decision-making process. Thus all the varying motives conditions are taken into

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<sup>50</sup> Mitchell Reiss, “Without the Bomb: The Politics of Nuclear Proliferation”, Columbia University Press, New York, 1988, in Tanya Ogilvie White, op. cit. p.48. Such as the opposition of political elites and environmentalists, cost of nuclear weapons, international restraints and sanctions, etc. Tanya Ogilvie White, op. cit. p.48

<sup>51</sup> Ibid. pp.48-49

<sup>52</sup> Neo-Liberalism focuses on the role of international organizations and institutions in international relations. This theoretical approach claims that there are some other actors (international organizations and institutions), in addition to states, in the international arena. The “state” is not the only unit of analysis in the field of international relations. Lisa L. Martin, “Neoliberalism”, in (Ed.)Tim Dunne, Milja Kurki, Steve Smith, “International Relations Theories: Discipline and Diversity”, Oxford University Press, New York, 2007, pp.110-111

<sup>53</sup> Tanya Ogilvie White, op. cit. p.49

<sup>54</sup> Ibid.

<sup>55</sup> Ibid. This assertion is open to debate and there are different views on correlation between states’ regime type and nuclear proliferation. Some authors argue that democracies and autocracies are similar in terms of nuclear proliferation behaviors. Even democratic states are more prone to acquisition of nuclear arsenals. For more information, See; Scott D. Sagan, “The Causes of Nuclear Weapons Proliferations”, *The Annual Review of Political Science*, 2011, Volume 14, pp. 236-238, for an opposing view, See. Cristopher Way, Jessica Weeks, “Making it Personal: Regime type and Nuclear Proliferation”, July 2012, <<http://falcon.arts.cornell.edu/jlw338/WayWeeksNukes.pdf>> [Access Date:18/10/2014]

<sup>56</sup> Stephen M. Meyer, “The Dynamics of Nuclear Proliferation”, The University of Chicago Press, 1984, p.46

consideration while determining a policy decision.<sup>57</sup> Meyer argued that “...*the pivotal point in the nuclear proliferation process is the decision to pursue nuclear weapons acquisition-not having the first weapon actually in the hand.*”<sup>58</sup>

The decision of nuclear proliferation does not occur suddenly, it is a staged process. According to Meyer, there are three stages of this process. The first stage is a government decision to build a *latent capacity*. Then the second stage is a *capability decision* that refers to a transformation of latent capacity into operational capability.<sup>59</sup> And the third stage is the decision to start a nuclear weapons program.<sup>60</sup> Meyer’s approach emphasizes the importance of domestic political decision-making in terms of nuclear proliferation. Meyer acknowledges that states act rationally, but this assumption is not always valid. Graham Allison developed a model to explain why states act irrational sometimes. According to him, irrational acts of states arise from conflicts of interest and conflicting priorities among rational but self-interested intrastate actors.<sup>61</sup> This model (Bureaucratic Politics Model) made an important contribution to the nuclear proliferation puzzle by revealing the significant role of bureaucrats and organizations involved in the nuclear decision-making process.

Scott Sagan offers an organizational perspective instead of Classical Realist and Neo-Realist assumptions. He argues that organization theory has more explanatory power, in consequences of nuclear proliferation, than realist approaches.<sup>62</sup> Although government leaders intend to act rationally, domestic organizational actors are affecting their decisions. According to Organization Theory, there are two general themes in explaining the main obstacles to purely rational actions in organizations. “*First, large organizations function within a severely "bounded" form of rationality.*”<sup>63</sup> Organizations (especially large organizations) develop standard procedures and organizational rules to ensure coordinated action between different units. Individual decisions and objectives are less important in terms of organization. Organizations,

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<sup>57</sup> Ibid. pp.47

<sup>58</sup> Ibid. pp. 5

<sup>59</sup> “A capability decision in the absence of a proliferation decision reflects developing “a nuclear option”, enhancing a nuclear option, and keeping a nuclear option open.” Ibid. pp.5

<sup>60</sup> Ibid. pp.5-6, Tanya Ogilvie White, op. cit. pp.50

<sup>61</sup> Tanya Ogilvie White, op. cit. pp.50

<sup>62</sup> Scott D. Sagan, “Perils of Proliferation: Organization Theory, Deterrence Theory, and the Spread of Nuclear Weapons”, *International Security*, Vol. 18, no:4(Spring, 1994), pp.71

<sup>63</sup> Ibid.

unlike individuals, are not persistent about utility maximization in general.<sup>64</sup> Scott Sagan claims that organizations, frequently, do not have a broad perspective because they only focus on specific areas.<sup>65</sup>

According to the second theme, complex organizations may assemble conflicting goals. Identification of targets and implementation process is often political.<sup>66</sup> The organizational perspective provides an opportunity to notice the influence of sub-state organizations on the nuclear decision making process. By this means, it can help explain nuclear proliferation dynamics.<sup>67</sup> However, this theory has some shortcomings. Firstly, the role and influence of individuals are underestimated in this theory. Second, individuals and organizations can-not take lessons from the past, and the process is closed to change and development. These assumptions make theory over-deterministic and pessimistic about nonproliferation.<sup>68</sup>

Cognitive and psychological approaches aim to fill the void that remains behind by the aforementioned theories. There are two main assumptions made by cognitive approaches on foreign policy. First, policy-makers are exposed to an intensive information inflow from the international environment. This information is not completely reliable and some of it is imperfect, so policy-makers often have missing or incorrect information about the intentions and capacities of other states. Additionally, intense stress and time pressure, particularly in times of crisis, make it difficult to identify the best solutions for decision makers.<sup>69</sup> In these situations policy-makers or leaders often act irrationally.<sup>70</sup>

Second, Policy-makers has a limited capacity to deal with complex and uncertain situations.<sup>71</sup> According to this approach, policy-makers use simplified images of the environment in order to act rationally among various and complex policy options. Philip Tetlock and Charles McGuire claim that there are two basic kinds of cognitive strategies:

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<sup>64</sup> Ibid. pp.71-72

<sup>65</sup> Ibid.

<sup>66</sup> Ibid. pp. 72

<sup>67</sup> Tanya Ogilvie White, op. cit. pp.51

<sup>68</sup> Ibid.

<sup>69</sup> Philip E. Tetlock, Charles McGuire Jr., "Cognitive Perspectives on Foreign Policy", pp.149-150, in "*Political Behavior Annual*", Vol. 1, Samuel Long(Ed.), CO: Westview Press, 1986

<sup>70</sup> Tanya Ogilvie White, op. cit. pp.52

<sup>71</sup> Ibid.

- (1) reliance on knowledge structures based on past experience that provide frameworks for assimilating new information and choosing among policy options (belief systems, operational codes, cognitive maps, scripts);
- (2) reliance on low-effort judgmental and choice heuristics that permit policy-makers to make up their minds quickly and with confidence in the correctness of their positions (e.g., “satisfying” decision rules, the availability, representativeness, and anchoring heuristics).<sup>72</sup>

Cognitive and psychological approaches are useful in explaining the irrational behavior of decision-makers, but it is insufficient in explaining similar beliefs of groups about certain issues.<sup>73</sup> Also, a consensus has not been achieved in this approach. It is controversial which cognitive variables in what manner influence foreign policy.<sup>74</sup> Difficulty in measuring cognitive variables remains as a big problem.<sup>75</sup>

Peter Lavoy proposes a model, the myth-making model, in order to explain role of political elites in nuclear proliferation. According to him, political elites who want a state with nuclear weapons, put the country's security issues to the forefront and benefit from nuclear myths.<sup>76</sup> Lavoy argues that there is another myth in the face of these myths which is espoused by some bureaucrats and scientists, nuclear insecurity myths.<sup>77</sup> Thus, this model could provide an explanation for both the spread of nuclear weapons and nonproliferation. However, the static structure of myth-maker model stands out as a shortcoming.

Another approach to understanding the causes of the proliferation of nuclear weapons is the Social Construction of Technology (SCOT). This theory focuses on the role of technological developments in nuclear proliferation. According to the SCOT theory cultural and psychological factors should be included in the analysis and nuclear proliferation should be considered in a narrow rational framework.<sup>78</sup>

This theory takes into account many factors. Although this feature contributes to the explanatory power of the theory, on the other hand, it limits the predictability.<sup>79</sup> The

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<sup>72</sup> Ibid. p.150

<sup>73</sup> Tanya Ogilvie White, op. cit. p.52

<sup>74</sup> Philip E. Tetlock, Charles McGuire Jr. op. cit. p.169

<sup>75</sup> Tanya Ogilvie White, op. cit. p.53

<sup>76</sup> “*Nuclear myth*” indicates that nuclear weapons automatically provide the state national security as well as prestige and power in the international arena.

<sup>77</sup> For a review of Iran's nuclear program using this model, See, (Peter R. Lavoy thesis advisor) Charles C. Mayer, “National Security to Nationalist Myth: Why Iran Wants Nuclear Weapons”, Master’s Thesis, Naval Postgraduate School, Monterey, California, September 2004

<sup>78</sup> Tanya Ogilvie White, op. cit. pp.54

<sup>79</sup> Ibid.

SCOT theory rejects separation of society and technology and emphasizes that nuclear technology is socially constructed.<sup>80</sup>

There is no single theoretical approach which can fully explain the causes of the proliferation of nuclear weapons. Each of these approaches reveals a piece of the puzzle of nuclear proliferation. The following table summarizes the comparison of the approaches mentioned.

**Table 1:** Explanatory Powers/Limitations of Existing Proliferation Theories

<b>Theory or Model</b>	<b>Strengths as a theory of nuclear proliferation</b>	<b>Weakness as a theory of nuclear proliferation</b>
Classical realism	Explains role of security considerations.	Ignores domestic determinants.
Neo-realism	Presents an elegant, logically deduced explanation of nuclear proliferation, but side-steps empirical difficulties.	Explains systemic outcomes not unit level outcomes. Predictions and explanations are misleading and inaccurate.
Neo-liberal institutionalism	Explains domestic determinants, such as economic and political factors.	Leaves decisionmaking out of analysis.
Organizational theory	Analyzes implementation of decisions. Explains role of organizations in irrational behavior.	Underestimates impact of individuals and new information.
Belief systems theory	Focuses on role of individuals and groups and explains irrational decisions.	Difficult to quantify. Cannot explain causes of beliefs.
Learning models	Explain impact of new information.	Cannot explain what lessons are likely to be learned under what circumstances.
SCOT theory	Explains role of technology. Places nuclear proliferation in historical and social contexts.	Very descriptive.

**Source:** Tanya, Ogilvie-White, "Is There a Theory of Nuclear Proliferation? An Analysis of the Contemporary Debate", pp.55

In this study, the three models proposed by Scott Sagan will be used in the analysis of Iran's nuclear program. This method, on a large scale, provides an opportunity to implement the aforementioned theories and approaches. The Security

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<sup>80</sup> Ibid. pp.54-55

Model contains the basic assumptions of the realist and neo-realist approach. The Domestic Politics Model makes it possible to implement the two approaches of Neo-liberal institutionalism and Organizational theory. The Norms Model focuses on the symbolic meaning of acquiring nuclear weapons. According to this model nuclear weapons reflects and shapes a state's identity.<sup>81</sup> This model refers to the social environment of the states in addition to the security environment and focuses on nuclear nonproliferation instead of proliferation.<sup>82</sup> There are 63 non-nuclear weapons states with one or more NWS neighbors and 56 NNWS (40 of these are nuclear potential states) which are engaging in nuclear activities.<sup>83</sup> What prevents these countries from having nuclear weapons? According to this model, "shared belief systems (norms)" plays an important role in the emergence of this situation.<sup>84</sup>

## 1.2: NUCLEAR WEAPONS AND NUCLEAR ENERGY

### 1.2.1: Basic of Nuclear Physics

Atoms generally embody electrons, neutrons and protons.<sup>85</sup> The kernel of an atom holds almost all its weight. Electrons which are much larger in size, has negligible weight. The number of protons is a distinctive feature of the elements so that each element has a different number of protons. Change in the number of protons leads to a complete differentiation of the elements. On the other hand, the number of neutrons can differ in the same kind of atom. For instance, in some uranium atoms there can be 143 neutrons while in another it can be 146. Atoms in this situation, same number of protons

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<sup>81</sup> Sagan, D. Scott., "Why do States Build Nuclear Weapons?-Three Models in Search of a Bomb", *International Security*, Vol. 21, No.3, p.73, and Nina Tannenwald, "The Nuclear Taboo: The United States and the Non-Use of Nuclear Weapons Since 1945", Cambridge University Press, Cambridge, 2007, pp.44-47

<sup>82</sup> Rublee, Maria Rost. "Nonproliferation Norms: Why States Choose Nuclear Restraint", Athens, GA, USA, University of Georgia Press, 2009, p.2, Also, Karsten Frey, "Of Nuclear Myths and Nuclear Taboos", *Peace Review: A Journal of Social Justice*, Vol.18, no.3, pp. 344-345

<sup>83</sup> Ibid. pp.30-31

<sup>84</sup> Ibid. pp.39-40

<sup>85</sup> Only hydrogen atoms does not contain neutron, it consists of a single proton and a single orbital electron. See. Jack Barret, "Atomic Structure and Periodicity", The Royal Society of Chemistry, London, p.14

and different numbers of neutrons, are called “isotopes”. Although isotopes have the same general features, there may be distinctive characteristics between them. For example, U-235 and U-238 are both uranium and both have the general a properties of uranium, but U-235 is highly unstable while U-238 is relatively stable. U-235 is more suitable to use in a nuclear chain reaction because of its instability. U-235 isotopes are prone to disintegration when they collide with a slow neutron. Therefore, this isotope is called “fissile” which means “able to be split easily”.<sup>86</sup> Gary Gardner describes the nuclear chain reaction in the following way: After the fission of a U-235 atom two or three of its neutrons are released. If at least one of these released neutrons hit another U-235 atom and split it nuclear chain reaction will be start.<sup>87</sup>

In order to continue the chain reaction, neutrons released by fissioned atoms must hit other “fissile” atoms. Otherwise, stable atoms, such as U-238, can absorb neutrons and stop fission. Natural uranium has the form of a mixture of at least three isotopes. The largest proportion of this mixture consists of U-238 atoms (99,27 %). Only 0,72 % of natural uranium is U-235, which is by far more fissile than U-238. Thirdly, U-234 with the remaining 0,0055 % has the smallest proportion.<sup>88</sup> If the ratio of fissile atoms increases, the continuity of the reaction can also increase, but this process is not very easy because isotopes of an atom closely resemble one another. Additionally, the slowing down of neutrons is another method of increasing efficiency, because slow neutrons can more easily interact with a nucleus of a U-235 atom. To fulfill this function, a substance called a “**moderator**” is generally used in nuclear reactors. Light water (ordinary water), heavy water<sup>89</sup> and graphite are materials used as the moderator.<sup>90</sup> There are some advantages and disadvantages with each of these moderators. Roger Tilbrook states that the atomic weight and absorbing neutrons playing crucial role in the selection of moderators. Quality indicators for the moderators are: Light atomic weight and low neutron absorption. Ordinary water has light atomic weight but it absorbs neutrons. Heavy water may seem ideal because of its low neutron

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<sup>86</sup> Vural Altın, “Nükleer Enerji”, *Bilim ve Teknik*, Tübitak, Ağustos 2004, pp.4

<sup>87</sup> Gary Gardner, “Nuclear Proliferation: A Primer”, Lynne Rienner Publications, 1994, pp.1-2

<sup>88</sup> Gardner, op. cit. pp.2-5, Janet Wood, op. cit. pp.6-7

<sup>89</sup> “**Heavy water:** Water containing significantly more than the natural proportions (one in 6,500) of heavy hydrogen (deuterium, D) atoms to ordinary hydrogen atoms”. Lester M. Waganer, op. cit. pp. xx

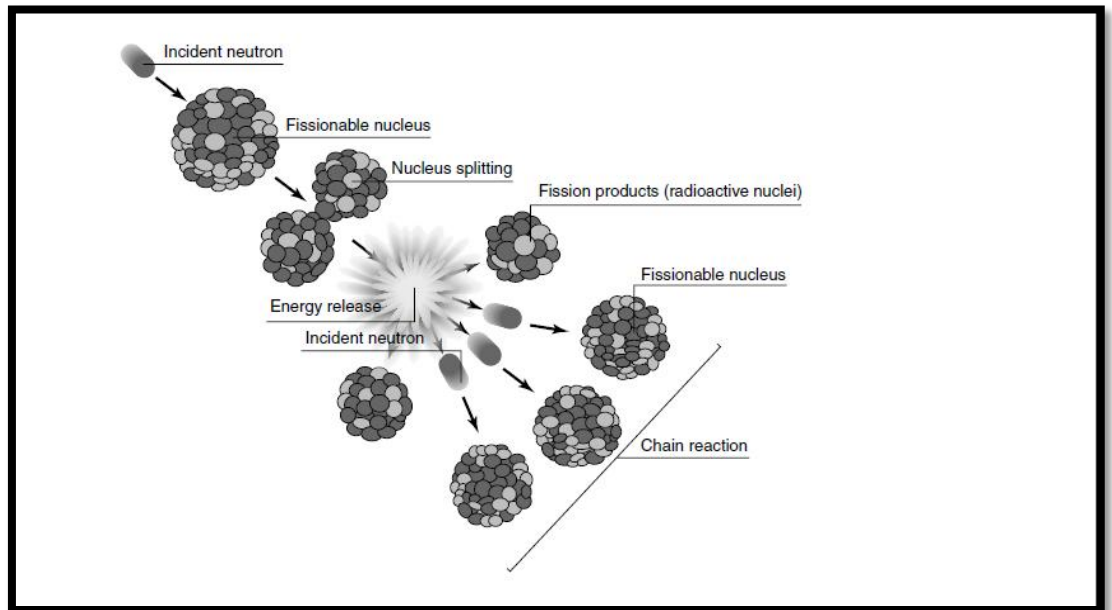
<sup>90</sup> Gary Gardner, op. cit. pp.4-5, Roger Tilbrook, op. cit. pp.17



absorption but heavy water production cost is very high. Graphite does not absorb neutrons but it “...tends to have impurities such as boron, which do absorb neutrons.”<sup>91</sup>

Besides the only natural fissile isotope U-235, there are two artificial fissile elements: Plutonium (Pu-239) and U-233.<sup>92</sup> All three isotopes can be used to obtain nuclear energy and produce nuclear explosives.<sup>93</sup>

**Figure 2:** Nuclear Chain Reaction<sup>94</sup>



**Source:** Janet Wood, "Nuclear Power", The Institution of Engineering and Technology, London, 2012

A typical nuclear power reactor uses uranium enriched to 3-5 % and some research reactors use 20% enriched uranium (highly enriched uranium-HEU). If the enrichment rate reaches above 20% it is perceived as a serious risk in terms of proliferation. Normally enrichment to 90% and above is called “weapons-grade” but the distance between 20 per cent and 90 per cent can be travelled in a short time. That’s

<sup>91</sup> Roger Tilbrook, op. cit. pp.17

<sup>92</sup> Pu-239 arises as a result of the conversion of non-fissile U-238 by taking a neutron. U-233 is a fissile isotope that is extracted from Th-232(an isotope of Thorium). Gary Gardner, op. cit. pp.5

<sup>93</sup> Pu-239 can be used directly as fuel for nuclear weapons, that’s why it is considered as an important indicator of proliferation.

<sup>94</sup> Janet Wood, “Nuclear Power”, The Institution of Engineering and Technology, London, 2012, pp.6

why obtaining HEU is a sensitive point in terms of nuclear proliferation.<sup>95</sup> Another critical material for nuclear proliferation is “Heavy Water”. As well as simplifying the production of Plutonium, heavy water provides material (Tritium) that can strengthen nuclear weapons, and the amount of nuclear fuel required to produce a nuclear weapon can be also reduced by using tritium.<sup>96</sup> In addition to this, there are several factors that affect the amount of fissile material to be used in production of an atomic bomb. First, the type of fissile material is an important factor because each of these (U-233, U-235 and Pu-239) has different critical masses.<sup>97</sup> For instance, while the amount of U-235 that is necessary to produce an atomic bomb is 52 kg; only 10 kg of Pu-239 is sufficient to achieve the same objective. Second, the density of fissile material has a direct impact on critical mass. For example, if we compressed fissile materials to double density, the amount of critical mass falls to one-fourth. Third, reflectors (such as beryllium) that reroute escaping neutrons into the chain reaction are effective over the quantity of critical mass.<sup>98</sup> Critical mass is important for building a nuclear weapon. There are two types of fission weapons: a “Gun-Device” and an “Implosion-Device” (See Annex 4).<sup>99</sup> In the gun device there are two pieces of HEU, each less than critical mass, but together these materials form a supercritical mass. When sub-critical masses are brought together very rapidly, they form a supercritical mass and a nuclear explosion will occur.<sup>100</sup>

In an “Implosion-Device”, sub-critical mass is surrounded by high explosives (such as Tri Nitro Toluen-TNT).<sup>101</sup> When the high explosives are detonated concurrently, imploding shock waves compress the fissile material to super-criticality.<sup>102</sup> Implosion systems can be built using either Pu-239 or U-235, but the gun assembly only works for uranium.<sup>103</sup>

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<sup>95</sup> Gary Gardner, op. cit. p.6, James A. Mahaffey, op. cit. p.144

<sup>96</sup> Gary Gardner, op. cit. p.6

<sup>97</sup> “**Critical mass:** The smallest mass of fissile material that will support a self-sustaining chain reaction under specified conditions”. Janet Wood, op. cit. p.222

<sup>98</sup> Gary Gardner, op. cit. pp.7

<sup>99</sup> Haluk Gerger, “Nükleer Tehlike: Nükleer Silahlar ve Nükleer Savaş”, Bilim ve Sanat Yayınları, Ankara, 1983, p.47

<sup>100</sup> Frank Barnaby, “How to Build a Nuclear Weapon and Other Weapons of Mass Destruction”, Nation Books, New York, 2004, pp.80

<sup>101</sup> Haluk Gerger, op. cit. pp. 48

<sup>102</sup> Ibid., Gary Gardner, op.cit. pp.7-8

<sup>103</sup> Types of Nuclear Weapons, <<http://www.ctbto.org/nuclear-testing/types-of-nuclear-weapons/>> [Access Date:08/08/2014]

### 1.2.2: Nuclear Energy

“Energy is the ability to do work”.<sup>104</sup> All activities, more or less, absolutely require energy, so, it is highly essential for the continuation of life. For instance, Earth would not be a livable place without solar energy. In addition to solar (or radiant) energy there are several other forms of energy; Mechanical, thermal, chemical, electrical, electromagnetic and mass (or nuclear) energy<sup>105</sup>. Mankind uses different types of energy in order to survive, produce and wield control over nature.<sup>106</sup> In order to sustain these kinds of human activities, there is a need for a continuous supply of energy. This has been a trigger for evaluating the energy sources. It has been necessary to discover alternative sources in the possibility currently exploited resources become depleted, because Earth’s energy resources are not infinite.<sup>107</sup> The forces of water and wind have begun to be insufficient due to increasing population and production activities. Steam power and, as a natural consequence, coal too, was gained importance since the Industrial Revolution.<sup>108</sup>

Growing population and industrialization increased the energy demand of developed countries and this necessity has led countries to find new sources of energy. Alternative energy sources to fossil fuels such as coal and oil have gained importance. Converting mechanical energy into electrical energy opened the way for the ability to use hydroelectric technology.<sup>109</sup> Since the beginning of the 20th century, fossil fuels have become the most important energy source. The use of nuclear technology for energy production will be realized from the mid-20th century onward.

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<sup>104</sup> A Brief History of Energy Use, <<http://www.energybc.ca/matters/historyofenergyuse.html>>, [Access Date:07/07/2014]

<sup>105</sup> What is Energy?, American Petroleum Institute, <<http://www.api.org/oil-and-natural-gas-overview/classroom-tools/classroom-curricula/what-is-energy>>, [Access Date:07/07/2014]

<sup>106</sup> A Brief History of Energy Use, <<http://www.energybc.ca/matters/historyofenergyuse.html>>, [Access Date:07/07/2014]

<sup>107</sup> The exploration and use of new energy sources lead to changes in the environment. This consequence, as well as financial costs, creates an indirect cost for human being, such as climate change, global warming, environmental degradation, inequality, etc. Murray, L. Raymond., “Nuclear Energy: An Introduction to the Concepts, Systems, and Applications of Nuclear Processes”, Butterworth Heinemann, North Carolina, USA, Fifth Edition, 2001, pp.9-10

<sup>108</sup> A Brief History of Energy Use, <<http://www.energybc.ca/matters/historyofenergyuse.html>>, [Access Date:07/07/2014]

<sup>109</sup> Ibid.

“Atom<sup>110</sup>” means “*the smallest unit that an element can be divided into*”<sup>111</sup> and “Nuclear” as a word, is derived from “nucleus”<sup>112</sup>. By means of increasing knowledge on the structure of the atom, scientists discovered that it has a kernel (nucleus). Nuclear energy is obtained from a reaction of atomic nucleus. There are two ways to achieve nuclear energy: “nuclear fission” and “nuclear fusion”.<sup>[113] [114]</sup> The development of nuclear fission technology occurred over in a long period of time and, unfortunately, was first used in the construction of the atomic bomb. A very short history of the scientific developments that leading to the nuclear weapon is as follows:

New discoveries regarding the structure of the atom had gained momentum between the end of the 19<sup>th</sup> century and early 20<sup>th</sup> century. Joseph John Thomson (1856-1940) discovered the electron in 1904. Antoine Henri Becquerel (1852-1908) performed an experiment on uranium salts in 1894, and he found that salts fogged a photographic negative<sup>115</sup> in a similar manner to X-rays.<sup>116</sup> Becquerel named them “Becquerel rays”. Marie Curie (1867-1934) and Pierre Curie (1859-1906) studied radioactivity<sup>117</sup> and they found polonium and radium in 1896. Ernest Rutherford (1871-1937) classified the radioactive particles and named them. He found two types of radiation. The first type traveled a very short distance (approximately 3-5 cm) and was easily stopped by air; he named it “alpha”.<sup>118</sup> The second type could travel a few meters in the air and was better at penetrating; he named it “beta”. A few months later, the third type was identified and

<sup>110</sup> The word “Atom” comes from “atomos” which means “a thing cannot be divided” in Greek. Jamie Poolos, “The Atomic Bombings of Hiroshima and Nagasaki”, Infobase Publishing, New York, 2008, pp.11

<sup>111</sup> <<http://dictionary.cambridge.org/>>

<sup>112</sup> Nucleus (plural: nuclei) Central part of an atom or cell. <<http://dictionary.cambridge.org/>>

<sup>113</sup> Vural Altın, “Nükleer Enerji”, *Bilim ve Teknik*, Tübitak, Ağustos 2004, p.4 <<http://www.biltek.tubitak.gov.tr/bdergi/yeniufuk/icerik/nukleer.pdf>>, [Access Date:10/10/2014]

<sup>114</sup> “**Nuclear fusion:** The fusing of light atomic nuclei into heavier elements (higher atomic number) with a slightly reduced combined mass that releases a considerable energy (usually in the form of energetic neutrons, alpha particles or radiation) that can heat components surrounding the plasma to produce electricity.”, Lester M. Waganer,” Nuclear Fusion: Glossary and Acronyms, in *Nuclear Energy Encyclopedia: Science, Technology, and Applications*, Edited by Steven B. Krivit, Jay H. Lehr, and Thomas B. Kingery, John Wiley & Sons, Inc.(First Edition), New Jersey, 2011, pp.xx

<sup>115</sup> James A. Mahaffey,,”The History of Nuclear Power”, Fact On File Inc., New York, 2011, pp.11-12 and Roger Tilbrook, “Early History of Nuclear Energy” in *Nuclear Energy Encyclopedia: Science, Technology, and Applications*, Edited by Steven B. Krivit, Jay H. Lehr, and Thomas B. Kingery, John Wiley & Sons, Inc.(First Edition), New Jersey, 2011, pp.15

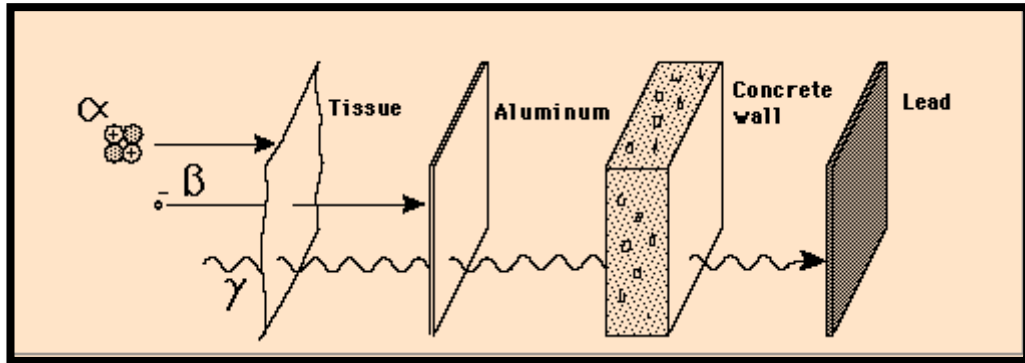
<sup>116</sup> Wilhelm Roentgen (1845-1923) discovered X-rays in 1896.

<sup>117</sup> “Radioactivity refers to the particles which are emitted from nuclei as a result of nuclear instability” <<http://hyperphysics.phy-astr.gsu.edu/hbase/nuclear/radact.html>>, [Access Date:09/08/2014]

<sup>118</sup> The alpha particle consists of 2 protons and 2 neutrons. When a U-238 isotope emits an alpha particle, its atomic weight decrease by 4 and atomic number decreases by 2, it turns into Thorium-234. Janet Wood., “Nuclear Power”, The Institution of Engineering and Technology, London, 2012, p.4

called “gamma” by Paul Villard (1860-1934).<sup>119</sup> This type of radiation can travel long distances and penetrate through more shielded matter.

**Figure 3:** Penetration of radiation



Source: <<http://hyperphysics.phy-astr.gsu.edu/hbase/nuclear/radact.html>>

In 1903, it was founded that during radioactive decay great amounts of energy gets released. Rutherford and Frederick Soddy calculated that “...*the energy released by the decay of one gram of radium could not be less than 100.000.000 gram calories. It was probably closer to 10.000.000.000 or 10 billion gram calories.*”<sup>120</sup> In 1906, Rutherford discovered the atomic nucleus and modified Thomson’s “plum pudding” model of the atom, but according to this model, the nucleus of an atom consists of protons.<sup>121</sup> A research assistant of his, James Chadwick (1891-1974) found a particule (neutron) whose core was comprised the core differently from protons. Unlike protons, these particles were electrically neutral.<sup>122</sup> This discovery has opened the path to nuclear fission<sup>123</sup>. Leo Szilard (1898-1964) conceived of a self-sustained chain reaction that was the basis for improving the atomic bomb.<sup>124</sup> In 1939, Szilard and Enrico Fermi used uranium in an experiment to trigger a chain reaction, and they showed that it was

<sup>119</sup> James A. Mahaffey, op.cit. pp.19

<sup>120</sup> Ibid. pp.21, Roger Tilbrook, op.cit. pp.15

<sup>121</sup> James A. Mahaffey, op.cit. pp.23-26

<sup>122</sup> Ibid. pp.36-38

<sup>123</sup> “**Nuclear fission:** The process of splitting a heavy nucleus into two lighter nuclei, accompanied by the simultaneous release of a relatively large amount of energy and usually one or more neutrons. Fission is induced through the reaction of an incident radiation with the nucleus”. K. Anantharaman, P.R. Vasudeva Rao, Carlos H. Casta ño and Roger Henning,”Nuclear Fission: Glossary and Acronyms, in *Nuclear Energy Encyclopedia: Science, Technology, and Applications*, Edited by Steven B. Krivit, Jay H. Lehr, and Thomas B. Kingery, John Wiley & Sons, Inc.(First Edition), New Jersey, 2011, pp.xv-xvi

<sup>124</sup> Ibid. pp. 40-41, Jamie Poolos, op.cit. pp.11-13

possible. Many scientists<sup>125</sup> who were studying nuclear fission immigrated to the United States due to the growing Nazi threat, and Germany's objectives on controlling uranium mines and developing an atomic bomb had increased scientists' concerns. In 1939, as a consequence of this situation, these concerns were expressed to the United States by Albert Einstein's letter.<sup>126</sup>

German physicist Otto Hahn discovered nuclear fission in 1938, and then realized that the energy from fission could be used to produce a nuclear explosion. The U.S. made a great effort, known as the Manhattan Project, to develop a nuclear weapon, because of the fear that Germany and/or Japan might succeed in developing a nuclear weapon.<sup>127</sup> Nuclear weapons were used for the first time, and so far the only time, in 1945 (in Hiroshima and Nagasaki), then they put their stamp on the period during the Cold War, and they still keep their importance in the security policies of states. After this incident, showing the enormous destructive power of nuclear weapons, the United States their information on nuclear technology a secret until the Soviet Union had nuclear weapons of its own in 1949. So, the two superpowers had also become two "nuclear powers" and this situation gave rise to equilibrium in military terms. Many countries which witnessed the destructive power of atomic bombs began to conduct nuclear researches. The United States gave its nuclear secrets to its most reliable ally, Great Britain, in 1952. After Britain, in 1956 France and in 1964 China also became nuclear powers, and since then the spread of nuclear weapons has become an important issue in the international arena.<sup>128</sup>

In 1942, Enrico Fermi(1901-1954) and his colleagues carried out a chain reaction in a controlled manner by uranium mechanism, and in this way the "Age of Nuclear Energy" started.<sup>129</sup> Scientific research was initiated under the name of "Manhattan Project" (the S-1 Project) in 1942. Director of this Project was Brigadier General Leslie R. Groves (1896-1970). He hired J. Robert Oppenheimer (1904-1967) to

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<sup>125</sup> Enrico Fermi, Emilio Segré, Leo Szilard, Edward Teller, Eugene Wigner, Otto Frisch et cetera.

<sup>126</sup> James A. Mahaffey, op.cit. pp.60-63; Jamie Poolos, op.cit. pp.14-18; Roger Tilbrook, op.cit. pp.16

<sup>127</sup> Frank Barnaby. "How to Build a Nuclear Bomb and other Weapons of Mass Destruction", Nation Books, New York, 2004, pp.15

<sup>128</sup> Erdem Denk,"Bir Kitle İmha Silahı Olarak Nükleer Silahların Yasaklanmasına Yönelik Çabalar", *Ankara Üniversitesi Siyasal Bilgiler Fakültesi Dergisi*, Volume 66, No.3, 2011, pp.103-105

<sup>129</sup> Nükleer Enerjinin Tarihi. (no date), <<http://www.nukleer.web.tr/>>, [Access Date:16/12/ 2013], Also, James A. Mahaffey, op.cit. 70

create a team of scientists.<sup>130</sup> The U.S. government bought 1,250 tons of uranium ore and large amounts of appropriation was allocated. Scientists studied in an intensive manner in order to obtain an atomic bomb before Germany. Early in 1945, it was reported to President Roosevelt that the first test would be held in summer. There were two types of bombs that were developed for the test: the first uranium-based “Little Boy” and the second plutonium-based “Fat-Man”. (See: Appendix 3)<sup>[131][132]</sup>

The first nuclear test, which Oppenheimer named “Trinity”, was carried out in the desert of New Mexico. President Roosevelt died in April 1945, and his deputy Harry Truman became the new president. Only then did Harry Truman first become aware of the Manhattan Project. President Truman was in Postdam for the reorganization of post-war Europe while nuclear bomb test performed in July 1945.<sup>133</sup> Thereafter Japan’s complete surrender was guaranteed in a short time.

### 1.2.2.1: Nuclear Fuel Cycle

Several steps should be taken for the production of nuclear fuel (See: Figure 8.). The first step is **mining** and **milling**. Uranium is dispersed over vast areas and it can be found in many different grounds. Uranium mines are operated in more than twenty countries. Australia (30%), Kazakhstan (17%), Canada (12%), South Africa (8%), Russia (4%), Namibia (6%), and the U.S.A (3%) are only some of them, so it is hard to say that there is a shortage of uranium resources.<sup>134</sup>

The rate of uranium found in ores is very low (the average is 1-2 per thousand). Therefore needs to be separated well from other substances. To do this, uranium mills are established near mines. First the ore is crushed, then water is added and the material is ground to mineral particles. After some chemical processing, uranium oxide ( $U_3O_8$ ) is obtained. This chemical form, because of its color, is called yellow cake.<sup>135</sup>

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<sup>130</sup> Jamie Poolos, op.cit. pp. 49-50, James A. Mahaffey, op. cit. pp.70-74, Roger Tilbrook, op.cit. pp.17

<sup>131</sup> Jamie Poolos, op. cit. p.87, Haluk Gerger, op. cit. p.54

<sup>132</sup> See Appendix for photos of these atomic bombs. Photographs are taken from; James N. Gibson, “Nuclear Weapons of the United States: An Illustrated History”, Schiffer Publishing Ltd, 1996, pp.85-87

<sup>133</sup> Ibid. pp.87-89

<sup>134</sup> Frank Barnaby, op. cit. pp.71, Janet Wood. Ibid. pp.83-84

<sup>135</sup> Frank Barnaby, op. cit. pp.73, Gary Gardner op. cit. pp.12

The second step of the nuclear fuel cycle is “**conversion**”. In this step, processed uranium (yellow cake) is converted to the appropriate form for enrichment. It is converted to uranium dioxide (UO<sub>2</sub>) or metal forms for using it in a heavy water reactor. For use in light water reactors, uranium is converted to uranium hexafluoride (UF<sub>6</sub>) gas.<sup>136</sup>

The third step, which is the most emphasized, is “**enrichment**”. Enrichment is a process of increasing the share of fissile uranium isotope (U-235) in its natural percentage.<sup>137</sup> The chemical characteristic of U-238 and U-235 is the same due to being isotopes, so physical separation methods must be used.<sup>138</sup> There are several methods of uranium enrichment, but two of them are used frequently: Gaseous diffusion and gas centrifuge. In the Gaseous diffusion method, the gas form of uranium (UF<sub>6</sub> uranium hexafluoride) pumps through special filters (porous barrier). Lighter molecules of uranium (U-235 and U-234) tend to diffuse through the barriers faster than the heavier one (U-238)<sup>139</sup>. There is a positive correlation between the number of penetrated barriers and enrichment.<sup>140</sup> The Gas centrifuge method takes advantage of centrifugal force to separate isotopes. UF<sub>6</sub> gas is placed in the centrifuge which is a cylinder that rotates at a speed fast enough for centrifugal force to occur. The heavier gas molecules containing U-238 isotopes gravitate towards the outside of the cylinder, whereas the lighter isotopes of U-235 remain closer to centre.<sup>141</sup> According to William C. Potter “...centrifuge method requires only 35 repetitions to achieve weapons-grade uranium, and a plant with 1,000 centrifuges can supply the uranium the uranium stock for several nuclear weapons per year.”<sup>142</sup>

## Fuel Fabrication

Enriched UF<sub>6</sub> must be fabricated into fuel rods in order to make it suitable for burning up in a nuclear reactor. First, UF<sub>6</sub> is converted to uranium dioxide (UO<sub>2</sub>)

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<sup>136</sup> Gary Gardner op. cit. pp.13

<sup>137</sup> K. Anantharaman, et .al. , op. cit. pp.xv

<sup>138</sup> There is a very small mass difference between the two isotopes. This difference is equal to the weight of only 3 neutrons. Frank Barnaby, op. cit. pp.73

<sup>139</sup> Ibid. pp.73-74, Janet Wood, op. cit. pp.90-91, Gary Gardner, op. cit. pp. 21

<sup>140</sup> For getting 3% enriched uranium 1250 passes are needed; for weapons grade of 90% enriched uranium 4000 passes are required. Gardner, Ibid, Gardner gives this information by referencing William C. Potter, “Nuclear Power and Nonproliferation: An Interdisciplinary Perspective (Cambridge, Mass.: Oelgeschlager, Gun & Hain, Publishers, 1982), pp.71-72

<sup>141</sup> Gary Gardner Ibid. pp.22, Janet Wood, op. cit. pp.91, Frank Barnaby, op. cit. pp.74

<sup>142</sup> Gary Gardner Ibid. pp.22, Gardner refer to William C. Potter, op. cit. p.72



powder to be resistant to high temperature. After several processes, the enriched uranium is shaped into pellets. The dimensions of fuel pellets are 1 cm in height and 1cm in diameter generally. Stacking pellets in tubes forms a fuel rod. Fuel assemblies consist of fuel rods.<sup>143</sup>

### **Fuel Burn-up**

In this step, scientists generate a controlled nuclear fission reaction by using fuel assemblies in the reactor core. The energy that is released is converted into electricity for civilian purposes. After combustion, enriched uranium leaves its place to another important substance: Plutonium.<sup>144</sup> Therefore reprocessing of spent-fuel has become a sensitive issue for nuclear proliferation.

### **Spent-fuel storage**

After they are burnt-up, spent-fuel rods are transported to water-filled pools to use the water as a coolant and a shield. The cooling down of spent-fuel takes a long time and after sufficient time, a decision must be made to either send this spent-fuel for “reprocessing” or for “final disposal”.<sup>145</sup>

### **Reprocessing**

All reprocessing plants use PUREX (Plutonium Uranium Recovery by Extraction) as a method. In this method, the rods are first severed and dissolved in concentrated nitric acid. Then, solvent extraction steps are applied for the separation of uranium and plutonium.<sup>146</sup> Eluted fissile materials may be involved in the nuclear fuel cycle, but for the recycling of plutonium a Mixed Oxide (MOX) fuel fabrication plant is required.<sup>147</sup>

### **Final Disposal**

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<sup>143</sup> Gary Gardner Ibid. pp.16-17, Janet Wood, op. cit. pp.91-92

<sup>144</sup> Ibid. and Frank Barnaby op. cit. p.77

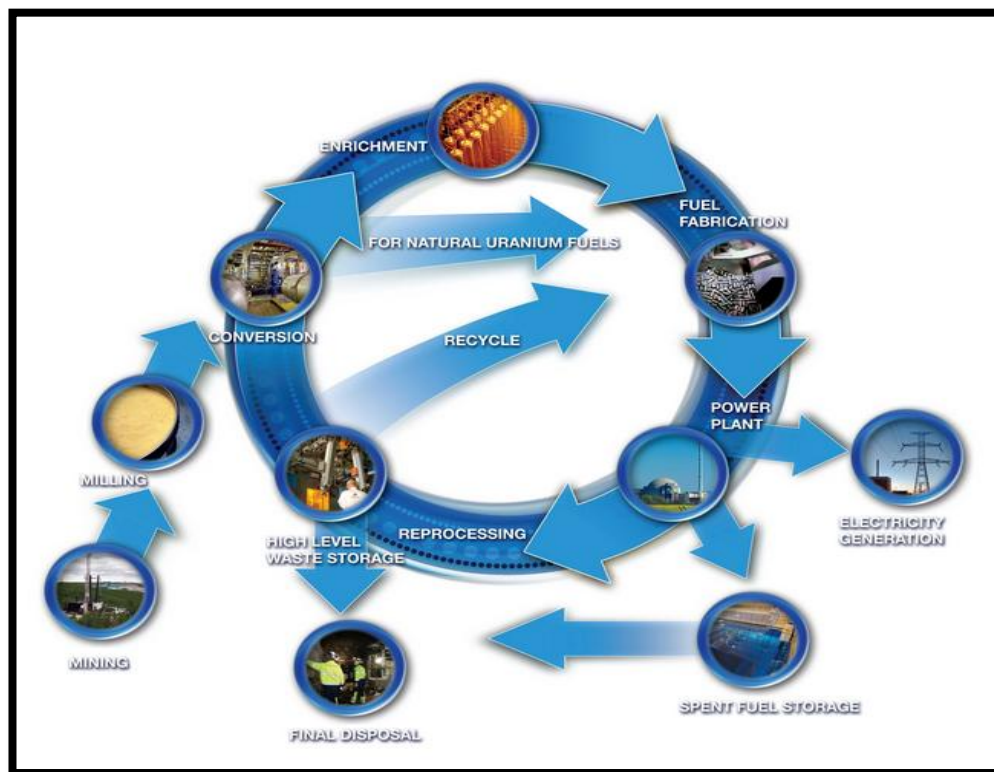
<sup>145</sup> “According to Australia’s Uranium Information Centre, for most types of fuel, reprocessing occurs anything from 5 to 25 years after reactor discharge.” Janet Wood, Ibid. p.97

<sup>146</sup> Ibid.

<sup>147</sup> Janet Wood, op. cit. pp.97-98

Radioactive waste that arises as a result of nuclear reactors can be categorized into three levels:<sup>148</sup> Low-level, intermediate-level and high-level. Low-level radioactive waste “...arises from operations associated with radioactively contaminated material, decommissioning and clean-up of nuclear sites, as well as non-nuclear industries.”<sup>149</sup> Intermediate-level radioactive waste generally comes from the parts that used in the nuclear reactors.<sup>150</sup> High-level radioactive waste “... formed as a by-product of reprocessing spent fuel, are ‘vitrified’ – immobilised in glass. It is generally long-lived and gives off significant quantities of heat.”<sup>151</sup>

**Figure 4:** Nuclear Fuel Cycle



**Source:** <[http://www.iaea.org/OurWork/ST/NE/NEFW/Technical\\_Areas/NFC/home.html](http://www.iaea.org/OurWork/ST/NE/NEFW/Technical_Areas/NFC/home.html)>

<sup>148</sup> This classification may vary from country to country as there are different definitions of “nuclear waste”. Ibid. pp.101, <[www.taek.gov.tr](http://www.taek.gov.tr)>,”Radioaktif Akit Yönetimi”, <<http://www.taek.gov.tr/nukleer-guvenlik/nukleer-enerji-ve-reaktorler/166-gunumuzde-nukleer-enerji-rapor/438-bolum-04-radyoaktif-atik-yonetimi.html>>, [Access Date:17/09/2014]

For example, categorization of these radioactive wastes in the UK is based on heat-generating capacity while in the USA it is based on the quantity of radioactive emission. Ibid. p.101

<sup>149</sup> Ibid.

<sup>150</sup> Ibid.

<sup>151</sup> Ibid.

### 1.2.2.2: Nuclear Reactors

In 1954, the Soviet Union began to operate the world's first nuclear-powered electricity generator (Atom Mirny-Peaceful Atom) in the city of Obninsk.<sup>152</sup> Thus, atoms started to be used for civilian purposes alongside military purposes. The share of nuclear power in electricity generation has increased over time. In 1973, total nuclear energy production was 203 TWh.<sup>153</sup> According to the International Energy Agency's data, total nuclear energy production was 2.584 TWh in 2011.<sup>154</sup> At present, there are 437 commercial nuclear power reactors in operation around the world, and more than 30 countries have nuclear power plants. The United States is ahead by far with its 104 reactors and 770,7 TWh of nuclear electricity generation.<sup>155</sup> Additionally, 67 reactors<sup>156</sup> (29 of them are being constructed by China) are under construction in the world.<sup>157</sup> According to the World Nuclear Association the number of nuclear power plants which have been ordered or planned for (expected in operation within 8-10 years) as of August 2014, is 174. The majority of this number belongs to China (59), Russia (31) and India (22).<sup>158</sup> These data support the calculations about Asia's increasing share of nuclear energy production/consumption.<sup>159</sup> In March 2011, an accident occurred at the Fukushima Daiichi<sup>160</sup> nuclear power plant and this event has increased doubts about

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<sup>152</sup> Ibid. pp.13-14

<sup>153</sup> One TWh (Terawatt-hour) is equal to one billion (10<sup>6</sup>) MWh (Megawatt-hour).

<sup>154</sup> Key World Energy Statistics 2013, International Energy Agency, <<http://www.iea.org/publications/freepublications/publication/KeyWorld2013.pdf>>, [Access Date:05/07/2014]

<sup>155</sup> IAEA's Annual Report GC(57)/INF/2, Nuclear Technology Review 2013, p.9 <[http://www.iaea.org/About/Policy/GC/GC57/GC57InfDocuments/English/gc57inf-2\\_en.pdf](http://www.iaea.org/About/Policy/GC/GC57/GC57InfDocuments/English/gc57inf-2_en.pdf)>, [Access Date:05/07/2014]

<sup>156</sup> According to World Nuclear Association data there are 72 nuclear reactors under construction as of August 2014, but many nuclear power plants that have used up their economic lives will be closed during the construction of these reactors. Therefore, this situation will affect the increase in the production of nuclear energy.

<sup>157</sup> IAEA's Annual Report GC(57)/INF/2, Nuclear Technology Review 2013, p.9 and also in order to achieve the updated statistics, See: IAEA website PRIS (Power Reactor Information System), <<http://www.iaea.org/PRIS/>>, [Access Date:05/07/2014]

<sup>158</sup> World Nuclear Association, World Nuclear Power Reactors & Uranium Requirements, <<http://www.world-nuclear.org/info/Facts-and-Figures/World-Nuclear-Power-Reactors-and-Uranium-Requirements/>>, [Access Date:05/07/2014]

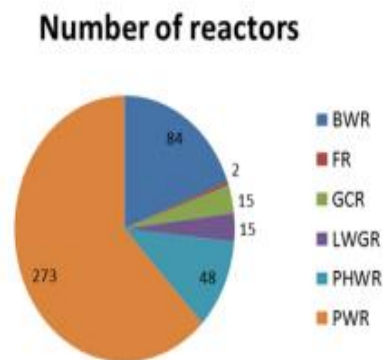
<sup>159</sup> International Atomic Energy Agency, Energy, Electricity and Nuclear Power Estimates for the Period up to 2050, Reference Data Series No:1, Vienna, 2013, pp.18-19 and pp.22-23

<sup>160</sup> For details about Fukushima, See: <<http://www.world-nuclear.org/info/Safety-and-Security/Safety-of-Plants/Fukushima-Accident/>>, [Access Date:05/07/2014]

nuclear energy. The Japanese government reviewed nuclear energy policy<sup>161</sup> and turned to, in part, other energy sources instead of nuclear energy.<sup>162</sup> Although the growth of nuclear power slowed because of the impact of the Fukushima Daiichi accident, it is not possible to say that the world started to renounce nuclear energy.<sup>163</sup>

In 2013, approximately half of the world's nuclear energy consumption was carried out by just 2 countries: the United States (33,4%) and France (17%).<sup>164</sup>

**Figure 5:** Types of Nuclear Reactors



*FIG. A-3. Current distribution of reactor types. (BWR: boiling water reactor; FR: fast reactor; GCR: gas cooled reactor; LWGR: light water cooled, graphite moderated reactor; PHWR: pressurized heavy water reactor; PWR: pressurized water reactor).*

**Source:** IAEA's Annual Report, Nuclear Technology Review 2013

Light Water reactors (LWR), constitute the majority of nuclear reactor types in operation. LWRs include PWRs (pressurized water reactors) and BWRs (boiling water reactors). There are 273 PWRs and 84 BWRs representing approximately 62% and 19% of the total number of reactors. The amount of electric power generation obtained from these reactor types is proportional to its numbers, respectively 66% and 22%.<sup>165</sup> Light

<sup>161</sup> IAEA's Annual Report GC(57)/INF/2, Nuclear Technology Review 2013, pp.5

<sup>162</sup> U.S. Energy Information Administration, International Energy Outlook 2014, DOE/EIA-0484(2014) September 2014, p.5 <[http://www.eia.gov/forecasts/ieo/pdf/0484\(2014\).pdf](http://www.eia.gov/forecasts/ieo/pdf/0484(2014).pdf)>, [Access Date:15/09/2014]

<sup>163</sup> Ibid. p.10

<sup>164</sup> BP Statistical Review of World Energy June 2014, p.35 <<http://www.bp.com/content/dam/bp/pdf/Energy-economics/statistical-review-2014/BP-statistical-review-of-world-energy-2014-full-report.pdf>>, [Access Date:05/07/2014]

<sup>165</sup> J'tia P. Taylor, Roger Tilbrook., "Light-Water-Moderated Fission Reactor Technology", in, *Nuclear Energy Encyclopedia: Science, Technology, and Applications*, First Edition (Wiley Series On

water reactors use natural water as the moderator.<sup>166</sup> The second largest reactor type is the PHWR (pressurized heavy water reactor) with roundly 11% of operating power plants. This type of reactors is less efficient than light water reactors in terms of electrical efficiency. Heavy water reactors generate 7% of nuclear energy production.<sup>167</sup> They use natural uranium as the fuel and heavy water as the moderator. This type of reactor, in terms of proliferation, involves certain risks.<sup>168</sup> GCRs (gas-cooled reactors) were developed by the United Kingdom. This type of reactor uses “graphite” as the moderator. While CO<sub>2</sub> has been used as the coolant for many years in the United Kingdom, a cooling system with Helium was later developed.<sup>169</sup> Today, the United States, China and Japan are the other states that use advanced versions of this technology.<sup>170</sup> LWGRs (Light water cooled- graphite moderated reactors) were designed by the Soviet Union.<sup>171</sup> According to Pavel Tsvetkov this type of nuclear reactors is quite different from the other nuclear reactor designs because the most important function of it is plutonium production. LWGRs are used for *both plutonium and power production*.<sup>172</sup>

Fast Reactors (FRs) are also known as “Fast Breeder Reactors”. This type of reactor produces more fissile material than it consumes.<sup>173</sup> In other words, the *conversion ratio* of these reactors is greater than 1.<sup>174</sup> The United States (in 1972), the United Kingdom (1994), Kazakhstan (1993) and France (2009) have stopped their fast

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Energy). Edited by Steven B. Krivit, Jay H. Lehr, and Thomas B. Kingery, John Wiley & Sons Inc., New Jersey, 2011, p.167.

<sup>166</sup> Moderators, as mentioned above, are used to increase the probability of fission by slowing down the neutrons. Gary Gardner, op. cit. p.25

<sup>167</sup> Ibid.

<sup>168</sup> Output of this reactor (plutonium and tritium) can be used directly in nuclear weapons as the fuel, and “on-line refueling” makes it difficult to follow up its nuclear activities. Ibid. pp.29, for detailed information about the operating mechanism of these reactors, See. Rusi P. Taleyarkhan, “CANDU Pressurized Heavy Water Nuclear Reactors”, in *Nuclear Energy Encyclopedia: Science, Technology, and Applications*, First Edition (Wiley Series On Energy). Edited by Steven B. Krivit, Jay H. Lehr, and Thomas B. Kingery, John Wiley & Sons Inc., New Jersey, 2011, pp.175-185

<sup>169</sup> Pavel V. Tsvetkov, “Graphite-Moderated Fission Reactor Technology”, pp.187 in *Nuclear Energy Encyclopedia: Science, Technology, and Applications*, First Edition (Wiley Series On Energy). Edited by Steven B. Krivit, Jay H. Lehr, and Thomas B. Kingery, John Wiley & Sons Inc., New Jersey, 2011

<sup>170</sup> Ibid. pp.187-188

<sup>171</sup> It is called RBMK (reactor bolsшой moshchnosty kanalny) in Russian which means high power channel reactor in English. Ibid. pp.191

<sup>172</sup> Ibid. pp.191

<sup>173</sup> Gary Gardner, op. cit. pp.34

<sup>174</sup> “The ratio of fissile material produced and fissile material destroyed is termed the conversion ratio.” Baldev Raj and P. Chellapandi, “Status of Fast Reactors”, pp. 193, in *Nuclear Energy Encyclopedia: Science, Technology, and Applications*, First Edition (Wiley Series On Energy). Edited by Steven B. Krivit, Jay H. Lehr, and Thomas B. Kingery, John Wiley & Sons Inc., New Jersey, 2011

reactors' activities. Japan shut down its own nuclear reactors and Germany gave up its activities in this field. Russia's fast reactor (BN 600) is still in operation. China (started in 2010) and India (started in 2011) are building fast reactors.<sup>175</sup> Breeder reactors cause proliferation concerns due to their production of weapons-grade fissile materials.<sup>176</sup>

**Table 2:** Operating modes of Nuclear Reactors

	<b>Fuel</b>	<b>Moderator</b>	<b>Refueling</b>
Light Water Reactors (PWR and BWR), VVER	Low-enriched uranium (enriched to about 3% U-235)	Light(natural) water	Requires plant shutdown
Heavy Water Reactors- CANDU,...etc.	Natural (nonenriched) uranium	Heavy water (deuterium oxide)	No plant shutdown required
Gas-Cooled Reactors	Natural to slightly enriched uranium	Graphite	Requires plant shutdown
Fast Breeder Reactors	Plutonium or highly enriched uranium	None	Requires plant shutdown

**Source:** Gary Gardner, "Nuclear Nonproliferation: A Primer", p.31

Countries with nuclear weapons, agreed on the need to supervise and monitor other states in their activities around nuclear technology. Therefore, in 1957 the International Atomic Energy Agency was founded with acceptance of the status of the IAEA and as of November 2012, the IAEA has 158 Member States.<sup>177</sup> The aim of the agency is to provide the use of atomic energy for peaceful purposes. According to the Statute of the IAEA objectives of it as follows:

The Agency shall seek to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world. It shall ensure, so far as it is able, that

<sup>175</sup> Ibid. pp.201

<sup>176</sup> Gardner, op. cit. pp. 34-35

<sup>177</sup> Member States of the IAEA, <<http://www.iaea.org/About/Policy/MemberStates/>> , [Access Date:20/10/ 2014]

assistance provided by it or at its request or under its supervision or control is not used in such a way as to further any military purpose.<sup>178</sup>

We can say that the IAEA has not succeeded in monitoring countries because of very limited audit authority, so it has been necessary to increase and expand the International Atomic Energy Agency's supervisory power. This requirement will be partially offset by the Non-Proliferation Treaty (NPT), yet India (in 1974) and Pakistan (in 1978) have become "Nuclear States" by staying outside of the NPT. Unlike these countries, North Korea officially withdrew from the NPT in March 2003 and shortly after declared that its first nuclear test would be in October 2006. Also, there are very serious allegations that Israel has nuclear weapons, but these claims have not been confirmed by the authorities. Israel's policy on this issue is "*nuclear ambiguity*", meaning it neither denies nor accepts having nuclear weapons.<sup>179</sup>

### **1.3: THE NUCLEAR NON PROLIFERATION**

#### **Nuclear Weapons after the Second World War**

In 1945, the first time a nuclear chain reaction was used as a weapon by the United States, the first Atomic Bomb was dropped on Hiroshima and Nagasaki. These bombs that killed more than 200 thousand people, one of the greatest destructions in history, undermined the balance of power, and many countries have embarked on a race to have this weapons technology. The Nuclear weapon can be defined as follows:

A nuclear weapon is a device with explosive energy, most or all of which is derived from fission or a combination of fission and fusion processes. Explosions from such devices cause catastrophic damage due both to the high temperatures and ground shocks produced by the initial blast and the lasting residual radiation.<sup>180</sup>

However, shortly after, when the Soviet Union acquired nuclear power, the United States lost its monopoly in nuclear technology. U.S. President Dwight D. Eisenhower made a speech on "Atoms for Peace" when he addressed the General Assembly of the

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<sup>178</sup> The Statute of IAEA, <<http://www.iaea.org/About/statute.html#A1.2>>, [Access Date:20/10/2014]

<sup>179</sup> Erdem Denk,"Bir Kitle İmha Silahı Olarak Nükleer Silahların Yasaklanmasına Yönelik Çabalar", *Ankara Üniversitesi Siyasal Bilgiler Fakültesi Dergisi*, Volume 66, No.3, 2011, pp.106-107

<sup>180</sup> Joseph Cirincione, Wolfsthal, John.B., Rajkumar, Miriam." Deadly Arsenals: Nuclear, Biological, and Chemical Threats, Second Edition, Revised and Expanded", Washington: Carnegie Endowment for International Peace, 2005, pp.6

United Nations on December 8, 1953. The project allowed for, provided that the use of nuclear energy was for peaceful and for civilian purposes, the establishment of small-scale nuclear research reactors and the provision of the technological and scientific infrastructure needed for their operation, supported by American ally countries.<sup>181</sup>

Iran was one of the most important allies of the United States in the Middle East and led by the pro-Western Shah Mohammad Reza Pahlavi. Therefore, there was no drawback in providing for Iran's nuclear technology and for the country's military strengthening. In 1960, the first nuclear research reactor (5MW capable) was established at the University of Tehran with the support of the United States. Moreover, in 1967, the United States gave nuclear fuel (enriched uranium and plutonium) to Iran that was necessary for starting research reactor.<sup>182</sup>

Because of concerns over the uncontrolled spread of nuclear weapons, on July 1, 1968, the Non-Proliferation Treaty (NPT) was opened for signatures and in this way, all the signatory countries gained the right to nuclear energy for peaceful purposes. Iran started nuclear research enthusiastically and began the construction of several nuclear facilities with the support of the United States and European countries (especially France and Germany).<sup>183</sup> However, after the realization of the Islamic revolution in Iran, in 1979, everything is reversed, and the United States and European countries withdrew their support for Iran's nuclear program. During the first years after the revolution, the new government stopped nuclear research but devastating effects of the Iraq-Iran War (1980-1988) led to the research's recommencement. Iraq used chemical weapons against Iran which was isolated by the international community, and Iran did not possess any power to deter Saddam. Indifference of the international community in regards to Saddam's chemical weapons was effective in increasing nationalism in Iran.<sup>184</sup> Later on, Iran tried to operate on its own nuclear program and trying to get help

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<sup>181</sup> Eisenhower, Dwight. *Atoms for Peace Address*. 1953, <[http://www.eisenhower.archives.gov/All\\_About\\_Ike/Speeches/Atoms\\_for\\_Peace.pdf](http://www.eisenhower.archives.gov/All_About_Ike/Speeches/Atoms_for_Peace.pdf)>, [Access Date:12 December 2013]

<sup>182</sup> Farhang Jahanpour,(no date). *Chronology of Iran's Nuclear Programme, 1957-2007*. <[http://oxfordresearchgroup.org.uk/oxford\\_research\\_group\\_chronology\\_irans\\_nuclear\\_programme\\_1957\\_2007](http://oxfordresearchgroup.org.uk/oxford_research_group_chronology_irans_nuclear_programme_1957_2007)>, [Access Date:13 December 2013]

<sup>183</sup> Kibaroglu, Mustafa."Good for Shah, Banned fort he Mullahs:The West and Iran's Quest for Nuclear Power". *Middle East Journal*, vol. 60, no:2, 2006, pp.215-217

<sup>184</sup> Geoffrey, Kemp."Iran's Bomb and What to Do About It", The Nixon Center, <<http://www.cftni.org/publications/monographs/IransBomb.pdf>> ,[Access Date:21/12/ 2013]



from various countries. Today also, Iran is committed to having its own nuclear technology.

This study consists of three chapters. Iran's nuclear history will be examined in the first chapter. Nuclear weapons and the NPT (Non-Proliferation Treaty) will also be discussed in this section. In the second chapter; the process of the dispute will be examined. We will focus on the main allegations and responses to the claims of the parties in this process. The United States and the EU's policies in the process will be included in this section as well. In the third chapter we will focus more on recent developments in the dispute and the overall evaluation.

The main sources of this study are NPT and IAEA (International Atomic Energy Agency) reports, and primary sources will be used as much as possible.

### **International Nuclear Non-Proliferation Regime**

The global nonproliferation regime refers to *“a network of interlocking treaties, organizations, inspections and unilateral and bilateral arrangements aimed at halting the spread of nuclear, chemical, and biological weapons.”*

<sup>[185][186]</sup> These three nonproliferation regimes are developed at different levels. There are international agreements that form the basis of each regime: for the nuclear nonproliferation regime the Treaty on the Non-proliferation of Nuclear Weapons (NPT), for the chemical nonproliferation regime the Chemical Weapons Convention (CWC), and for the biological nonproliferation regime the Biological and Toxin Weapons Convention (BTWC).<sup>187</sup> In order to fulfill the liabilities of these treaties, various organizations, mechanisms and procedures were established. Since the subject of this study is within the scope of nuclear

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<sup>185</sup> Joseph Cirincione, Jon B. Wolfsthal, Miriam Rajkumar, “Deadly Arsenal: Nuclear, Biological, and Chemical Threats”, The Brookings Institution Press, 2nd ed., Washington, 2005, pp.27

<sup>186</sup> Actually, the non-proliferation regime includes delivery systems and conventional arms. There are some initiatives in order to limit these weapons. The Missile Technology Control Regime (MTCR) seeks to limit the proliferation of missiles, complete rocket systems, unmanned air vehicles and missiles technology. The Wassenaar Arrangement is an attempt to provide transparency in the transfers of conventional arms and sensitive dual-use goods and technologies. Nonproliferation regimes, official website of the U.S. Department of State <<http://www.state.gov/strategictrade/resources/c43178.htm>>, [Access Date:19/10/2014]

<sup>187</sup> Ibid. p.27

nonproliferation, detailed information about the other regimes will not be provided here.

### **Nuclear Non-Proliferation Regime**

“*Regime*”, as a word, generally refers to a regulated system or government.<sup>188</sup> Similarly, in the discipline of international relations, the concept of “international regimes” emphasizes certain regularity. Stephen D. Krasner defines the concept of international regime as “...*principles, norms, rules, and decision-making procedures around which actor expectations converge in a given issue area.*”<sup>189</sup> The nuclear non-proliferation regime is a highly advanced international regime and it is the most developed regime on the non-proliferation of WMD. There are several elements that form this regime. Several international organizations (the United Nations (UN), the International Atomic Energy Agency (IAEA), the Comprehensive Test Ban Treaty Organization (CTBTO)<sup>190</sup>), international treaties (the Treaty on Non-proliferation of Nuclear Weapons (NPT), the Comprehensive Test Ban Treaty (CTBT), the Fissile Material Cut-off Treaty (FMCT)), and international agreements (the Nuclear Supplier Group (NSG) and Zangger Committee), can all be considered the main elements of this regime.<sup>191</sup> In addition to these tangible elements, there are some norms which hold an important place in the nuclear non-proliferation regime. Some of these norms are; nuclear disarmament, the peaceful use of nuclear energy, nuclear non-proliferation, being a party to the NPT as a NNWS (Non-nuclear Weapon State) and implementing Additional Protocol, etc.

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<sup>188</sup> To see the origin of the word or other uses and meanings; <<http://www.oxforddictionaries.com/definition/english/regime?searchDictCode=all>>, [Access Date:16/10/2014]

<sup>189</sup> Krasner, D. Stephen, “Structural Causes and Regime Consequences: Regimes as Intervening Variables”, *International Organization*, Vol. 36, No. 2 (Spring 1982) p.185, There is a discussion on the definition of “regime”, so existence of the non-proliferation regime is arguable for some authors. For an example of such discussion, see: Michael Brzoska, “Is the Nuclear Non-Proliferation System a Regime? A comment on Trevor McMorris Tate”, *Journal of Peace Research*, 1992, vol. 29, no:2, pp.215-220.

<sup>190</sup> The Comprehensive Test Ban Treaty has not entered into force because of the failure to provide necessary conditions. When the required signatures and approval procedures are finished the CTBTO will be an active organization.

<sup>191</sup> Şebnem Udum, “On Weapons of Mass Destruction Free Zone (WMDFFZ) in the Middle East,” *Orta Doğu Analiz (Middle East Analysis)* Vol.5, No. 54, ), June 2013, pp. 47

The nuclear non-proliferation regime has matured over a long process. After the usage of the atomic bomb in World War II, the international balance of power has changed. One of the most important issues in the post-war order was the problems raised by atomic bomb exploration.

Foreign ministers of the United States, the United Kingdom and the Soviet Union had reached a consensus with the creation of the United Nations Atomic Energy Commission (UNAEC) in order to deal with problems that emerged after the discovery of atomic energy.<sup>192</sup> In order to accept the proposal the Soviet Union put forward the condition that, the UNAEC must be subject to the UN Security Council.<sup>193</sup> This condition was considered by the United Kingdom and the United States. In the first session of the United Nations there was a resolution to establish a commission to deal with these problems.<sup>194</sup> Thus, one of the first steps was taken for the prevention of nuclear proliferation, and the Atomic Energy Commission was created by the General Assembly. The AEC was composed of UNSC representatives and Canada,<sup>195</sup> but the commission was not effective enough since the intention of the United States, the Soviet Union and their allies was not to prevent nuclear nonproliferation.<sup>196</sup>

In June 1946, Bernard Baruch, the US representative to the AEC, offered a plan that included the creation of a treaty-based international organization (International Atomic Development Authority-IADA). According to this plan, the IADA would “*own, operate, manage, and license all atomic energy research and production facilities on behalf of the nations of the world*”<sup>197</sup> So that the nuclear activities in all countries (except the United States) would be under the control of this organization. If this organization could operate as fully active all over the world and eliminate the possibility of the production of nuclear weapons by other countries, the United States would be

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<sup>192</sup> David Fischer, “History of the International Atomic Energy Agency: the first forty years”, The Agency, Vienna, 1997, p.18, <[http://www-pub.iaea.org/mtcd/publications/pdf/pub1032\\_web.pdf](http://www-pub.iaea.org/mtcd/publications/pdf/pub1032_web.pdf)>, [Access Date:18/09/2014]

<sup>193</sup> Ibid. p.18

<sup>194</sup> Erdem Denk, “Efforts to Outlaw Nuclear Weapons as a Weapon of Mass Destruction”, Ankara University SBF, Vol.66, No.3, Ankara, 2011, pp.95-96, Also, “Establishment of a Commission to Deal with the Problems Raised by the Discovery of Nuclear Energy”, Resolution no: A/RES/1(I) 24 Jan. 1946 <[http://www.un.org/en/ga/search/view\\_doc.asp?symbol=A/RES/1\(I\)](http://www.un.org/en/ga/search/view_doc.asp?symbol=A/RES/1(I))>, [Access Date:24.08.2014]

<sup>195</sup> Daniel H. Joyner, “Interpreting the Nuclear Non-Proliferation Treaty”, Oxford University Press, New York, 2011, p.7

<sup>196</sup> David Fischer, op. cit. pp.17-18

<sup>197</sup> Daniel H. Joyner, op. cit. p.7

subject to the authority of IADA.<sup>198</sup> In short, it was intended to continue the United States' strategic superiority over the Soviet Union.<sup>199</sup> Only five days later the Soviet Union presented a counter proposal by means of its representative to the United Nations, Andrey Gromyko. This proposal included the prohibition of nuclear weapons and the use of nuclear technology for peaceful purposes.<sup>200</sup> Accordingly, the United States had to destroy its nuclear weapons and share its technological information on the nuclear fuel cycle. These proposals were difficult to accept for both parties because of distrust in each other, and as a natural consequence, they rejected each other's proposals.<sup>201</sup>

The Soviet Union became the second nuclear weapon state, much earlier than estimated, in 1949,<sup>202</sup> and the United States lost its nuclear monopoly and strategic advantage over the Soviet Union in a short period.<sup>203</sup> Despite realization of a nuclear bomb test the Soviet Union declared that there was no change in their position on the absolute prohibition of nuclear weapons.<sup>204</sup>

In 1952, the United Kingdom also acquired nuclear weapons and became the third "nuclear weapon state".<sup>205</sup> Shortly after this date, Dwight Eisenhower was elected as the new president of the United States, and his famous address, known as the "Atoms for Peace" plan, at the UN General Assembly started a process that resulted in the establishment of the International Atomic Energy Agency (IAEA).<sup>[206] [207]</sup>

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<sup>198</sup> Ibid. pp.7-8, Hans Blix, "Introduction: The Present Nuclear Order, How it came about, Why it may not last" , pp.3-4 in "Nuclear Proliferation and International Order: Challenges to the Non-Proliferation Treaty", Ed. by Olav Njølstad, Routledge, New York, 2011

<sup>199</sup> Daniel H. Joyner, op. cit. pp.7-8

<sup>200</sup> Ibid. pp.8, David Fischer, op. cit. pp.19-20, Sergey Oznobishchev, "Creating Nuclear Order: An open-ended Process", p.179, in "Nuclear Proliferation and International Order: Challenges to the Non-Proliferation Treaty", Ed. by Olav Njølstad, Routledge, New York, 2011

<sup>201</sup> "...but soon found themselves trapped in a double race: an all-out race for the most advanced conventional and nuclear weaponry, and an almost equally frenetic "race of peace initiatives" aimed at winning the sympathy of the international community." Sergey Oznobischev, Ibid. p.179

<sup>202</sup> Many US officials imagined that the Soviets were 20 years behind the United States in terms of nuclear technology. David Fischer, op. cit. p.21

<sup>203</sup> Sergey Oznobishchev, op. cit. pp.178

<sup>204</sup> Ibid. pp.178-179

<sup>205</sup> David Fischer, op. cit. p.21

<sup>206</sup> Daniel H. Joyner, op. cit. p. 9, David Fischer, op. cit. p. 23, Hans Blix, op. cit. p.4

<sup>207</sup> Although D. Eisenhower emphasized to the use of nuclear energy for peaceful purposes, during his presidency the quantity of nuclear weapons of the United States increased significantly (from 1,400 to 20,000). In the same period, the Soviets' nuclear stockpile increased from 120 to 1000. Sverre Lodgaard, "Nuclear Disarmament and Non-Proliferation: Towards a Nuclear-Weapon-Free World?", Routledge, New York, 2011, p.47

## The International Atomic Energy Agency (IAEA)

The statute of the IAEA was adopted in 1957.<sup>208</sup> The main objective of agency is enhancing the contribution of nuclear energy to peace and prosperity worldwide.<sup>209</sup> According to recent data there are 162 member states of the agency.<sup>210</sup> It has authority to audit whether nuclear technology is being used for peaceful purposes. Therefore, the agency inspects the nuclear activities of countries, and carries out on-site inspections by the means of experts (safeguards).<sup>211</sup> Overall it is hard to say that the agency's control mechanism has been very effective because the agency does not have sanctioning power over member states.

China tested its first nuclear weapon in 1964; in other words, nuclear proliferation continued after the IAEA's founding.<sup>212</sup> The IAEA has played an intermediary role among member states. Daniel Joyner claims that the IAEA's safeguarding role gained importance after "... *its formal inclusion in the NPT safeguards system through the provisions of the NPT Article III.*"<sup>213</sup>

According to this procedure (the IAEA Safeguard Agreements), known as the Model Protocol (INFCIRC/153), the Agency gained an authority to audit, but it was limited. "...*the IAEA monitored only those facilities declared by the inspected country and did not seek possible undeclared nuclear installations, lacking a clear political mandate from its members to do so.*"<sup>214</sup> This insufficiency of its control mechanism enabled the execution of secret nuclear weapons programs. After the disclosure of Iraq's clandestine nuclear weapons program, a new protocol (known as the Additional Protocol) was created that extended the authority of the Agency.<sup>215</sup> According to the Additional Protocol, IAEA safeguards can conduct inspections at undeclared sites without prior notice. Unlike the model protocol, it is not mandatory to become a party

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<sup>208</sup> David Fischer, op. cit. pp.31, Joseph Cirincione, Jon B. Wolfsthal, Miriam Rajkumar op. cit. pp. 29, Hans Blix, op. cit. pp.4

<sup>209</sup> The Statute of the IAEA, <<http://www.iaea.org/About/statute.html#A1.1>>

<sup>210</sup> For some features of the Agency, See; IAEA by numbers, <[http://iaea.org/About/by\\_the\\_numbers.html](http://iaea.org/About/by_the_numbers.html)>, [Access Date:19/09/2014]

<sup>211</sup> The Statute of the IAEA, Article XII, <<http://iaea.org/About/statute.html#A1.12>>, [Access Date:12/10/2014], Joseph Cirincione et. al. op. cit. pp.30

<sup>212</sup> Joseph Cirincione, et. al. op. cit. pp.8

<sup>213</sup> Daniel H. Joyner, op. cit. pp.12

<sup>214</sup> Joseph Cirincione, et. al. op. cit. pp.30

<sup>215</sup> David Fischer, op. cit. pp.282-283, Joseph Cirincione, et. al. op. cit. pp.30-31

of the Additional Protocol.<sup>216</sup> This situation may seem like a deficiency, but almost all parties accepted the protocol.<sup>217</sup>

An effective control mechanism is necessary in order to prevent nuclear armament. Therefore, the International Atomic Energy Agency (IAEA) has worked in coordination with the UN Security Council. The most important sanctioning power of the IAEA is submitting reports concerning any violation of the agreement to the UN Security Council.<sup>218</sup>

### **The Treaty on the Non-Proliferation of Nuclear Weapons (NPT)**

The NPT lies at the center of global nuclear non-proliferation regime and constitute the most important legal basis of the regime. Five countries that have nuclear weapons<sup>219</sup> (the United States, the Soviet Union, China, France and United Kingdom) reached an agreement on the Non-Proliferation of Nuclear Weapons. These states could not reach a consensus on the adoption of non-first-use<sup>220</sup> as a principle. So, nuclear weapon states focused on non-production and non-possession of nuclear weapons by other states and create an international mechanism to prevent the emergence of new potential competitors.<sup>221</sup> In July 1968, the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) was opened to signature,<sup>[222][223]</sup> and it entered into force in March

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<sup>216</sup> Joseph Cirincione, et. al. op. cit. pp.30-31

<sup>217</sup> According to recent data, the additional protocol was signed by 144 parties and ratified by 124 parties. Status of Additional Protocols (as of August 2014) <[http://www.iaea.org/safeguards/documents/AP\\_status\\_list.pdf](http://www.iaea.org/safeguards/documents/AP_status_list.pdf)>, [Access Date: 15/10/2014]

<sup>218</sup> The Statute of IAEA, Article III (Functions), <http://www.iaea.org/About/statute.html#A1.3>, 20 December 2012

<sup>219</sup> These are also permanent members of the UN Security Council.

<sup>220</sup> Non-First-Use refers to a policy or a commitment by a NWS not to use nuclear weapons in a war or conflict unless an enemy use nuclear weapons first. See for detailed information about nuclear doctrines and strategies of these states: Mark Fitzpatrick et. al. (Eds), "Nuclear Doctrines and Strategies", IOS Press, Amsterdam, 2008.

<sup>221</sup> Blix, Hans, Introduction: The Present Nuclear Order, How it came about, why it may not last, pp.2-3 in Olav Njølstad Ed., *Nuclear Proliferation and International Order: Challenges to the Non-Proliferation Treaty*, Routledge, New York, 2011.

<sup>222</sup> On the same day Iran signed the treaty and in 1970 it was approved by Iran's Parliament. Jahanpour, F.

<sup>223</sup> According to Article X, the duration of this agreement was 25 years. After this period, in 1995 the NPT Review and Extension Conference extended the agreement's duration indefinitely. Treaty on the Non-Proliferation of Nuclear Weapons (NPT), The Nuclear Threat Initiative website.

1970.<sup>224</sup> According to this treaty, there were two types of members: Nuclear Weapon States (NWS) and Non-Nuclear Weapon States (NNWS). “Nuclear Weapon States”<sup>225</sup>, in accordance with the provisions of this agreement, legitimately have the right to possessing nuclear weapons. This article is one of the most important reasons for criticism of the NPT because it is conserving an inequity between NWS and NNWS, because only P5 (Permanent Members of the UN Security Council) states can “legitimately” possess nuclear weapons but rest of parties cannot.<sup>226</sup> Non-Nuclear Weapon States were committed not to produce, buy or possess nuclear weapons and other nuclear explosive tools (Article II). NPT is considered to consist of three pillars: Non-Proliferation, Nuclear Disarmament and Peaceful use of Nuclear Energy (PUNE).<sup>227</sup> The first three articles of this treaty refer to nuclear non-proliferation. In Article I, NWS are encumbered to not transfer any nuclear weapon or nuclear weapon technology to NNWS and assumed the obligations as stated below:

...not in any way to assist, encourage, or induce any non-nuclear weapon State to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices, or control over such weapons or explosive devices.<sup>228</sup>

According to Article II, NNWS commit to not acquiring “*nuclear weapons or other explosive devices*”, and parties of the treaty are incorporated into the Agency’s monitoring mechanism by Article III. Article II illustrates that, according to this article, not only to acquiring complete nuclear weapons but also components of the nuclear explosives are prohibited.<sup>229</sup> According to Ronen, unless Article II interpreted in this

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<<http://www.nti.org/treaties-and-regimes/treaty-on-the-non-proliferation-of-nuclear-weapons/>>, [Access Date:14/09/2014]

<sup>224</sup> Ibid.

<sup>225</sup> *States which have a nuclear weapon or product and explode other explosive tools before January 1, 1967* (Article IX/3). This article To reach full text of the agreement: <[www.fas.org/nuke/control/npt/text/npt2.htm](http://www.fas.org/nuke/control/npt/text/npt2.htm)> , [Access Date: 25 December 2012]

<sup>226</sup> David Albright and Kevin O’neill, “Nonproliferation: Jury-Rigged but Working”, p.81 in George A. Lopez and Nancy J. Myers(Eds.), “Peace and Security: The Next Generation”, Rowman & Littlefield Publishers, Oxford, 1997.

<sup>227</sup> Henry Sokolski, “Introduction: Nuclear Energy’s Security Story”, pp.9 in *Moving Beyond Pretense: Nuclear Power and Nonproliferation*, ed. by Henry Sokolski, Strategic Studies Institute and U.S. Army War College Press, June 2014, Sverre Lodgaard op. cit. pp.83-84

<sup>228</sup> NPT Article I

<sup>229</sup> Yaël Ronen, *The Iran Nuclear Issue*, Hart Publishing, Oxford, 2010, p.10

manner NNWS may construct all parts of a nuclear device and after withdrawal from the NPT can assemble the device.<sup>230</sup>

The IAEA and its safeguard system gained an influential position over nuclear nonproliferation by means the article III. NPT Article III.1 stipulates that:

Each non-nuclear-weapon State Party to the Treaty undertakes to accept safeguards, as set forth in an agreement to be negotiated and concluded with the International Atomic Energy Agency in accordance with the Statute of the International Atomic Energy Agency and the Agency's safeguards system, for the exclusive purpose of verification of the fulfillment of its obligations assumed under this Treaty with a view to preventing diversion of nuclear energy from peaceful uses to nuclear weapons or other nuclear explosive devices. Procedures for the safeguards required by this Article shall be followed with respect to source or special fissionable material whether it is being produced, processed or used in any principal nuclear facility or is outside any such facility. The safeguards required by this Article shall be applied on all source or special fissionable material in all peaceful nuclear activities within the territory of such State, under its jurisdiction, or carried out under its control anywhere.

The Safeguards system which is the fundamental tool of the nonproliferation regime to verifying the fulfillment by member states to their nonproliferation necessities. Yaël Ronen claims that “*The Safeguards system is not a part of the NPT mechanism and is therefore available to non-members states.*”<sup>231</sup> The objective of the safeguard system is to guarantee the use of nuclear energy for peaceful purposes. According to Article III each NNWS have to sign a safeguards agreement with the IAEA. Also, “*According to Article 26 of the standard safeguard agreement, if the state party withdraws from the NPT, the safeguards agreement is automatically terminated.*”<sup>232</sup> Safeguards agreements draw a general framework which indicated mutual rights and responsibilities of the states and the IAEA. In 1971, the *Model Protocol* (INFCIRC/153) was established as a control mechanism, but it was powerless because according to this protocol, IAEA inspectors could check the nuclear activities of parties to the NPT in only facilities allowed by the state and only if informed in advance.<sup>233</sup> Limited controls, naturally, could not prevent countries with secret nuclear weapons programs to reach its objectives. It is easily understood that this protocol is not sufficiently effective due to the fact that India and Pakistan have nuclear weapons. More stringent measures must be taken in order to prevent nuclear armament. The presence of

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<sup>230</sup> Ibid.

<sup>231</sup> Ibid. p.11

<sup>232</sup> Ibid. p.12

<sup>233</sup> INFCIRC/153, <<http://www.iaea.org/Publications/Documents/Infcircs/Others/infcirc153.pdf>>, [Access Date:21/12/2013]



Iraq's clandestine nuclear weapons program has revealed the shortcomings of the safeguards systems. After this event the “Additional Protocol (INFCIRC/540)”<sup>234</sup> another important step in this direction, came onto the agenda. In 1990 the IAEA certified that Iraq was in full compliance with its NPT obligations, but then suspicions about Iraq’s secret nuclear weapons program increased, so the IAEA adopted a strengthened safeguards regime known as “Program 93+2” in May 1997.<sup>235</sup>

The IAEA Secretariat and state parties reach an agreement which called “Subsidiary arrangements” for detailed implementation of procedures.<sup>236</sup> Article III.2 of the NPT stipulates restrictions on the export of fissile materials to NNWS unless such material under IAEA safeguards. Various groups of states voluntarily launched some initiatives in the trade of sensitive materials for the implementation of this provision. The Nuclear Suppliers Group (NSG) and the Zangger Committee (ZAC) can be shown as examples of these initiatives.<sup>237</sup> Ronen claims that: “*These groups formulated non-binding export control guidelines under which recipient state must meet certain security standards to be eligible to participate in nuclear trade.*”<sup>238</sup> There is a discussion on export control regimes about their consonance with the provisions of the NPT. Some states argue that export control regimes not a part of the NPT but increasing effectiveness of the Article III.2 which prohibit transferring sensitive materials to NNWS. These export control regimes provide an audit mechanism over sensitive fissile materials and components of the nuclear technology, and support safeguards system.<sup>239</sup> Ronen states that “*...at the 2005 NPT Review Conference, attempts were made to tie export controls into the broader issue of nuclear proliferation and to strengthen them.*”<sup>240</sup> According to the claims of those on the other side of the discussion, export control regimes are contrary to the NPT Article IV which contains “*the inalienable right to the peaceful use of nuclear energy*”.<sup>241</sup>

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<sup>234</sup>INFCIRC/540, <<http://www.iaea.org/Publications/Documents/Infcircs/1997/infcirc540c.pdf>>, [Access Date: 21/12/2013]

<sup>235</sup> Chen Zak. “*Iran's Nuclear Policy and the IAEA: An Evaluation of Program 93+2*”. Washington DC: The Washington Institute for Near East Policy, 2002, <[http://www.washingtoninstitute.org/uploads/Documents/pubs/IRANS\\_NUCLEAR\\_POLICY\\_AND\\_THE\\_IAEA.pdf](http://www.washingtoninstitute.org/uploads/Documents/pubs/IRANS_NUCLEAR_POLICY_AND_THE_IAEA.pdf)>, [Access Date: 24/12/2014]

<sup>236</sup> Yaël Ronen, op. cit. p.12

<sup>237</sup> Ibid.p.14

<sup>238</sup> Ibid.

<sup>239</sup> Ibid.

<sup>240</sup> Ibid.

<sup>241</sup> Ibid.

The second pillar of the NPT, nuclear disarmament, is manifested by Article VI. The first aim of this article is cessation of the nuclear arms race, and then achieves complete nuclear disarmament. The United States and the Soviet Union had almost all (98 %) nuclear stockpiles at one point in time.<sup>242</sup> Although there is progress, at least quantitatively, on the path to nuclear disarmament there is still a long distance to complete.

Another pillar of the NPT (Peaceful Use of Nuclear Energy) is conveyed in the fourth article. According to Article IV all parties of the treaty, properly to Article I and II, can research, produce and use nuclear energy with peaceful purposes; this is an “*inalienable*” right for non-nuclear states.<sup>243</sup> Article IV stipulates that:

Nothing in this Treaty shall be interpreted as affecting the inalienable right of all the Parties to the Treaty to develop research, production and use of nuclear energy for peaceful purposes without discrimination and in conformity with Articles I and II of this Treaty.<sup>244</sup>

There are differences in the interpretations of the article of this treaty. In the 1980s according to European view “*inalienable right*” enables any activity other than expressly prohibited nuclear detonation in the agreement. Bertrand Goldschmidt, who was the former French representative in the Board of governors of the IAEA, states that there were not any technical regulations on the IAEA safeguards and NPT policy until the mid-1970s. Goldschmidt summarize the situation at that time as follows:

...explosion was forbidden, everything else was allowed; and that nothing in NPT prohibited Party States from following the technical path of their choice.<sup>245</sup>

The European perspective on interpretation of Article IV was the dominant comment of that period. From the end of 1970s, the United States put forward a new nonproliferation policy which was restricting sensitive nuclear activities.<sup>246</sup>

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<sup>242</sup> Henry Sokolski, op. cit. p.9, The United States (55%) and the Soviet Union (%43) produced more than 127,000 nuclear warheads. George A. Lopez and Nancy J. Myers, “Peace and Security: The Next Generation”, Rowman & Littlefield Publications, Oxford, 1997, p.53.

<sup>243</sup> This article forms the foundation of Iran’s claims, and they frequently set forth this argument.

<sup>244</sup> <<http://www.un.org/en/conf/npt/2005/npttreaty.html>>

<sup>245</sup> Zhang Xinjun, “The Riddle of “Inalienable Right” in Article IV of the Treaty on the Non-Proliferation of Nuclear Weapons: Intentional Ambiguity”, *Chinese Journal of International Law*, Vol.5, No.3, 2006, p.651

<sup>246</sup> Ibid. pp.651-652

The nonproliferation experts of the United States stress that “inalienable right” should not be in contradiction with the Articles I and II, which stipulate some restrictions on sensitive materials.<sup>247</sup> Many different interpretations of the Article IV emerged and some of them were quite interesting. For instance, Frank Barnaby argued that a party to the NPT could produce the components of a nuclear explosive device.<sup>248</sup> There is not a consensus in the interpretation of Article IV.

In actuality, this treaty provides legitimacy to nuclear weapons (that only nuclear states have) while, on the other hand, giving a chance to reach nuclear technology to other signatory countries so that this technology can be sold to countries that wish to have nuclear energy.<sup>249</sup>

Although this regime provided the opportunity for more rigorous supervision (without notice, and with control over a much larger area), unlike the model protocol, signing the additional protocol is not mandatory. The weak point is the lack of necessity in signing the additional protocol, but signing this protocol can be useful for creating a good image, especially an image of carrying out peaceful nuclear activities. Iran signed the additional protocol, but it has not yet been approved by the parliament. This situation will be examined in more detail in the second part.

## **Conclusion**

There are many theoretical attempts to explain the reasons for nuclear armament, and these attempts allow assessing the nuclear weapons in a broad context. Realist and Neo-Realist approaches ignore many dimensions of the nuclear proliferation. So, as mentioned above, different approaches will be used in this thesis. Scott Sagan’s categorization (Three Models) will be applied because it offers a convenient way to take advantage of different approaches.

The nuclear programs are issues that need to be addressed sensitively because nuclear energy generation and nuclear weapons production occur after similar processes. Nuclear nonproliferation regime was created to prevent the use of nuclear

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<sup>247</sup> Ibid. p.652

<sup>248</sup> Ibid. pp.652-653

<sup>249</sup> Erdem Denk, op. cit.

technology on the outside of the peaceful purposes. The conversion and development of this regime were examined in this section.

In the next part of this thesis, the origin of the Iranian nuclear program will be discussed, after giving brief information about Iran's history and its economic and social structure. The relationship between nuclear nonproliferation regime and Iran's nuclear program will be emphasized.

## CHAPTER 2: IRAN AND ITS NUCLEAR PROGRAM

In the earlier part of this thesis, basic technical information on the generation nuclear energy and production of nuclear weapons were given. The main components of the nuclear nonproliferation regime were also noted. In this part of the thesis, brief information will be given about history of Iran and its geographical, social and economic structure because it will be helpful in understanding the formation of national identity of Iran. Then, nuclear program of Iran and the process in the aftermath of nuclear dispute will be discussed which has become an international issue. Also short information that may help to understand the political stance of Iran in this process will be given at the beginning of this chapter.

### 2.1: IRAN

Iran, whose official name is Islamic Republic of Iran (Jomhuri-ye Eslami-ye Iran) was known as “Persia” until 1935. Reza Shah who was influenced by German nationalism changed the country’s name to signify the “Aryan<sup>250</sup>” race of its population. “Iran” is derived from “Aryan”<sup>251</sup> and refers to “the land of the Aryans”<sup>252</sup> After the Islamic Revolution in 1979; “Islamic Republic” was added to the name of this land. On April 1, 1979, a national referendum in which only one choice was offered (either yes or no to establish an Islamic Republic) was held.<sup>253</sup> *“Ayatollah Khomeini declared an Islamic republic with a new Constitution reflecting his ideals of Islamic government.”*<sup>254</sup> Iran is located in Southwest Asia and shares its borders with 7 countries (to its north Azerbaijan, Armenia, Turkmenistan and Turkey; in the west Iraq; in the east Afghanistan and Pakistan) and 3 natural borders with the Caspian Sea,

<sup>250</sup> Arya (اریا) or Ayria (ایریا) means just (درست) or faithful (باوفا), Hassan Pirnia, “Tarikh-e Iran: Ez Madha ta Enkeraz-e Sasanian” (تاریخ ایران از مادها تا انقراض ساسانیان), Tehran, Debir, 1392(2013), third edition, pp.24

<sup>251</sup> Ehsan Yarshater, “Persia or Iran, Persian or Farsi”, Iranian Studies, Vol.XXII, No.1, 1989 <<http://www.iran-heritage.org/interestgroups/language-article5.htm>>, [Access Date 16/08/2014]

<sup>252</sup> Daniel, Elton L. “The History of Iran”, Greenwood, 2nd ed., 2012, p.3

<sup>253</sup> Ervand Abrahamian, *A History of Modern Iran*, Cambridge University Press, 2008

<sup>254</sup> “Islamic Revolution of 1979”, <[www.iranchamber.com](http://www.iranchamber.com/history/islamic_revolution/islamic_revolution.php)>, <[http://www.iranchamber.com/history/islamic\\_revolution/islamic\\_revolution.php](http://www.iranchamber.com/history/islamic_revolution/islamic_revolution.php)>, [Access Date 16/08/2014]

Persian Gulf and Gulf of Oman.<sup>255</sup> It has 1.684.000 square kilometers of surface area (more than twofold Turkey's land).<sup>256</sup> Iran is home to many ethnic groups: Persian, Azeri, Kurd, Arab, Lur, Balloch, Qashqai, Turkmen, Gilaki, etc. Different sources provide different amounts regarding this issue.<sup>[257][258]</sup> Ethnicity is not taken into account for the population census, therefore data on the numbers of minorities remain as an estimate. According to the Constitution of the Islamic Republic of Iran (Article 15), the official language and script of Iran is Persian. The official religion of Iran is Islam and the madhab<sup>259</sup> is the Twelfer Jafari school.<sup>260</sup>

Iran has an important strategic geographical position as a crossroad between Central Asia and the Middle East.<sup>261</sup> Iran had sections of important trade routes such as the Silk Road and the Spice Route. Today also the geographical location of Iran provides significant advantages as in the past. The Strait of Hormuz, located between Iran and Oman, especially provides great advantages to Iran because this strait is the world's most important oil chokepoint.<sup>262</sup> Moreover, it has significant energy resources; Iran has the largest proven natural gas reserve (with an 18.2 % share of the total) in the

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<sup>255</sup> Central Intelligence Agency (CIA), The World Factbook, <<https://www.cia.gov/library/publications/the-world-factbook/geos/ir.html>>, [Access Date: 15.09.2014]

<sup>256</sup> Ibid.

<sup>257</sup> For instance; according to CIA World Factbook, Iran's ethnic distribution is as follows; Persian 61%, Azeri 16%, Kurd 10%, Lur 6%, Baloch 2%, Arab 2%, etc.

<sup>258</sup> Another source gives different ratios; Persian 51%, Azeri 24%, Gilaki and Mazandarani 8%, Kurd 7%, and Arab 3, etc. Azeri nationalists argue that rate of Azeri population is 35%. See for details; Tohidi, Nayereh., "Ethnicity and Religious Minority Politics in Iran", *Contemporary Iran: Economy, Society, Politics*, ed. Ali Gheissari, Oxford University Press, New York, 2009, p.300

<sup>259</sup> Religious sect or denomination, school of law.

<sup>260</sup> Constitution of Islamic Republic of Iran, Article 12.

<sup>261</sup> Due to its location, it is also the point of intersection of many different cultures and societies. This situation has led to the cultural enrichment of Iran. Thanks to its durable culture, it has affected many different occupants. For instance, Persian (Farsi) was the official language of states that governed Iran because there was an accumulation of knowledge on government and bureaucratic structure in the lands in question. Iranian culture shows resistance to the domination of another culture. The Shuubiyya movement, which rejects Arab's superiority, found many fans in Iran. It can be shown as a reflection of this situation. "Shubbiyya", (Ed.) Ian Richard Netton, "Encyclopaedia of Islamic Civilisation and Religion", Routledge, 2008, pp.602-604

<sup>262</sup> U.S. Energy Information Administration, World Oil Transit Chokepoints, 22 August 2012, <[http://www.eia.gov/countries/analysisbriefs/World\\_Oil\\_Transit\\_Chokepoints/wotc.pdf](http://www.eia.gov/countries/analysisbriefs/World_Oil_Transit_Chokepoints/wotc.pdf)>, [Access Date:16.09.2014]

world, and in terms of proven oil reserve (with a share of 9.3%) Iran is the fourth wealthiest country.<sup>263</sup>

### 2.1.1: A Brief History of Iran

The Iranian plateau is an important transition zone between Central Asia and Western Asia, and many different tribes lived in this region such as the Persians, Medes, Assyrians, Turks, Arabs, and Elamites, etc. The Persians, who are Indo-Iranian by origin, founded a powerful empire and conquered almost the entire Middle East in a short time.<sup>264</sup> It is undeniable that the contribution and influences that the Persian Empire had on the formation of Iranian civilization and on its successors. The Persian Empire not only influenced its successors in terms of military-administrative perspectives, but also religious beliefs. Zoroastrianism<sup>265</sup> was adopted by Persian nobles and kings, but it could not spread among the public. According to this religion, the Persian Kings were God's representatives on Earth.<sup>266</sup> Alexander the Great<sup>267</sup> defeated the Persian Empire in 330 B.C. Sasanians who had seen themselves as the heirs of the Persian Empire seized domination of Iran in the 3rd century B.C. Zoroastrianism became the official religion of the Sasanid Empire and gained importance in community life. Sassanids, after providing political unity, struggled with the Roman Empire (afterward with the Byzantine Empire) for regional hegemony. This conflict between the two great empires provided a favorable environment for the spread of the Islamic State. In 636, at the result of the Battle of al-Qadisiyyah, the Sasanid Empire collapsed

<sup>263</sup> BP Statistical Review of World Energy June 2014, p.6 and p.20, <<http://www.bp.com/content/dam/bp/pdf/Energy-economics/statistical-review-2014/BP-statistical-review-of-world-energy-2014-full-report.pdf>>, [Access Date:18/09/2014]

<sup>264</sup> Ibid. pp. 127-129, William Hardy McNeill, "A World History", translated by Alaeddin Şenel, İmge Kitabevi Yayınları, Ankara, 2001, p.97

<sup>265</sup> Zoroastrianism, the ancient pre-Islamic religion of Iran that survives there in isolated areas and, more prosperously, in India, where the descendants of Zoroastrian Iranian (Persian) immigrants are known as Parsis, or Parsees. In India the religion is called Parsiism. Founded by the Iranian prophet and reformer Zoroaster in the 6th century BC, the religion contains both monotheistic and dualistic features. It influenced the other major Western religions—Judaism, Christianity, and Islam." Encyclopaedia Britannica, <<http://global.britannica.com/EBchecked/topic/658081/Zoroastrianism>>, [Access Date:18/10/2014]

<sup>266</sup> Alaeddin Şenel, op. cit. pp.113-115

<sup>267</sup> Iranians, do not use the adjective "Great" for Alexander who destroyed the Persian Empire. Alexander the Macedonian is used more frequently. Nationalists uses "Alexander the Villain" as the name for him. Abdullah Yegin, "Iran Siyasetini Anlama Kılavuzu", SETA Yayınları, Ankara, 2013, p.18

and an Islamic period started in Iran. In the Umayyad Dynasty era, Iranians were treated as second-class Muslims because they were not Arab. This racist policy increased the Iranians' already existing opposing reactions against the Umayyads.

The Abbasid caliphate came to an end in 1258 because of the Mongol invasions. From the 15th century, the Mongols began to lose power, and the Ak Koyunlu and Kara Koyunlu dynasties had control over a large part of Iran. In the beginning of the 16<sup>th</sup> century, the Shiite movement that was led by Ardabil sheiks gained strength. The leader of the movement, Ismail, won enough support from Turkmens, and captured Tabriz in 1501, and founded the Safavid dynasty as its Shah. Shi'ism<sup>268</sup> became the state religion, and the state endeavored to spread this religious sect in Iran. In this period, a "Shi'ite Ulama"<sup>269</sup> (Muslim theologians and scholars) emerged with the support of the Safavids, and Ismail provided Iran's religious integrity.<sup>270</sup> This situation is an important step in the formation of Iranian identity.

In 1722, the Safavid state collapsed as a result of the Afghan invasion.<sup>271</sup> In the late 18th century, the Qajar Dynasty seized the government in Iran and remained in power with the support of Britain and Tsarist Russia.<sup>272</sup> After the collapse of Tsarist Russia, Britain became the most important foreign power in Iran. In October 1925, the reign of the Qajar dynasty came to an end and Reza Shah ensured the foundation of the Pahlavi dynasty. Reza Shah tried many reforms<sup>273</sup> towards westernization and did not hesitate to use force for the realization of these reforms<sup>274</sup>. Iran, relatively, has modernized and evolved, but this development has not reflected evenly among all sections of society. Reza Shah Pahlavi established good relations with Nazi Germany. He was influenced by the Aryan race discourse, which is why Persia was renamed Iran,

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<sup>268</sup> "Shi'ism" is one of the schools of Islamic Law. Origin of "Shi'ah", means "to follow" in Arabic. This word actually short form of "Shi'ah-i Ali"(Ali's followers/supporters). There are many branches of this religious sect but, unless stated otherwise, "Shi'ite", "Shi'ism" and related words refers to Twelver Shi'ite.

<sup>269</sup> Ulama will be one of the most important Dynamics of Iranian Society. Both will increase the impact on the state and the public.

<sup>270</sup> Gustave Edmund Von Grunebaum, "İslamiyet: Osmanlı Devletinin Kuruluşundan Günümüze Kadar-1", (Second Book), Translated by; Esat Mermi Erendor, Bilgi Yayınevi, 1993, Ankara, pp.141-143

<sup>271</sup> Yılmaz Karadeniz, "Iran Tarihi (1700-1925)", Selenge Yayınları, İstanbul, 2012, pp.88-91

<sup>272</sup> Ibid. p.154

<sup>273</sup> Some of these reforms are Western-style clothing and lifestyle, secular education, a legal system similar to Western ones, etc. See for detailed information about Reza Shah's reforms; William S. Haas, "Iran", Columbia University Press, New York, 1946, pp. 137-168

<sup>274</sup> Ibid. pp.178-181, For more details about reforms, See. Ervand Abrahamian, op. cit. pp.96-120



a name referring to the Aryan race.<sup>275</sup> In 1941, the Soviet Union and England wanted to all Germans to be deported from Iran. Due to the failure of fulfilling this request, Soviet and British forces invaded Iran. Shah Reza Pahlavi was dethroned and exiled to South Africa. His son, Mohammad Reza, was declared the new Shah of Iran.<sup>276</sup>

The Iranian economy was in a difficult situation due to the World War II. Economic and social discontent continued in the postwar period. According to Iranian nationalists, the agreement between the state and the Anglo-Iran Oil Company<sup>277</sup> was extremely unfair. Mohammad Mosaddeq, leader of the National Front, made a legislative proposal in March 1951. This event was rebuffed by the British and American governments, and these two states launched an international boycott against Iranian oil.

Mohammad Mosaddeq, a prominent nationalist politician, criticized the Shah's policy "positive equilibrium". "Positive equilibrium" proposed equivalent concessions to great powers.<sup>278</sup> Mosaddeq put forward the concept of a "*negative equilibrium*" as a refutation of positive equilibrium. According to him, positive equilibrium endangered Iran's existence and made Iran "capitulating" to great powers<sup>279</sup>. In Mosaddeq's concept "*negative*" signified Iran's non-aligned status. For him, non-alignment with both the United States and the Soviet Union was necessary to develop Iranian national sovereignty.<sup>280</sup>

In 1953, Mohammad Mosaddeq was deposed as the result of a coup (known as Project Ajax<sup>281</sup>) that was organized by CIA and MI6.<sup>282</sup> This coup left a profound and permanent impression on the political history of Iran. The coup weakened the monarchy's legitimacy and increased anger toward America and Britain. Even today, it is an element of the distrust felt toward the West.

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<sup>275</sup> Ervand Abrahamian, op. cit. p.96

<sup>276</sup> Ibid. pp. 184, Ervand Abrahamian, op. cit. p. 130

<sup>277</sup> Anglo-Persian Oil Company changed its name due to the Shah's request.

<sup>278</sup> Ervand Abrahamian op. cit. p.114

<sup>279</sup> Ibid. p.114

<sup>280</sup> Stephen C. Poulson,., "Social Movements in Twentieth-Century Iran: Culture, Ideology, and Mobilizing Frameworks", *Lexington Books*, 2006, pp.168

<sup>281</sup> Nikkie, R. Keddie, "Modern Iran: Roots and Results of Revolution", Yale University Press, (updated edition), 2006, pp.98. For more information about the coup, See: Christopher J. Petherick (Ed.), "The CIA in Iran: The 1953 Coup and the Origins of the US-Iran Divide", American Free Press, 2007. And, Darioush Bayandor, "Iran and the CIA: The Fall of Mosaddeq Revisited", Palgrave Macmillan, New York, 2010.

<sup>282</sup> Ibid. pp.186-187, Ervand Abrahamian, op. cit. pp.157-161

After the coup, the United States' weight on the economy and politics in Iran rose dramatically. There was no political freedom in Iran between 1953 and 1979, and Shah Mohammad Reza ruled with dictatorship.<sup>283</sup> The United States pressured Iran to liberalize its regime, and encouraged it to undertake reforms which came to be termed the "White Revolution". These reforms included some important changes such as state-led industrialization, land reform, a literacy programme and the promotion of women's place in public life. However, this reform movement did not reduce the response to the regime.<sup>284</sup>

After the coup, Iran became an important American ally in the Middle East. Many military and economic agreements were signed between America and Iran, and the Mohammad Reza Shah was a major recipient of American arms. International oil prices increased four times after the 1973 Arab-Israeli war because of OPEC's (Organization of Petroleum Exporting Countries) decision. Iran's oil revenues increased and the Shah focused on industrialization and armament. Increasing oil revenues made for the easy armament of Iran, and it became the fifth largest military power in the world,<sup>285</sup> but 400.000 strong armed forces failed to prevent the revolution and in a few weeks broke down.<sup>286</sup>

Ayatollah Ruhollah Khomeini sharply criticized the regime and this criticism led to his exile in June 1963. William Cleveland argues that Khomeini criticized Mohammad Reza Shah in many aspects. His criticism has focused mostly on the following topics: granting concessions from Iran's independence, corruption, ignoring the people's Islamic faith.<sup>287</sup>

The Shah's understanding of foreign policy was based on the integration with the West, so he abandoned a balanced policy and took a place by the United States' side during the Cold War. Also, the Shah supported Israel, other non-Arab countries, against the rising Arab nationalism especially after the 1973 Arab-Israeli war.

After the withdrawal of Britain from the Gulf, in 1971, Iran immediately seized three islands (Abu Musa, Greater Tunbs and Lesser Tunbs), and Iraq broke diplomatic

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<sup>283</sup> William L. Cleveland, Martin Bunton, "A History of the Modern Middle East", *Westview Press*, 2009, p.293

<sup>284</sup> Fred Halliday, "The Middle East in International Relations: Power, Politics and Ideology", *Cambridge University Press*, 2005, pp. 103-104

<sup>285</sup> William L. Cleveland, Martin Bunton, op. cit. pp.294-295

<sup>286</sup> Fred Halliday. op. cit. pp.104-105

<sup>287</sup> William L. Cleveland, Martin Bunton, op. cit. p.294

relations with Iran after this incident. Iraq and Iran signed an agreement, the Algiers Agreement, in which Iraq conceded Iran's equal navigation rights in the Shatt al Arab, and Iran agreed to end support for the Kurdish rebellions.<sup>288</sup>

In 1978-79 Shah Mohammad Reza was overthrown and the Islamic Republic of Iran was founded. The Islamic Revolution in Iran was unexpected because the regime of the Shah was seemingly stable<sup>289</sup>. There were many causes, dimensions and consequences of the Islamic Revolution. The capacity of this study is not suitable for a deep analysis of the revolution, so only some points of the revolution will be explained. According to Fred Halliday, the causes of the revolution were: Rapid and uneven economic development (urban-village differentiation), political weakness of the monarchy, a broad coalition of opposition forces (liberals, guerillas, clergy, bazaar...), the mobilizing role of Islam (Shi'ite Islam particularly), and the ambivalent international context.<sup>290</sup>

Ayatollah Khomeini became supreme leader of the Islamic Republic of Iran after consolidation of the regime. According to his concept of "velayat-e faqih" Iran should be ruled under "faqihs", until the return of the 12<sup>th</sup> imam, the hidden Mahdi. Since only the hidden imam has the authority to rule, faqihs just prepare the world to for his return.<sup>291</sup> Khomeini thereby legitimated his authority by using this concept, and also gave himself infallibility.<sup>292</sup> Ayatollah Khomeini handed himself all power of authority. The Islamic Revolution was directed not only against to the Shah regime but also its international relations. Anger toward the Great Powers can be seen in Khomeini's discourse; he announced the United States as "*Great Satan*"<sup>293</sup> and the Soviet Union as "*Little Satan*". This discourse was reflected in the foreign policy of Iran, "*Neither East nor West*" policy.<sup>294</sup> Iran tried to isolate itself from great powers because according to Khomeini isolation was necessary to maintain independency.

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<sup>288</sup> Federal Research Division, "Iran: A Country Study", Kessinger Publishing, 2004, pp.72-73

<sup>289</sup>Fred Halliday, "The Iranian Revolution in Comparative Perspective" in Fred Halliday *Islam and the Myth of Confrontation*, London, New York: I.B. Tauris, 1996, pp.42

<sup>290</sup> Ibid. pp.50-67

<sup>291</sup>Abrahamian. pp.164

<sup>292</sup>Ibid. pp.164

<sup>293</sup>For the analysis of such statements expressed by the USA and Iran, See; William O. Beeman, "The 'Great Satan' vs. the 'Mad Mullahs': How to the United States and Iran Demonize Each Other", Praeger Publishers, London, 2005

<sup>294</sup> İhsan Dağı,Ortadoğu'da İslam ve Siyaset, İstanbul, *Boyut Kitapları*, 2002, pp.78

Another policy of Iran was “*exporting the Revolution*”. The underlying idea was that Iran must be the leader of the Islamic world because it is the only country under the rule of Velayat-e Faqih. According to this theory, “Imam” Ayatollah Khomeini represents the legitimate right to govern the Islamic world until the return of the twelfth imam the hidden Mahdi. Baqer Moin expresses this discourse as follows:

...Not only was he [Khomeini] now the leader of the revolution in Iran, but the ‘Imam of the Islamic Community of the World’ and the ‘Hope of the World Oppressed’...<sup>295</sup>

According to Bani Sadr, the first president of Iran, in order to keep the Islamic Revolution, Iran has to create a congenial security environment; otherwise other countries will come to Iran to plot against Iranians.<sup>296</sup> Bani Sadr has a more defensive understanding than Khomeini about exporting the revolution.<sup>297</sup>

The Iran-Iraq war began in September 1980 with the Iraq’s invasion of Iran by air and land, and it became one of the longest conventional wars of the 20<sup>th</sup> century, lasting almost eight years. It was the bloodiest and most destructive war since World War II. The estimated cost included more than 1 million dead, 1 million refugees and thousands of prisoners of war.<sup>298</sup>

The Iran-Iraq War was multifaceted and included religious schisms, border disputes, and political differences. Conflicts contributing to the outbreak of hostilities ranged from centuries-old Sunni-versus-Shia and Arab-versus-Persian religious and ethnic disputes, to a personal animosity between Saddam Hussein and Ayatollah Khomeini.<sup>299</sup>

This war has left quite deep scars on the Iranian state and society. It was observed as impossible to conduct foreign policy as alleged after the Islamic Revolution. It was realized that there was no consensus on Iran’s position in the Islamic World. This war made an impression as a “common pain” in the collective memory of Iranian society.

<sup>295</sup> Baqer Moin, “Khomeini: Life of the Ayatollah”, New York, *I.B. Tauris*, 1999, p.229

<sup>296</sup> Shireen T. Hunter, “The Future of Islam and the West: Clash of Civilizations or Peaceful Coexistence?”, Washington DC, Greenwood Publishing Group, 1998, pp.134

<sup>297</sup> For analysis of the conversion of these policies, See; Nasser Saghafi Ameri, “*Iranian Foreign Policy: Concurrence of Ideology and Pragmatism*”, Middle East Institute, 29 January 2009, <<http://www.mei.edu/content/iranian-foreign-policy-concurrence-ideology-and-pragmatism>>, [Access Date:17 January 2014] For more detail about the causes of the break between the eastern and western blocks, See: Maziar Behrooz., “Trends in the Foreign Policy of the Islamic Republic”, in (Nikkie R. Keddie and Mark J.Gasiorowski, Ed.): *Neither East Nor West: Iran, The Soviet Union And The United States*. New York, 1990

<sup>298</sup> Will D. Swearingen, “Geopolitical Origins of Iran-Iraq War”, *Geographical Review*, vol.78, no:4 (Oct.,1988), pp.405

<sup>299</sup> Iran-Iraq War (1980-1988), <<http://www.globalsecurity.org/military/world/war/iran-iraq.htm>>, [Accessed Date: 15 January 2014]

Even today, in many cities it is possible to witness thousands of Iranians' pictures who lost their lives in the war. Chemical weapons used by Iraq, the international community's stance on this case, and the arms embargo led to changes in Iran's security perceptions.

## 2.1.2: Social and Economic Structure of Iran

Figure 6: Minorities in Iran



Source: <<http://www.lib.utexas.edu/maps/iran.html>>

According to the Constitution of Iran (Article 13) only worshippers of three religions (Christianism, Zoroastrianism and Judaism) are recognized as the “religious minority”.<sup>300</sup> These minorities are entitled to be represented in parliament. The

<sup>300</sup> According to official data of 2011, the populations of religious minorities are as follows: Christian 117.704, Jewish 8.756, Zoroastrian 25.271 and others 49.101. “Selected Findings of National Population and Housing Census, 2011”, I.R.I Vice Presidency for Strategic Planning and Supervision Statistical Centre of Iran, p.8, <<http://iran.unfpa.org/Documents/Census2011/2011%20Census%20Selected%20Results%20-%20Eng.pdf>>, [Access Date:28/9/2014]

Constitution of Iran indicates that the right to representation of minorities in the following way:

The Zoroastrians and Jews will each elect one representative; Assyrian and Chaldean Christians will jointly elect one representative; and Armenian Christians in the north and the south will each elect one representative.<sup>301</sup>

Even though the followers of Zoroastrianism are less today, Zoroastrianism's impact on the culture of Iran is quite high. Festivals that have great importance for Iranians can be considered as the heritage of Zoroastrianism.<sup>302</sup>

### **Social Dynamics of Iran**

“Social Dynamics” encompasses both social classes and social groups who are not actually a class but acting as the representative of a social class.<sup>[303] [304]</sup> The emergence of these dynamics in Iran, are mostly due to historical and structural reasons. In the Pahlavi period, strengthening the central administration and the transition efforts to a capitalist system has led to the decomposition of Iranian society. Capitalization highlighted trade and industrialization which disturbed the social classes of the settled domestic economic structure. The Pahlavi government carried out a policy against traditional dynamics of society (Ulama, tribes, and artisans).<sup>305</sup> On the other hand, a working class and a new middle class emerged as the modern social dynamics. Conflict between traditionalism and modernism shows itself clearly in the social, economic, cultural and political arenas.<sup>306</sup> The most important traditional social dynamics are landowning aristocracy, clergy, artisans, petty bourgeoisie and peasantry.<sup>307</sup>

The landowning aristocracy was the most important ruling class in society, during the Qajar era. After Reza Shah came to power, strength of the central government increased and the political influence of notables was weakened, but

<sup>301</sup> Constitution of Islamic Republic of Iran, Article 64.

<sup>302</sup> Encyclopaedia Iranica, <<http://www.iranicaonline.org/articles/festivals-i>>, [Access Date:10/11/2014]

<sup>303</sup> Hüseyin Beşiriye (Hossein Bashiriyeh), “Iran’da Devlet, Toplum ve Siyaset”, translated by Mehmet Koç, Ağaç Kitabevi Yayınları, İstanbul, 2009, pp. 11.

<sup>304</sup> In the 1906 Revolution, according to electoral law, the population was divided into six layers; Lords of the Qajar, Ulama and Madrasah students, notables and rich people, prosperous tradesman, landowning aristocracy, and well-off craftsmen and artisans. Ervand Abrahamian, *op. cit.* pp.61

<sup>305</sup> *Ibid.* pp. 11-12

<sup>306</sup> *Ibid.* pp.13

<sup>307</sup> *Ibid.* pp.13-14

landowning aristocrats maintained their economic strength. After Reza Shah's exile in 1941, land aristocrats began to gain political power and influence between 1941 and 1961.<sup>308</sup> In 1961, the Land Reform law was adopted. According to this law, land gentries could own only one village; and other villages were incorporated in a process of "land division". The Land Reform was an important breaking point which weakened the strength of the land notables. After the Islamic Revolution, the distribution of land continued.

Shiite clerics have been one of the most important political dynamics since the Safavid era. They have had an important status among social groups, various rights and some extraterritorialities. The founding of institutions (Ijtihad and Marja-i Taklid) increased the authority of the Ulama.<sup>309</sup> Differences of opinion among the Ulama are also reflected in the relationship between the state and clergy.<sup>310</sup>

The last rulers of the Qajar Period began to make western-style reforms in Iran. The Ulama has raised a strong response to these reforms, mainly in defence of conservation of tradition, culture and national economy. In the 1960's Western-style development process (White Revolution) was accelerated by Mohammad Reza Shah and this process prepared a ground for the emergence of "Velayat-e Faqih theory".<sup>311</sup> With the approval of the constitution based on the principles of Velayet-e Faqih, the institutional structure of the state gained a religious nature and the role and influence of the clergy increased with the new regime.<sup>312</sup>

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<sup>308</sup> Sixty percent of MP's in XVIII. Parliament was composed of land aristocrats. Hüseyin Beşiriye (Hossein Bashiriyeh), "Iran'da Devlet, Toplum ve Siyaset", translated by Mehmet Koç, Ağaç Kitabevi Yayınları, İstanbul, 2009, pp.14-15

<sup>309</sup> There are two schools in Shiite Fiqh; Akhbari and Usuli. The Akhbari School claims that the congregation has continued to receive news (Akhbar) after the Imam's ghayba. So, Shiites should behave in accordance with this news. According to Akhbaris, there is no possibility of ijthad (independent legal reasoning). Unlike Akhbaris, Usulis claim that it is possible to create new ijthads and interpretations of newly emerging situations by using the mind. For detailed information about this debate, See: Habib Kartaloğlu, "In Imamiyyah Akhbārī-Usūlī Differentiation: The exemplification of Shaykh Al-Sadūq and Shaykh Al-Mufīd", Sakarya University Faculty of Theology Magazine, Vol. XIII, no:24, pp.193-216

<sup>310</sup> Imam Ayatollah Khomeini theorized this idea and "velayat-e faqih" theory became an important argument of the Islamic Revolution. This idea is very comprehensive, and it is outside the contents of this study. For details of this theory, See; Mehmet Serkan Taflıoğlu, "The Role of Ayatollah Khomeini in the Islamic Revolution and The Velayat-i Faqih", PhD Dissertation, Hacettepe University, Ankara, 2009.

<sup>311</sup> The theory of velayat-e faqih constitutes the source of legitimacy of the post-revolutionary order. Ali Morshedizad, "Ferheng-i Siyasi der Nezam-i Cumhuri-ye Islami- ye Iran", pp.316-320, in (Ed. by) Gholamreza Khajesarvi, "Politics and Government in the Islamic Republic of Iran", Imam Sadiq University Press, Tehran, 1390(2012)

<sup>312</sup> Hüseyin Beşiriye (Hossein Bashiriyeh), op. cit. p.18

Artisans and tradesmen were powerful in terms of economic and social position in the Qajar era. Economic development and the reconstruction policy of Reza Shah Pahlavi created significant changes in the market and the ruling classes of the market. In the 1960s production and industry areas came to the fore and artisans/tradesmen faced some limitations. In the 1970s, modern industrial and financial capital grew with the state's support and incentives. Therefore artisans and tradesmen gave their support to the opposition of the Ulama. After the Islamic Revolution, traditional bazaar artisans' role increased in the state's politics.<sup>313</sup>

The peasantry was not a very effective social dynamic until the 20<sup>th</sup> century. After the constitutional revolution, timar had been removed from the land system and most peasants turned into hamlet employees. In the beginning of the 20<sup>th</sup> century, influence of the landowning aristocracy and, as a natural result of this, pressure on the peasants, increased. The land reforms created a significant change in village community structure. A peasant class that constituted 15% of the village population formed after these reforms. In the revolutionary process, some peasant groups supported the Shah, but after the expansion of the revolutionary mass movement this support disappeared<sup>314</sup>. After the Islamic Revolution, in some areas, disputes emerged between former landowners and peasants. In 1981, the Revolution Council decided to establish seven-person committees in order to solve these problems. The committees played an important role in the solution of landownership issues.<sup>315</sup>

The new middle class (petty bourgeoisie) and working class are the most important modern social dynamics. The middle class, especially intelligentsia, became one of the main elements of the modern state and bureaucracy in the Pahlavi era. Liberalism, secularism and modernism were important values for this class. The Pahlavi government fulfilled some demands of this class in the social and cultural arenas (land reform, economic reforms, secular culture, dissemination of Iranian nationalism, struggle against Ulama's influence<sup>316</sup>, etc.).<sup>317</sup>

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<sup>313</sup> Ibid. pp.18-20

<sup>314</sup> Ibid. p. 21

<sup>315</sup> Ibid. p.22

<sup>316</sup> The Shah made his first attempt to reduce influence of Ulama after the death of Ayatollah Burujirdi (he was also only Marja-i Taqlid in Iran between 1946 and 1961) in 1961. For details of this struggle, See: Vanessa Martin, "Creating an Islamic State: Khomeini and the Making of a New Iran", I.B. Tauris, New York, 2003, pp.60-69

<sup>317</sup> Ervand Abrahamian, op. cit. pp.173-187



A new working class emerged in the northern part of Iran, after the success of the Constitutional Revolution and the October Revolution. In 1920, Iran's first Communist Party was found. This party urged workers and peasants to syndicate, act together and engage in social struggle. In the 1940s, the working class and the workers' union under the leadership of the Tudeh Party were at the peak of political activity. After the coup (1953), the labor movement in Iran entered a process of weakening. They formed worker councils in order to gain social and economic rights. After the Islamic Revolution, worker councils were replaced with Islamic Councils. Thus, independent activities of labor organizations ended.<sup>318</sup>

### **Economic Structure of Iran**

Iran was the world's 32<sup>th</sup> largest economy, in terms of GDP (Gross Domestic Product), in 2013<sup>319</sup> when, according to the World Bank's data, GDP per capita in Iran was 4763 American dollars.<sup>320</sup> Iran's economic system is a state-oriented economy. The main private sector areas are textile, automobile, food and metal production. Also, thousands of small-scale enterprises can be added to these. The bazaar has an important weight in the economy policy of Iran. Iran gives direction to its economy with five-year development plans.<sup>321</sup> In 2002, Iran declared the 20-year perspective document, the first long-term macro strategy of Iran, which aims for technological, economic and scientific development.<sup>322</sup> Although some important steps had been taken in order to become a

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<sup>318</sup> Ibid. pp. 24-25

<sup>319</sup> According to the World Bank's data. <<http://databank.worldbank.org/data/download/GDP.pdf>>, If Purchasing Power Parity (PPP) is taken as the basis, Iran was the world's 18<sup>th</sup> largest economy. <<https://www.cia.gov/library/publications/the-world-actbook/rankorder/2001rank.html?countryname=Iran&countrycode=ir&regionCode=mde&rank=19#ir>>, [Access Date:14/10/2014]

<sup>320</sup> The GDP per capita of Iran decreased in last three years. In 2011, it was 7006 American dollars. To compare with the countries of the region, See: <<http://knoema.com/rwomhgf/gdp-per-captita-ranking-middle-east-and-north-africa>>, [Access Date:14/10/2014]

<sup>321</sup> Glenn E. Curtis and Eric Hooglund (Editors), "Iran: A Country Study", Federal Research Division Library of Congress, (Fifth edition), First printing, 2008, pp. XXVII-XXVIII

<sup>322</sup> This document envisaged a multi-dimensional development. There are studies on each dimension. This study will only focus on its reflection in foreign policy. "Iran's Expediency Council approved the 20-Year Vision Plan to promote the position of the Islamic Republic of Iran in national, regional and international levels in which Iran becomes a developed country in twenty years, with the first economic, scientific and technical stand in the region." Mahmoud Vaezi, "Iran's Constructive Foreign Policy under 20-Year Vision Plan", Center For Strategic Research, March 2009, <<http://www.csr.ir/departments.aspx?lng=en&abtId=06&&depId=74&semId=1679>>, [Access Date:18/10/2014]

“free market” under the Mohammad Khatemi administration (1997-2005), this transformation could not be carried through.<sup>323</sup>

Economic policy carried out by President Mahmoud Ahmadinejad led to some deterioration of the economic indicators (inflation, unemployment, budget deficit, etc.) of Iran. In his presidential term, the state’s role in the economy increased,<sup>324</sup> so Iran is far from being a free market economy.<sup>325</sup>

At the beginning of the 20<sup>th</sup> century most Iranians were living in rural areas and agriculture was the main source of livelihood.<sup>326</sup> Wheat, barley, rice, cotton, sugar beet and pistachio nuts are important agricultural crops of Iran. Livestock activities provide one-third of the agricultural income.<sup>327</sup> Today, Iran is a largely urbanized and industrialized country.<sup>328</sup> The petrochemical, steel, and automobile industries are the most important business sectors of Iranian industry. In addition, the mining sector, especially the copper industry, has been growing rapidly.<sup>329</sup> In the financial sector, the Central Bank of Iran has the authority to supervise all domestic (state and private) banks. Opening up this sector to foreign investment came to the agenda but has not been accomplished until today.<sup>330</sup>

In Iran, according to official sources, the unemployment rate is 10,7%<sup>331</sup> and the inflation rate is 23,2%.<sup>332</sup> But there is widespread opinion that the real rates are much higher than the official ones. The unemployment rate is higher among the youth population. Iran has rich reserves of fossil fuels; it has the largest proven natural gas reserve (33,6 trillion m<sup>3</sup>) and the world’s fourth largest proven oil reserve(157 thousand

<sup>323</sup> Shayerah Ilias, “Iran’s Economic Conditions: U.S. Policy Issues”, Congressional Research Service, April 22, 2010, p.6 <<http://fas.org/sgp/crs/mideast/RL34525.pdf>>, [Access Date:14/10/2014]

<sup>324</sup> The Social Justice Share (saham-e adalet) plan was put into rule as a social state policy. According to this plan, a portion of SOA’s (State-owned Enterprises) income would be distributed to poor Iranians. Ahmadinejad used it, as an election promise. For details about this plan, See: Jahangir Amuzegar, “Islamic Social Justice: Iranian Style” in Jahangir Amuzegar(ed.) “The Islamic Republic of Iran: Reflections on an Emerging Economy”, Routledge, New York, 2014, pp.74-77

<sup>325</sup> According to the Index of Economic Freedom 2014, Iran is the 173<sup>th</sup> freest state in the world. <<http://www.heritage.org/index/country/iran>>, [Access Date:14/10/2014]

<sup>326</sup> Ervand Abrahamian, “A History of Modern Iran”. Cambridge University Press, 2008, pp.2

<sup>327</sup> Glenn E. Curtis and Eric Hooglund, op. cit. p.XXVIII

<sup>328</sup> Distribution of labor force; agriculture: 16,9%, industry: 34,4%, and services: 48,7%. <<https://www.cia.gov/library/publications/the-world-factbook/geos/ir.html>>, [Access Date:14/10/2014]

<sup>329</sup> Glenn E. Curtis and Eric Hooglund, op. cit. pp.XXVIII

<sup>330</sup> Ibid. pp. XXIX

<sup>331</sup> Statistical Centre of Iran , “A selection of Labor Force Survey Results Spring 1393(21 March-21 June 2014)”, p.5 <[http://www.amar.org.ir/Portals/1/releases/LFI\\_1393\\_1.pdf](http://www.amar.org.ir/Portals/1/releases/LFI_1393_1.pdf)>, [Access Date:14/10/2014]

<sup>332</sup> Central Bank of the Islamic Republic of Iran, “Consumer Price Index for All Urban Consumers Mordad 1393(July 23 – August 22, 2014)”, p.1 <<http://www.cbi.ir/simplelist/11830.aspx>>, [Access Date:14/10/2014]

million barrels).<sup>333</sup> Oil and petroleum products are the most important export products of the country, but natural gas is almost completely consumed by the domestic market. Annual oil production is about 4.3 million barrels, and annual oil consumption is about 2 million barrels.<sup>334</sup> The annual natural gas production of Iran is 166,6 billion m<sup>3</sup> and consumption is 162,2 billion m<sup>3</sup>.<sup>[335]</sup>

Iran's significant export products are; crude oil, petrochemical products, carpets and agricultural products. On the other hand, Iran is importing high added-value commodities, industrial supplies, capital goods, etc.<sup>336</sup> Iran's top trading partners are; China (22,8%), U.A. Emirates (18,6%), India (8,5%), Turkey (8,2%), South Korea (5,9%) and EU(5,1%).<sup>337</sup> The expansion of the sanctions resolution gave quite harm to Iran economy in recent years. Especially, oil embargo and the cut-off of Iran from international banking systems caused significant damage to Iran's economic situation and have led to rise in inflation.<sup>338</sup> Kenneth Katzman stated that "*Oil exports fund nearly half of Iran's government expenditures and sanctions reduced Iran's oil exports in 2013 to about 1 million barrels per day—far below the 2.5 million barrels per day Iran exported during 2011.*"<sup>339</sup> This case illustrates that economy of Iran is dependent on oil.

## 2.2: IRAN'S NUCLEAR PROGRAM

### 2.2.1: Origin of the Nuclear Program of Iran

After the Second World War a new world order was established, and Iran gained importance in the eyes of the United States because of its "containment policy" against

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<sup>333</sup> BP Statistical Review of World Energy June 2014, pp.6 and pp.20, <<http://www.bp.com/content/dam/bp/pdf/Energy-economics/statistical-review-2014/BP-statistical-review-of-world-energy-2014-full-report.pdf>>, [Access Date:18/09/2014]

<sup>334</sup> There has been a decline in oil production in recent years. Iran produced nearly 3,5 million barrels of oil in 2013. Ibid.

<sup>335</sup> Ibid.

<sup>336</sup> <<https://www.cia.gov/library/publications/the-world-factbook/geos/ir.html>>, [Access Date:14/10/2014]

<sup>337</sup> The EU was the second major trading partner with Iran, but it reduced its commercial relations with Iran. See; European Commission, Directorate-General For Trade, European Union, "Trade in goods with Iran", pp.9-10, <[http://trade.ec.europa.eu/doclib/docs/2006/september/tradoc\\_113392.pdf](http://trade.ec.europa.eu/doclib/docs/2006/september/tradoc_113392.pdf)>, [Access Date:26/01/2015]

<sup>338</sup> Kenneth Katzman, "Iran Sanctions", Congressional Research Service Report RS20871, October 23, 2014, summary <<https://www.fas.org/sgp/crs/mideast/RS20871.pdf>>, [Access Date: 26/01/2015]

<sup>339</sup> See Table 2. in p.24 Ibid.

the Soviet Union. Iran, under the influence of the Soviet Union at the time, could have been a serious problem for the United States. For this reason, an intervention in Iran had remained a possibility as it was necessary.

Iran's nuclear relations can be divided into two periods. During the first period of relations (before the Iranian Islamic Revolution) of relations, generally, there was "nuclear cooperation" between the United States and Iran because it was an important ally of United States and a good "market" for its nuclear technology trade.<sup>340</sup> After the Iranian Islamic Revolution, relations among the United States and Iran experienced a major breakage. In this period, not only the economic partnership (nuclear technology transfer and oil trade), but also political, military, diplomatic relations were replaced with hostility.<sup>341</sup> Allies during the Mohammad Reza Shah period, the countries began to demonize each other after the Islamic revolution.

As mentioned above, Iran gained importance for the United States' Containment Policy, so after the Second World War, US relations with Iran grew rapidly and these two states became allies.<sup>342</sup> On December 8, 1953, U.S. President Dwight D. Eisenhower made a speech, above-mentioned, addressed to the General Assembly of the United Nations, and titled "*Atoms for Peace*". The United States from that date forward shared information on nuclear technology with many allied countries that previously only shared information with its close ally Britain. With the "*Atoms for Peace*" project, the United States supported the establishment of small-scale nuclear research reactors in allied countries. Iran was an important ally of the United States in the Middle East, which is why nuclear research was allowed to start in Iran. As a part of the "*Atoms for Peace*" project a cooperation agreement was signed between the United States and Iran for the use of nuclear energy for civilian purposes in 1957, and then at the University of

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<sup>340</sup> Erdem Denk, "Efforts to Outlaw Nuclear Weapons as a Weapon of Mass Destruction", Ankara University SBF, Vol.66, No.3, Ankara, 2011.

<sup>341</sup> The hostage crisis is an important event in the rupture of relations between the two countries. On November 4, 1979 the American embassy in Iran, "the den of spies", was taken over by students following the line of the Imam. Embassy staff members were taken hostage and fifty-two of them kept as hostages for 444 days (until January 20, 1981). David Farber, "Taken Hostage: the Iran hostage crisis and America's first encounter with radical Islam", Princeton University Press, New Jersey, 2005, pp.138-141

<sup>342</sup> Iran-the United States relations began in the mid-19th century. In 1856, the United States and Iran signed commerce and friendship agreement, but relations between the two states were limited. Shireen T. Hunter, "Iran's Foreign Policy in the Post-Soviet Era: Resisting the new International order", Praeger, 2010, pp.34-35

Tehran in 1960, the first nuclear research reactor was built with the support of the United States.<sup>343</sup>

In February 1970, the Parliament of Iran ratified the NPT.<sup>344</sup> Mohammad Reza Pahlavi, the Shah of Iran, was keen on nuclear technology, and, moreover, he was encouraged by the United States. According to Mohammad Sahimi, the United States recommended Iran to expand her non-oil energy sources. The United States stated that the US companies could help to increase the energy production capacity of Iran. The Shah of Iran provided the weapons and nuclear technology from the United States in the 1970s. This commercial relationship was a good method for the United States to cover the costs of its oil imports from Iran.<sup>345</sup>

In 1972, the Iranian Government prepared the “*Twenty Years Perspective*”. According to this perspective, a scarcity of fossil fuels will occur around the world and this situation is a threat to Iran’s development. The long-term energy policy of Iran would include a significant reduction in the share of oil in favor of alternative energy sources such as nuclear energy, gas and hydropower.<sup>346</sup> In fact, not only peaceful nuclear energy developing states but also nuclear weapons developing countries have collaborated, commercially, with existing nuclear powers. It shows us that nuclear technology is a serious “good” as well as being a “military-strategic” tool.<sup>347</sup>

The Atomic Energy Organization of Iran (AEOI) was established in 1974, and it was the main authority responsible for all nuclear issues.<sup>348</sup> In May of 1974, Iran signed the NPT’s Safeguards Agreement (Model Protocol) with the Agency, thus Iran has been under the control of the agency since that year.<sup>349</sup> In 1975, the Massachusetts Institute of Technology (MIT) and Iran's Atomic Energy Agency signed a treaty on the training

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<sup>343</sup> Farhang Jahanpour, “Chronology of Iran's Nuclear Programme”, 1957-2007, <[http://oxfordresearchgroup.org.uk/oxford\\_research\\_group\\_chronology\\_irans\\_nuclear\\_programme\\_1957\\_2007](http://oxfordresearchgroup.org.uk/oxford_research_group_chronology_irans_nuclear_programme_1957_2007)>, [Access Date: 23 December 2012]

<sup>344</sup> Semira N. Nikou, “Timeline of Iran’s Nuclear Activities”, United States Institute of Peace, <<http://iranprimer.usip.org/resource/timeline-irans-nuclear-activities>>, [Access Date: 11/10/2014]

<sup>345</sup> Mohammad Sahimi, “Iran’s Nuclear Program. Part 1: Its History,” *Payvand Iran News*, February 10, 2003, <<http://www.payvand.com/news/03/oct/1015.html>>, [Access Date: 22 December 2012]

<sup>346</sup> Gholam Reza Afkhami, “*The Life and Times of the Shah*”, London: University of California Press, 2009, p. 357.

<sup>347</sup> Erdem Denk, op. cit. pp.102

<sup>348</sup> Official website of Atomic Energy Organization of Iran, <<http://www.aeo.org.ir/portal/Home/Default.aspx?CategoryID=aad5c96d-ca19-4bee-9771-bc97b5feb2a3>>, [Access Date: 11 July 2014]

<sup>349</sup> Semira N. Nikou, “Timeline of Iran’s Nuclear Activities”, United States Institute of Peace, <<http://iranprimer.usip.org/resource/timeline-irans-nuclear-activities>>, [Access Date: 11/10/2014]

of Iranian engineers. In April of 1975, U.S. Secretary of State Henry Kissinger signed National Security Decision Memorandum No. 292 which had the subject title was “*US-Iran Nuclear Cooperation*”.<sup>350</sup> The aim of this memorandum was to increase the transfer of nuclear technology and fuel to Iran. There is a remarkable paragraph in this memorandum. According to this paragraph the United States approved “...*reprocessing of U.S. material in a multinational plant in Iran...*”. As mentioned above reprocessing of spent-fuel is very sensitive issue for nuclear proliferation because this technologic step enables obtaining the plutonium which can be used directly as a fuel for nuclear weapons. Moreover, administration of the United States was ready to make more attractive offers to Iran such as selling reprocessing facilities and complete “nuclear fuel cycle” reactors.<sup>351</sup>

After the global oil crisis in the early 1970s, rising oil prices led to a substantial increase in oil revenues of Iran. A significant portion of this income was devoted to building nuclear reactors and conventional armament.<sup>352</sup> Semira Nikou states that before the Islamic Revolution there was tight nuclear cooperation between Iran and the United States. Nikou added that Iran and the United States initialed an agreement in 1978. According to this agreement Iran accepted to safeguards beyond NPT requirements in return for getting assistance of the United States for reprocessing nuclear fuel. Iran had achieved “*most favored nation*” status regarding reprocessing.<sup>353</sup>

European countries (mainly Germany and France) also owned a significant commercial share in the nuclear technology market. As a result of the efforts of the German and French companies to receive a share, the first major investments were carried out by firms of these countries. With the German company Kraftwerk Union (KWU) (a subsidiary of Siemens) Iran signed an agreement on the construction of two "Heavy Water Reactors" each of 1200 MW, in the city of Bushehr. In addition, the French company Framatome would construct two reactors each of 900 MW in Bandar

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<sup>350</sup> National Security Decision Memorandum 292, <<http://www.gwu.edu/~nsarchiv/nukevault/ebb268/doc05d.pdf>>, [Access Date: 17 December 2013]

<sup>351</sup> “Past Arguments Don’t Square With Current Iran Policy”, Dafna Linzer, the Washington Post, March 27, 2005, <<http://www.washingtonpost.com/wp-dyn/articles/A3983-2005Mar26.html>>, [Access Date:21.01.2015]

<sup>352</sup> “The budget for the Atomic Energy Organization of Iran is increased from \$30.8 million in fiscal year 1975 to more than \$1 billion for fiscal year 1976.” cited from — United States Energy Research and Development Administration, "Iran: Atomic Energy Programme," October 1976, p. 3. cited in The Nuclear Threat Initiative website, Iran Nuclear Chronology, pp.562 <[http://www.nti.org/media/pdfs/iran\\_nuclear.pdf?\\_=1316542527](http://www.nti.org/media/pdfs/iran_nuclear.pdf?_=1316542527)>, [Access Date:07/10/2014]

<sup>353</sup> Semira N. Nikou, op. cit.

Abbas.<sup>354</sup> In 1974, a Nuclear Medicine Center was established in Karaj city by Belgian companies.<sup>355</sup> In 1975, the United States and Iran reached an agreement on the establishment of 8 units nuclear reactor with a total capacity of 8000 MW, and the cost of this project was \$ 6,4 billion for Iran.<sup>356</sup> In short, US-Iran relations continued smoothly until the Islamic Revolution occurred in 1979. After the Iranian Islamic Revolution, Iran put an end to its nuclear program for a while.

### 2.2.2. After the Iranian Revolution (Islamic Revolution)

The Islamic revolution in Iran took place in February 1979, and Shah Mohammad Reza Pahlavi left the country. There was a combination of many different groups (such as clergy, bazaar, liberals, communists, etc.) who executed the revolution but the clergy seized power that had an important role in the mobilization of the masses and success of the revolution. There were many causes for the revolution such as uneven and unbalanced economic development, dependency on The United States and Israeli foreign policy, the dictatorship of the Shah's rule, social problems caused by rapid modernization efforts...etc.<sup>357</sup>

Imam Ayatollah Khomeini seized power after the revolution and all policies were formed and shaped according to his ideas of Islamic Republic of Iran. One of the main discourses of Imam Khomeini's foreign policy was “Neither East, nor West only Islam”. Thus, he emphasized giving up the pro-Western foreign policy that was carried out during the Shah period.<sup>358</sup> The “*Hostage Crisis*”<sup>359</sup> led to the complete breaking of

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<sup>354</sup> Ibid. pp.562

<sup>355</sup> Ersoy Önder, op. cit. p.93, there is an operational Nuclear Research Center for Agriculture and Medicine in Karaj city which is subordinate to the AEOI. The Karaj facility is the target of sanctions because it is also suspected to be a part of Iran's secret WMD program. Karaj Nuclear Research Centre for Medicine and Agriculture, iranwatch.org, <<http://www.iranwatch.org/iranian-entities/karaj-nuclear-research-centre-medicine-and-agriculture>>, [Accessed Date:21/01/2015], See more details about allegations, Koch, Andrew, Jeanette Wolf, “Iran's Nuclear Facilities: a Profile”, Center for Nonproliferation Studies, 1998, <<http://cns.miis.edu/reports/pdfs/iranrpt.pdf>>, [Access Date:14/11/2014]

<sup>356</sup> Ibid. pp.563

<sup>357</sup> For more detailed information on the causes of the Iranian revolution, See; Ervand Abrahamian, “A History of Modern Iran”. Cambridge University Press, 2008, pp.155-195, Fred Halliday has also emphasized similar reasons as mentioned above.

<sup>358</sup> Ibid. p.148

<sup>359</sup> The Hostage Crisis is a turning point in the relationship between Iran and the United States. After the Islamic Revolution university students raided the US embassy. They believed that there are CIA agents in the embassy and these agents are conducting operations against Iran. Ervand Abrahamian represents the beginning of a crisis in the following way: “...With or without Khomeini's knowledge, this prompted 400

relations with the United States, which started to implement sanctions against and tried to isolate Iran. Ayatollah Khomeini's discourse of "*Spreading the Revolution*" disturbed the other Muslim countries in the Middle East, and it helped the United States' isolation policy.<sup>360</sup>

After the Islamic Revolution, Ayatollah Khomeini did not want the completion of nuclear facilities and stopped nuclear activities on account of the idea of creating dependence on foreign countries.<sup>361</sup> The United States changed its discourse that was supported nuclear activities of Iran and claimed that there was no need of Iran to the nuclear technology because it has huge energy sources. Thus, according to the United States, there were hidden reasons of insistence of nuclear technology for Iran. Therefore, Iran has been accused of trying to obtain nuclear weapons.<sup>362</sup> Also economic problems caused by the Iraq-Iran War are another reason for the cessation of nuclear activities of Iran.<sup>363</sup> Iraq's attack on Iran, as stated above, deeply affected Iran's foreign policy. Saddam Hussein used chemical weapons against Iranian troops and killed or injured thousands of Iranian by these weapons, but the international community remained indifferent to this situation. Shahram Chubin claims that Iran learned that, for the functioning of deterrence, threatening state should be aware that it would take a certain response to its attack. Therefore Iraq could get decision to use chemical weapons against Iran because of the absence of such a retaliatory capability of Iran, but Iraq did not dare to use chemical weapons against the United States in Desert Storm.<sup>364</sup>

Due to the devastating effects (economic, social and humanitarian, etc.) of the Iran-Iraq war, Iran resumed nuclear activities, which were largely ignored by the international community. Iran proposed an agreement with Germany's Kraftwerk Union for the completion of the unfinished nuclear power plants, but, probably as a result of the pressure of the United States, the German company refused. The French company

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university students – later named Muslim Student Followers of the Imam's Line – to climb over the walls of the US embassy and thereby begin what became the famous 444-day hostage crisis..." Ibid. p.168

<sup>360</sup> Nasser Saghafi Ameri, "Iranian Foreign Policy: Concurrence of Ideology and Pragmatism", <<http://www.mei.edu/content/iranian-foreign-policy-concurrence-ideology-and-pragmatism>>, [Access Date: 26 December 2012]

<sup>361</sup> Arzu Celalifer Ekinici, pp.42-43

<sup>362</sup> Ibid. pp.41-42

<sup>363</sup> Ersoy Önder, op. cit. pp.94-95

<sup>364</sup> Shahram Chubin, "Does Iran Want Nuclear Weapons?", *Survival*, vol. 37, pp.86-104 (cited) from Gawdat Bahgat. "Nuclear Proliferation: The Islamic Republic of Iran", *Iranian Studies*, vol. 39, no:3, 2006, pp. 307-327



Framatome also did not accept the construction of nuclear power plants (a nuclear research center in Isfahan and two reactors, with 950 MW capacity, at Darkhovin).<sup>365</sup> Iran turned to other potential suppliers such as Pakistan, Argentina, China, and the Soviet Union. On January 22, 1989, Iran signed a cooperation agreement with the Soviet Union but agreement could not be applied due to the disintegration of the Soviet Union.<sup>366</sup> In 1992, Iran and Russian Federation agreed on nuclear cooperation as a continuation of this agreement.<sup>367</sup> After a few unsuccessful attempts (with Argentina and Pakistan), in 1994, China agreed to the construction of nuclear reactors with 300 MW of power.<sup>368</sup> In 1995, an agreement was reached with Russia which included; the establishment of 1000 MW nuclear reactors of Russian technology in Bushehr sending 20-30 students from Iran to Russia every year to study in nuclear fields, and cooperation in technological-scientific areas.<sup>[369][370]</sup>

### 2.3: Process of Nuclear Issue

The United States' concerns regarding Iran's nuclear activities have begun in the 1990s. In 1992 a CIA report predicted that Iran could acquire a nuclear weapon until 2000. In 1993, the Agency calculated that Iran could reach nuclear capability in 8 to 10 years. Two years later, another CIA assessment stated that Iran could develop a nuclear weapon in 3 to 5 years. Also CIA reports focused on Iran's possibility to have

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<sup>365</sup> Mustafa Kibaroglu, op. cit. pp.218

<sup>366</sup> Ersoy Onder, op. cit. pp.95-96

<sup>367</sup> Ibid.

<sup>368</sup> Mohammad Sahimi op. cit., Also For details about Iran's attempts to reach nuclear related Technologies and nuclear materials See: Andrew Koch, Jeanette Wolf, "Iran's Nuclear Facilities: a Profile", *Center for Nonproliferation Studies*, 1998, Appendix: Selected Iranian Nuclear Imports

<sup>369</sup> Arzu Celalifer Ekinci, op. cit., For more detail about Busehr Nuclear Reactor, see; <<http://www.globalsecurity.org/wmd/world/iran/bushehr-intro.htm>>, [Access Date: 26/12/ 2013]

<sup>370</sup> There are several different explanations in order to understanding Russia's policy towards the Iran nuclear crisis. Four of these views are informative about the overall discussion. According to some scholars, Russia's nuclear cooperation with Iran is intended to protect its geopolitical interests from the United States. Some experts argue that Russia is using this issue as a bargaining chip with the West. Other scholars claim that Russia is playing a double game. On the one hand, Russia carries on its cooperation with Iran in the field of nuclear technology (reactor building, educating students... etc.), on the other hand, Russia states that it shares the concerns of the international community about Iran's nuclear program. Russia did not use its veto right to prevent the UNSC's sanctions decisions that targeted Iran. Also many Iranians do not differentiate between the policies of Tsarist Russia and Russia's current foreign policy. Ahmad Soltaninejad, Mahdi Shapouri, "Russia and the Iranian Nuclear Dispute", *Iranian Review of Foreign Affairs*, vol. 3, no:4,(Winter 2013), 180-181

nuclear weapons technology especially with the help of Russia.<sup>371</sup> According to the report, Iran reached the capacity to produce nuclear weapons with the current state. However, nuclear reactors take quite some time to become operational. Iran was dependent on other countries to enrich uranium and build nuclear reactor technologies. High level technological-scientific knowledge is necessary to obtain uranium enrichment technology and produce nuclear fuel. Also, a separate scientific accumulation is required to convert nuclear fuel for a nuclear weapon. Therefore, the claim that Iran had reached the capacity to produce nuclear weapons at that time was not very convincing. It may take a long time to acquire weapons-grade enriched uranium by using a limited number of centrifuges.<sup>372</sup>

At the beginning of the 21<sup>st</sup> century, September 11<sup>th</sup> triggered an important turning point, in terms of U.S. foreign policy. After a long time the United States was attacked on its territory and this led to great astonishment and fear. After the terrorist attacks of September 11, the United States declared war against terrorism on a global scale, and in the process; the "Islamic Terror" concept began to be used especially frequently, because the perpetrators of the attack were Muslim (al-Qaeda and Osama bin Laden). The United States invaded Afghanistan on the grounds that it was hiding the perpetrators of the attack.

U.S. President George W. Bush in his speech in January 2002 described North Korea, Iran and Iraq as “the *Axis of Evil*” countries. These countries were accused of trying to acquire nuclear weapons and supporting terror. According to President Bush “*Iran aggressively pursues these weapons and exports terror, while an unelected few repress the Iranian people's hope for freedom.*”<sup>373</sup> In 2003, the United States invaded Iraq in order to purify it of nuclear weapons, but could not find the alleged weapons of mass destruction. The United States invented the term “Pre-emptive Intervention” to

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<sup>371</sup> James Risen, Judith Miller, “CIA Tells Clinton an Iranian A-Bomb Can’t be Ruled Out”. *New York Times*, 17 January 2000, <<http://www.nytimes.com/2000/01/17/world/cia-tells-clinton-an-iranian-a-bomb-can-t-be-ruled-out.html?pagewanted=all&src=pm>>, [Access Date: 26/12/2013]

<sup>372</sup> According to Juan Cole, American intelligence officials were wrong; they were giving misinformation about the nuclear activities of Iran. They were claiming that a 164- machine centrifuge cascade in Natanz was an evidence of Iran's nuclear weapons program, but much larger facilities were necessary to have a nuclear weapon at that time. Juan Cole, “Iran is probably not developing Nuclear Weapons”, in (Ed.) Jennifer L. Skancke and Lauri S. Friedman, “Iran”, Greenhaven Press, 2010, pp.72-73. See also for evidence of military links; Mark Fitzpatrick, “Assessing Iran’s Nuclear Programme”, *Survival*, vol.48, no:3, (Autumn 2006), pp.8-12

<sup>373</sup> For the full text of the speech see; <<http://millercenter.org/president/speeches/detail/4540>>, [Access Date:28 December 2012]

justify this attack. After the U.S. invasion, in Iraq civilian deaths, internal conflicts and disorder have not yet ended.

Iran, after the Iraq war and Imam Khomeini's death, began to follow a little bit more realistic and pragmatic foreign policy. In 1997, with the presidential election of Muhammad Khatami, known for his moderate and reformist personality, Iran's foreign relations improved a little more. However, the “*Axis of Evil*” rhetoric of the United States and criticism of the Iranian regime (in terms of freedom, democracy, human rights, etc.) blocked improvement in relations. The harsh rhetoric of the United States and the invasion of Iraq contributed to the strengthening of the conservative-religious groups in Iran. Conservative groups criticized Khatami's moderate policy as a kind of weakness, and they argued that the axis of evil rhetoric was the failure of Khatami.<sup>374</sup>

### **The Emergence of the Dispute**

On August 14, 2002, a member of the People's Mojahedin Organization of Iran, Ali Reza Jafarzadeh disclosed two secret facilities, a Heavy Water Reactor in Arakh and an Uranium Enrichment Facility in Natanz, under construction by Iran.<sup>375</sup> Four months later, CNN aired a documentary which includes satellite images of these nuclear sites.<sup>376</sup> The United States has found concrete evidence and justified reasons to believe that Iran has the intention of producing nuclear weapons--more than previously claimed-- and accused Iran of attempting to build nuclear weapons. The United States argued that Iran violated the NPT (Article II<sup>377</sup>), demanded from Iran an end to its uranium enrichment activities, and also has requested from the board of directors of the IAEA that Iran's nuclear file be sent to the UN Security Council. Thus, if Iran violates the NPT, punitive sanctions can be applied.<sup>378</sup>

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<sup>374</sup> For more detailed information on the selection of Ahmadinejad; See: Ansari, Ali. M. "The Ahmadinejad Presidency: Image and Foreign Policy", in Ali M. Ansari, *Iran Under Ahmedinejad: The Politics of Confrontation*, Adelphi Paper 393, UK: Routledge, 2007, Ch. 3.

<sup>375</sup> Kibaroglu, pp.209-210

<sup>376</sup> Seyyed Hossein Mousavian, “The Iranian Nuclear Crisis: A Memoir”, Carnegie Endowment for International Peace, Washington, 2012, p.58

<sup>377</sup> “Article II: Each non-nuclear-weapon State Party to the Treaty undertakes not to receive the transfer from any transferor whatsoever of nuclear weapons or other nuclear explosive devices or of control over such weapons or explosive devices directly, or indirectly; not to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices; and not to seek or receive any assistance in the manufacture of nuclear weapons or other nuclear explosive devices.”  
<<http://www.un.org/en/conf/npt/2005/npttreaty.html>>, [Access Date: 29/12/2013]

<sup>378</sup> Mustafa Kibaroglu, op. cit. pp.210-211

After the news, the IAEA requested information from Iran concerning the allegations. Vice President of the Islamic Republic of Iran and President of the Atomic Energy Organization of Iran (AEOI), Gholamreza Aghazadeh gave information about Iran's long-term nuclear plans (total capacity of 6000 MW within two decades) and confirmed the existence of the mentioned facilities. A report prepared by the International Atomic Energy Agency stated Iran did not fulfill the requirements of the NPT treaty, but there was no evidence of the production of nuclear weapons. According to Seyyed Hossein Mousavian, who was spokesman for Iran in nuclear negotiations in 2003-2005, failure of Iran was not to inform the IAEA about the nuclear materials received from China. He claims that Iran does not have the obligation to notify the IAEA according to its Safeguard Agreement with the agency.<sup>379</sup> There is a discussion regarding the notification obligation of Iran, but there are documents that support the status of Iran from a legal point.<sup>380</sup>

The IAEA also asked Iran to sign the additional protocol.<sup>381</sup> Three major states which are effective in determining the EU's foreign policy, also known as the EU/3 (France, Germany and the United Kingdom), undertook a diplomatic initiative for the solution of the nuclear dispute.<sup>382</sup> On October 21, 2003, the Iranian government and the EU/3 Foreign Ministers issued a declaration known as the Tehran Declaration.<sup>383</sup> According to this declaration, Iran agreed to collaborate with the IAEA, sign and implement the Additional Protocol as a voluntary and suspend its uranium enrichment

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<sup>379</sup> Seyyed Hossein Mousavian, "The Iranian Nuclear Crisis: A Memoir", Carnegie Endowment for International Peace, Washington, 2012, p.58

<sup>380</sup> Yaël Ronen reveals the following about this situation: "There was no doubt for the Director General that the establishment of uranium enrichment facility is not in contravention of the Safeguards obligations and Iran was not obliged to submit the Design Information Questionnaire (DIQ) of the Enrichment Facility in Natanz prior to the visit since according to the comprehensive Safeguards Agreement (INFCIRC/214). Iran has to submit the DIQ only 180 days prior to the introduction of nuclear material to the facility." Yaël Ronen, "The Iran Nuclear Issue", Hart Publishing, Oxford, 2010, p.109

<sup>381</sup> International Atomic Energy Association, "Implementation of the NPT Safeguards Agreement in the Islamic Republic of Iran": Report by Director General - GOV/2003/40, <<http://www.iaea.org/Publications/Documents/Board/2003/gov2003-40.pdf>>, [Access Date: 18/04/2014]

<sup>382</sup> Hossein Mousavian claims that there were five options have been discussed by politicians and commentators to untie this nuclear dispute: First, a preemptive strike (the United States often voiced this option). Second, a diplomatic solution (which was advocated by EU/3 since the beginning of the process), third, behavior change through sanctions, fourth espionage and sabotage the nuclear program and fifth, live with an Iranian bomb. Seyyed Hossein Mousavian, "The Iranian Nuclear Crisis: A Memoir", Carnegie Endowment for International Peace, Washington, 2012, p.5

<sup>383</sup> "Statement by the Iranian Government and Visiting EU Foreign Ministers", <[http://www.iaea.org/newscenter/focus/iaeaيران/statement\\_iran21102003.shtml](http://www.iaea.org/newscenter/focus/iaeaيران/statement_iran21102003.shtml)>, [Access Date: 29/04/2014]

activities during the negotiations, as confidence-building measures.<sup>384</sup> Iran signed the Additional Protocol on December 18, 2003 and agreed to act as if the protocol was in force<sup>385</sup> but some comments differences began to raise an issue. Iran suspended its uranium enrichment activities but continued research and development activities such as production of centrifuge components, installation and testing centrifuges. On the other hand, EU / 3 requested the suspension of all activities related to uranium enrichment.<sup>386</sup>

The IAEA's February 24, 2004 (GOV/2004/11), March 13, 2004 (GOV/2004/21) and June 1, 2004 (GOV/2004/34) reports focused on Iran's nuclear activities in the past. Iran was both criticized and admired. Iran was criticized because it could not answer satisfactorily about the origin of HEU<sup>387</sup> (Highly Enriched Uranium) it owned. Signing the additional protocol and putting controls are in place were appreciated considerations of Iran. Also Iran frequently was suggested to have more cooperation with the IAEA's inspectors. Various IAEA reports repeated many similar issues and particularly focused on technical issues. Iran, in order to have an independent nuclear fuel cycle<sup>388</sup> program, expended a serious effort to reach the necessary technical knowledge and carried out experiments and studies for almost all stages.<sup>389</sup>

On September 18, 2004, after the failure of the Tehran Declaration, the IAEA took a harsh decision against Iran. According to this, Iran should suspend its nuclear activities and fully cooperate with the Agency until the end of November. Otherwise the IAEA need to take next steps and send Iran report to the UN Security Council.<sup>390</sup> In November 2004, Iran agreed to voluntarily suspend all of its uranium enrichment activities as part of a deal with the EU/3<sup>391</sup>. The EU/3 reached an agreement (Paris Agreement) with Iran on some issues within the framework of this agreement. According to the Paris Agreement; Iran and EU/3 reiterated their commitment to the

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<sup>384</sup> Arzu Celalifer Ekinci, op. cit. pp.220-221

<sup>385</sup> "Iran Signs Additional Protocol on Nuclear Safeguards", 18 December 2003, <<http://www.iaea.org/newscenter/news/2003/iranap20031218.html>>, [Access Date:29/04/2014]

<sup>386</sup> Arzu Celalifer Ekinci, op. cit. 222-223

<sup>387</sup> Uranium enriched to 20 percent or more U-235 is called "highly enriched uranium" (HEU). Uranium enriched to less than 20 percent is called "low enriched uranium" (LEU).

<sup>388</sup> See: Appendix 2

<sup>389</sup> International Atomic Energy Association, GOV/2004/83, 15 November 2004, <<http://www.iaea.org/Publications/Documents/Board/2004/gov2004-83.pdf>>, [Access Date: 30/12/2013]

<sup>390</sup> Arzu Celalifer Ekinci, op. cit. p.223

<sup>391</sup> Farhang Jahanpour op. cit.

NPT and mutually recognize the rights under the NPT. In addition, Iran agreed to practice the following:

To build further confidence, Iran has decided, on voluntary basis, to continue and extend its suspension to include all enrichment related and reprocessing activities, and specifically: the manufacture and import of gas centrifuges; work to undertake any plutonium separation, or to construct or operate any plutonium separation installation; and all tests or production at any uranium conversion installation.<sup>392</sup>

According to the Paris Agreement EU/3 accepted that above measures were taken unilaterally and voluntarily so Iran has no legal obligation to implement these measures.<sup>393</sup>

Iran hoped to make gains and receive some safeguards in exchange for stopping all its nuclear activities but could not find the expected guarantees. The EU/3's suggestions were not satisfactory for Iran because Iran pursued more objective guarantees. For instance, EU/3 suggested that "... *EU/3 will actively support to Iran's accession negotiations of World Trade Organization (WTO). Trade and Cooperation Agreement talks with Iran, re-start....etc.*"<sup>394</sup>

According to Seyyed Hossein Mousavian, who was adviser to the secretary of Iran's Supreme National Security Council, the main points of the Paris Agreement were:

1. Acceptance of the non-discriminatory exercise of Iran's right to peaceful nuclear technology (and the key term here is "exercise")
2. Iran to provide objective guarantees on the non-diversion of its nuclear programme to military ends.
3. Iran to agree to suspension of its nuclear fuel-cycle activities, not as a legal obligation, but only as a confidence-building measure, and only while the negotiations makes progress.
4. The EU-3 to provide firm guarantees for comprehensive political, security, economic, technological, and nuclear co-operation with Iran.<sup>395</sup>

There was no legal obligation for Iran with this agreement, as stated in its contents. Iran never thought to permanently put an end to its nuclear activities, but it wanted to see the value of sitting at the negotiation table. However, Iran was disappointed because

<sup>392</sup> To see full text of agreement, <<http://www.consilium.europa.eu/uedocs/cmsUpload/IRAN%20-%20Statement%20Solana%20-%20nuclear%20programme.pdf>>, [Access Date: 30/12/2013]

<sup>393</sup> Arzu Celalifer Ekinici, op. cit. 226

<sup>394</sup> Ibid.

<sup>395</sup> Hossein S. Mousavian, "Iran and the West: The Path to Nuclear Deadlock", *Global Dialogue*, vol.8, number 1-2, 2006 <<http://www.worlddialogue.org/content.php?id=367>>, [Access Date:01 January 2013]

it was hoping to encounter a much better offer, so shortly after the agreement, Iran announced that it would not terminate its program on nuclear technology.<sup>396</sup>

On March 11, 2005 the United States, announced that it would support the policy of the EU/3 and give some objective guarantees if Iran put an end to its nuclear activities. Secretary of State Condoleezza Rice explained these guarantees as such “...U.S. will drop its objection to Iran’s application to the World Trade Organization and will consider, on a case by case basis, the licensing of spare-parts for Iranian civilian aircraft, in particular from the EU to Iran...”<sup>397</sup>

In July 2005, the EU/3 offered to Iran that it permanently shut off its nuclear activities in return for improved relations with the EU, but this suggestion was rejected by Iran. According to Mousavian, the EU/3 moved away from its constructive role in the Tehran Declaration and the Paris agreement.<sup>398</sup> Actually, this change was not unilateral. A change in Iran’s administration also, led to a significant shift in the route of the dispute. The nuclear dispute evolved into a different dimension after the election of President Mahmoud Ahmadinejad. According to Iran, the above-mentioned guarantees were extremely insufficient. Vice President of the Iranian Atomic Energy Organization (IAEO) Mohammad Saeedi told reporters: “Uranium conversion facility in Isfahan started its activities under the control of IAEA”<sup>399</sup> According to him, the EU’s proposal of was “very insulting and humiliating”.<sup>400</sup>

Iran suspended its nuclear activities temporarily but this step was not enough to eliminate the mutual distrust between the parties. The United States and the EU “...doubt Iran’s claims that it wants to enrich uranium as fuel for nuclear power stations to

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<sup>396</sup> Farhang Jahanpour, op. cit.

<sup>397</sup> Condoleezza Rice, “U.S. supports for the EU”, Washington D.C., 11 March 2005, <<http://2001-2009.state.gov/secretary/rm/2005/43276.htm>>, [Access Date: 01/07/2014]

<sup>398</sup> Hossein S. Mousavian, op. cit.

<sup>399</sup> “İran, nükleer faaliyetleri yeniden başladı”, *Sabah*, 8 August 2005, <<http://arsiv.sabah.com.tr/2005/08/08/dun96.html>>, [Access Date: 11/04/2014]

<sup>400</sup> Ryan Rosalind, and agencies., “Iran resumes uranium enrichment”, *The Guardian*, London, 8 August 2005, <<http://www.guardian.co.uk/environment/2005/aug/08/energy.iran>>, [Access Date: 11/02/2014]

*meet its booming electricity demand, and suspect it of wanting to continue the enrichment process in an effort to produce a nuclear bomb.*"<sup>401</sup>

One of the most important problems between Iran and the IAEA is highly enriched uranium, which should not be in Iran. According to IAEA investigations 36% - 54% percent enriched uranium has been found in the ruins of Iran.<sup>402</sup> Uranium enriched to more than 20% creates doubt about a nuclear weapons program, although to make nuclear weapons uranium enriched to 90% or more must be used. In August 2005, U.S. government experts and other international scientists determined that HEU found in Iran came from contaminated Pakistani equipment and it was not evidence of a secret nuclear weapons program in Iran.<sup>403</sup> In almost all the reports of the IAEA, approval of the additional protocol as a permanent end to uranium enrichment is emphasized. Iran does not want to completely stop enriching uranium although it is open to negotiations.

In January 2006, Iran removed UN seals at the Natanz uranium enrichment plant under IAEA supervision and resumed research on nuclear fuel, despite Western warnings. The EU/3 reacted to this situation, and it was regarded as a denial of the negotiation process.<sup>404</sup> Iran's resumption of uranium enrichment rather strained relations with the West. A few days later, on January 12, 2006, EU cancelled nuclear negotiations with Iran and stated that nuclear activities of Iran should be the subject of the Security Council agenda. The United States threatened Iran in a veiled manner.<sup>405</sup> The resumption of Iran's uranium enrichment activities increased the concerns of the West and undermined the belief that success of diplomatic initiatives. Thus, EU policy towards Iran began to align closer to the United States' policies.<sup>406</sup> Iran's recent activities opened the way for efforts to pace sanctions on Iran. China and Russia have blocked sanctions against Iran in the UNSC because of their important commercial

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<sup>401</sup> Ibid.

<sup>402</sup> International Atomic Energy Association, *GOV/2004/83*

<sup>403</sup> Dafna Linzer, "No proof found of Iran Arms Program", *The Washington Post*, Washington, 23 August 2005, <<http://www.washingtonpost.com/wp-dyn/content/article/2005/08/22/AR2005082201447.html>>, [Access Date: 02/05/2014]

<sup>404</sup> Arzu Celalifer Ekinçi, op. cit. p.238

<sup>405</sup> "U.S. Secretary of State Condoleezza Rice says military attack on Iran's nuclear program not on U.S. agenda "at this point", but all options on the table." Farhang Jahanpour op. cit.

<sup>406</sup> At the beginning of the nuclear dispute these two parties was advocating two different options to resolve the dispute, but another option (implementation of sanctions) has become common opinion because of Iran's attitude. See: Seyyed Hossein Mousavian, "The Iranian Nuclear Crisis: A Memoir", Carnegie Endowment for International Peace, Washington, 2012, p.5



ties.<sup>407</sup> On January 31<sup>st</sup>, at a P5 +1(UNSC members+ Germany) meeting in London, Russia and China were convinced that the Security Council should pass sanctions. Although various recommendations have been discussed, between Iran-Russia, Iran-EU/3 and Iran-IAEA, deliberations have not been concluded.<sup>408</sup>

The IAEA Board of Governors submitted a report on Iran to the UN Security Council, but this toughened the stance of Iran. The UNSC resolution of March 29<sup>th</sup> was written in a softer style than expected. According to the resolution, Iran should stop its uranium enrichment activities in order to have a positive impact on the negotiation process. A report was requested from the chairman of the IAEA, Mohammad El-Baradei, within 30 days, to check Iran's compliance with the decisions,<sup>409</sup> but Iran continued to work, ignoring the UNSC's resolution.

In April 2006, President Mahmoud Ahmadinejad declared that "*Iran joined the nuclear countries of the world*". The head of the AEOI Gholamreza Aghazadeh declared that Iran produce 3.5% percent enriched uranium (LEU) to use in its nuclear power plants.<sup>410</sup> From this date, Iran marked April 9 as National Day of Nuclear Technology of Iran. 3.5% enriched uranium was not a serious threat because it was a normal rate of enriched uranium used in reactors, but it can be dangerous to have nuclear fuel cycle technology because producing enriched uranium that is necessary for nuclear weapons is a matter of time.

The United States has tried the known method of "sanctions" to stop Iran's uranium enrichment activities. Iran is an experienced country when it comes to sanctions<sup>411</sup> because the US has applied this technique in order to push Iran to the wall. In addition to the economic impact of the sanctions, political and social impacts are also

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<sup>407</sup> Arzu Celalifer Ekinici, op. cit. pp.85, Russia's role in this crisis is not just relevant to business relations. For the analysis of Russia's foreign policy carried out during this crisis, See: Ahmad Soltaninejad, Mahdi Shapouri, "Russia and Iran's Nuclear Dispute", Iranian Review of Foreign Affairs, Vol.3, No.4, winter 2013, pp.179-205.

<sup>408</sup> See the detailed information for this interim period. Arzu Celalifer Ekinici, op. cit. pp.85-95

<sup>409</sup> Security Council 5403<sup>th</sup> meeting, <<http://www.un.org/News/Press/docs/2006/sc8679.doc.htm>>, [Access Date:23/10/2014]

<sup>410</sup> Nazila Fathi, Cristine Hauser, "Iran Marks Step in Nuclear Development", *The New York Times*, 11 April 2006, <[http://www.nytimes.com/2006/04/11/world/middleeast/11cnd-iran.html?\\_r=2&oref=slogin&](http://www.nytimes.com/2006/04/11/world/middleeast/11cnd-iran.html?_r=2&oref=slogin&)>, [Access Date:23 October 2013]

<sup>411</sup> See Appendix 3 to observe U.S. and UN sanctions targeting Iran until 2007, to read full report of GAO (Government Accountability Office) <<http://www.gao.gov/assets/280/270548.pdf>>, [Access Date:05/01/2014]

felt by Iranians, yet sanctions have not had the exactly desired effect on Iran due to the nature of Iran.<sup>412</sup>

The UN Security Council passed Resolution 1696 in July 2006, demanding Iran to suspend all its uranium enrichment-related and reprocessing activities, but Iran continued its activities. The Resolution 1696 was also willing to stop all research and development actions of Iran, and termination of all activities to be verified by the IAEA.<sup>413</sup> A limited time was given to Iran (until 31 August) to fulfill mentioned requests, otherwise the next step would be sanction decision. Iranian officials reacted to this resolution.

UNSC Resolution 1737 was passed on December 23, 2006, which demanded that Iran cooperate with the IAEA on freezing the assets of organizations (Iran Aerospace Industries Organization (AIO), Atomic Energy Organization of Iran (AEOI), and Army of the Guardians of the Islamic Revolution (IRGC)) and persons linked to nuclear and missile programs. The import and export of the sensitive nuclear materials and equipment were blocked. Thus technology transfer that will contribute to Iran's nuclear activities was prevented. 60 days was given to Iran to implement sanctions resolution.<sup>414</sup> Vitaly Churkin, Russia's Ambassador to the United Nations, stated that this resolution was a serious message to Iran to resolve the remaining concerns of international community. Churkin added that it was important for Russia that measures do not allow to the use of force.<sup>415</sup> It may be argued that Russia did not veto the resolution because of exclusion of the military intervention option from the text. Iran condemned resolution 1737 and Iranian politicians showed a very strong response to this decision. President Mahmoud Ahmadinejad described sanctions resolution as "a piece of torn paper" and stated that Iran will accelerate its uranium enrichment

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<sup>412</sup> To see a detailed analysis of the sanctions on Iran; Boroujerdi, Eskandar Sadeghi, "Sanctioning Iran: Implications and Consequences" *Oxford Research Group*, October 2012, <[http://www.oxfordresearchgroup.org.uk/publications/briefing\\_papers\\_and\\_reports/sanctioning\\_iran\\_implications\\_and\\_consequences](http://www.oxfordresearchgroup.org.uk/publications/briefing_papers_and_reports/sanctioning_iran_implications_and_consequences)>, [Access Date:05/01/2014]

<sup>413</sup> The United Nations Security Council Resolution 1696 (31 July 2006), <[http://www.iaea.org/sites/default/files/unsc\\_res1696-2006.pdf](http://www.iaea.org/sites/default/files/unsc_res1696-2006.pdf)>, [Access Date:20/01/2015]

<sup>414</sup> UNSC Resolution 1737, <[http://www.un.org/ga/search/view\\_doc.asp?symbol=S/RES/1737\(2006\)](http://www.un.org/ga/search/view_doc.asp?symbol=S/RES/1737(2006))>, [Access Date:05/08/2014]

<sup>415</sup> UNSC Press Release, 23 December 2006, <<http://www.un.org/press/en/2006/sc8928.doc.htm>>, [Access Date:21/01/2015]

activities. Ali Larijani, chief nuclear negotiator, said that 3000 centrifuges would be established at Natanz and Iran would resume its nuclear activities with full speed.<sup>416</sup>

Iran did not stop its nuclear activities within 60 days and continued its nuclear program. Mohammed El-Baradei, Director General of the IAEA, prepared a report that detecting this situation and submitted to the UNSC. Iranian President Mahmoud Ahmadinejad emphasized that Iran's determination on pursuing its nuclear program and depicted nuclear program as a train "without break".<sup>417</sup> Ahmadinejad's discourse was criticized by domestic politicians and it was stated that such discourses damage the diplomatic efforts.<sup>418</sup>

The P5+1 Countries actively joined the process for a resolution of the dispute with passing the Resolution 1747, on March 24, 2007. According to this resolution sale of weapons to Iran was banned and the assets of more organizations and persons linked to nuclear and missile programs were frozen. Unlike the previous sanctions decision, elements of the long-term agreement were expressed (Annex II) at the end of this resolution. According to the proposed solutions, Iran would stop its uranium enrichment-related and reprocessing activities, and ensure to full cooperation with the IAEA.<sup>419</sup> Technological cooperation with Iran in some areas, support for the construction of light water reactor and fuel assurances were offered to Iran but these proposals were not accepted by the Iranian administration.

Iran's disobeying UNSC sanctions decisions brought on the agenda allegations of military intervention. The United States continued to claim that Iran's nuclear weapons program continues and that it lies to hide these activities.<sup>420</sup> 2007 National

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<sup>416</sup> "Ahmadinejad: UN resolution a piece of torn paper", Reuters/Israel News, ynetnews.com, December 24, 2006, <<http://www.ynetnews.com/articles/0,7340,L-3343828,00.html>>, [Access Date:22/01/2015]

<sup>417</sup> "No 'Breaks' on Iranian Nuclear Effort", Nasser Karimi, the Washington Post, February 26, 2007, <<http://www.washingtonpost.com/wp-dyn/content/article/2007/02/25/AR2007022501098.html>>, [Access Date:22/01/2015]

<sup>418</sup> Arzu Celalifer Ekinci, op. cit. pp.120-121

<sup>419</sup> UNSC Resolution 1747, <[http://www.un.org/ga/search/view\\_doc.asp?symbol=S/RES/1747\(2007\)](http://www.un.org/ga/search/view_doc.asp?symbol=S/RES/1747(2007))>, [Access Date:22/01/2015]

<sup>420</sup> Arzu Celalifer Ekinci, op. cit. pp.124-125

Intelligence Estimates did not confirm the explanation of President George Bush, and detected that there was no existing nuclear weapons program of Iran.<sup>421</sup>

On October 28, 2007, according to the International Herald Tribune, Mohammad El-Baradei expressed his concerns and added that: “...*have we seen Iran having the nuclear material that can readily be used into a weapon? No. Have we seen an active weaponization program? No.*”<sup>422</sup> After this explanation Mohamed El-Baradei was accused to be pro-Iranian by Israel. As can be seen, mutual distrust is an important obstacle to a solution of the problem.

Resolution 1803 passed on March 3, 2008, and sanctions became more aggravated for Iran. In addition to the previous sanction decisions transactions of Iranian banks under scrutiny in this resolution. The scope of previous sanctions resolutions expanded and travel restrictions also added. Prescribed period for the fulfillment of demand was 90 days.<sup>423</sup> Resolution 1835, passed on September 27, 2008, expanded the range of sanctions, but sanction resolutions in question failed to halt the Iranian nuclear program. Although the UN Security Council involved in the dispute Iran increased its number of centrifuges from 164 to 4000 by the end of 2008.<sup>424</sup>

On June 9, 2010, the passage of Resolution 1929 imposed a complete arms embargo on Iran. This resolution brought strict supervision and sanctions on Iranian banks, and increased the number of frozen assets of individuals and organizations. Travel restrictions have become available to more people. In short tougher measures and more stringent controls aimed to apply.<sup>425</sup> Two temporary members of the Security Council, Turkey and Brazil, voted against this resolution because according to them the

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<sup>421</sup> Ibid. pp.136-137

<sup>422</sup> “UN nuclear watchdog chief expresses concern about anti-Iran rhetoric from US”, International Herald Tribune Sunday, October 28, 2007., <<http://www.globalexchange.org/news/un-nuclear-watchdog-chief-expresses-concern-about-anti-iran-rhetoric-us>>, [Access Date:03/09/2014]

<sup>423</sup> UNSC Resolution 1803, <[http://www.un.org/ga/search/view\\_doc.asp?symbol=S/RES/1803\(2008\)](http://www.un.org/ga/search/view_doc.asp?symbol=S/RES/1803(2008))>, [Access Date:22/01/2015]

<sup>424</sup> Arzu Celalifer Ekinci, op. cit. p.380

<sup>425</sup> UNSC Resolution 1929, <[http://www.un.org/ga/search/view\\_doc.asp?symbol=S/RES/1929\(2010\)](http://www.un.org/ga/search/view_doc.asp?symbol=S/RES/1929(2010))>, [Access Date:22/01/2015]

sanctions would not have the desired effect.<sup>426</sup> Turkey and Brazil convinced Iran on the uranium swap, and low-enriched uranium would be swapped through Turkey. On May 17, Turkey, Brazil and Iran declared a nuclear fuel swap deal. According to the declaration, Iran agreed to deposit 1200 kg LEU in Turkey, and the Vienna Group (The United States, Russia, France and the IAEA) would deliver 120kg of fuel needed for the Tehran Research Reactor (TRR)<sup>427</sup> but this deal dissatisfied P5+1 countries. Hillary Clinton, United States Secretary of State stated that P5 + 1 had agreed on a draft of sanctions on Iran. So, Brazil and Turkey could not find the response they hoped for although this was a diplomatic success. In addition, such a sanction decision taken immediately after their efforts drew fire from these countries naturally. Sanctions rather than pushing Iran to give up its nuclear program leads sides to more firmly connect. The mutually tenacity of both sides leads them to more extreme points, and makes the problem more intractable. Therefore, access to nuclear technology has become an honorary issue.<sup>428</sup>

The sanctions resolutions did not mean that the negotiation process was abandoned. The negotiations between Iran and P5+1 were also continued. After the passage of the Resolution 1929 Catherine Ashton, who was High Representative of the European Union for Foreign Affairs and Security Policy, invited to Iran to participate in a new round of dialogue. On December 6-7, 2010, diplomatic talks were held between Iran and P5+1<sup>429</sup> but could not be provided a significant improvement in terms of the negotiation process. Iran claimed that suspension of its nuclear program was not negotiable.<sup>430</sup> On December 5, one day before Geneva talks, Ali Akbar Salehi, head of AEOI, announced that Iran has produced its own yellow cake and became self-sufficient in entire fuel cycle.<sup>431</sup> Salehi also mentioned to assassinations of Iranian scientists in his

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<sup>426</sup> Ian, Black, "UN approves new Iran sanctions", *The Guardian*, 09 June 2010, <<http://www.guardian.co.uk/world/2010/jun/09/iran-sanctions-united-nations-nuclear?INTCMP=SRCH>>, [Access Date:04/05/2014]

<sup>427</sup> "Nuclear fuel declaration by Iran, Turkey and Brazil", *BBC News*, 17 May 2010, <[http://news.bbc.co.uk/2/hi/middle\\_east/8686728.stm](http://news.bbc.co.uk/2/hi/middle_east/8686728.stm)>, [Access Date:04/05/2014]

<sup>428</sup> Celalifer Ekinci, Arzu. "Nükleer Krizde Türkiye'nin Diplomatik Çabaları", <<http://www.usak.org.tr/myazdir.asp?id=1353>>, [Access Date:04/07/2014]

<sup>429</sup> Aiden Warren, "The Obama Administration's Nuclear Weapon Strategy: The Promises of Prague", Routledge, 2013, p.132

<sup>430</sup> Ibid.

<sup>431</sup> "Iran self-sufficient in yellow cake", *Press TV*, 05 December 2010, <<http://previous.presstv.ir/detail.aspx?id=153963&sectionid=351020104>>, [Access Date: 23/01/2015]

interview and stated that assassinations could not prevent Iran's nuclear progress.<sup>432</sup> On January 21-22, 2011, talks were held between Iran and P5+1 and exchange of letters was carried out over the next few months but could not be agreed on next meeting. November 8, 2011 IAEA report raised the tension between Iran and P5+1, and paved the way for new sanctions.<sup>433</sup>

On November 29, 2011, Iranian protestors attacked to the British Embassy in Tehran. As a result of this event, The United Kingdom closed its embassy in Tehran and Iran closed its embassy in London respectively. The EU took decision to implement an embargo on purchase of Iranian oil and applied from the date of July 1, 2012.<sup>434</sup>

At the beginning of 2012 Iran declared its readiness to participate in new talks, and chief negotiator Saeed Jalilli sent a letter to Catherine Ashton on February 15. P5+1 had accepted the invitation to attend new talks, and nuclear negotiations were held in Istanbul on April 14, 2012.<sup>435</sup> Both sides evaluated the meeting as positive and a consensus was achieved "*on a framework of continuing negotiations with a step-by-step process and reciprocal actions.*"<sup>436</sup> Then several meetings were carried out successively in Baghdad (on March 23-24), Moscow (on June 18-19) and Istanbul (on July 24). These talks focused on the more technical issues but no major progress could be achieved.<sup>437</sup> On August 30, 2012 the IAEA reported that Iran's increasing uranium enrichment activities at the Fordow and producing 20% enriched uranium more than its needs. Israeli Prime Minister Benjamin Netanyahu drew "*a red-line for an Israeli attack on Iran*". "*Netanyahu defines his red-line as Iran amassing enough uranium enriched to*

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<sup>432</sup> On November 29, 2010, terrorists detonated bombs in the cars of two Iranian scientists Dr. Majid Shahriari and Professor Fereydoun Abbasi, in separate locations in Tehran. Fereydoun Abbasi, who then became head of AEOI, and his wife were wounded but Dr. Majid Shahriari was killed. Iranian officials claimed that these terrorist attacks carried out with the help of "Mossad, CIA and MI6". Ibid. The United States stated that there was not its involvement in these attacks. There were allegations that Israel could contribute to these assassinations. See: "Who's killing Iranian nuclear scientists?", Josh Levs, CNN International, 11 January 2012, <<http://edition.cnn.com/2012/01/11/world/meast/iran-who-kills-scientists/>>, [Access Date:23/01/2015], Between the years 2010-2012, four Iranian scientist assassinated. See details about them, <<http://nuclearenergy.ir/in-memory/>>, [Access Date:23/01/2015]

<sup>433</sup> Aiden Warren, op. cit. p.133, Resolution 1984 passed on June 9, 2011. <[http://www.un.org/ga/search/view\\_doc.asp?symbol=S/RES/1984\(2011\)](http://www.un.org/ga/search/view_doc.asp?symbol=S/RES/1984(2011))>, [Access Date:23/01/2015]

<sup>434</sup> Ibid., for details about the attack, see: "Iran protestors attack UK embassy in Tehran-Tuesday 29 November", The Guardian, <<http://www.theguardian.com/world/blog/2011/nov/29/iran-protesters-attack-uk-embassy-tehran-live>>, [Access Date:24/01/2015]

<sup>435</sup> Ibid.

<sup>436</sup> Timeline of Nuclear Diplomacy With Iran, Arms Control Association, <<http://www.armscontrol.org/factsheet/Timeline-of-Nuclear-Diplomacy-With-Iran#2012>>, [Access Date: 24/01/2015]

<sup>437</sup> Ibid.

20 percent (approximately 250 kilograms), which, when further enriched, will be enough for one bomb.”<sup>438</sup> On November, 2012 the IAEA reported that Iran installed about 2800 centrifuges at Fordow and continued to producing 20% enriched uranium.<sup>439</sup> In Almaty, two rounds of nuclear talks were held in February and April 2013 but could not be achieved a compromise between the parties. Thereby Almaty rounds became the end of the scheduled talks.<sup>440</sup>

After the presidential elections in Iran an opportunity occurred for the elimination of congestion in nuclear negotiations. On June 15, 2013, Hassan Rouhani, former head of the nuclear negotiation team, won the presidential election, and became the seventh president of Iran. On August 3<sup>rd</sup>, after the approval of the Supreme Leader Seyyed Ali Khamenei, Hassan Rouhani began his presidency.<sup>441</sup> Unlike other conservative candidates, Hassan Rouhani is known as a “moderate” politician.<sup>442</sup>

Although Rouhani gained the support of reformists in the presidential election, it is difficult to claim that he is a reformist. Hossein Bastani describes him as a “centrist”, because of his preferences of cabinet members.<sup>443</sup> Nevertheless inauguration of President Hassan Rouhani has opened a new period in the negotiation process because it is possible to argue that the growing role of IRGC in the cabinet during the presidency of Mahmoud Ahmadinejad has experienced a significant decline. Reduction of the influence of military bureaucracy on foreign policy has prepared the groundwork for the prominence of diplomacy.

As a result of this, on November 24, 2013, the negotiation process gained momentum and an interim agreement (Joint Plan of Action-JPA) was reached between Iran and the P5+1 countries.<sup>444</sup> According to Kenneth Katzman the main reason of this

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<sup>438</sup> Ibid.

<sup>439</sup> Ibid.

<sup>440</sup> Ibid.

<sup>441</sup> Official Website of Presidency, <http://president.ir/en/70079>

<sup>442</sup> “Hassan Rouhani wins Iran presidential election”, Mohsen Asgari, BBC News, 15 June 2013, <<http://www.bbc.com/news/world-middle-east-22916174>>, [Access Date:14/12/2014], and “Moderate Candidate Wins Iran’s Presidential Vote”, Farnaz Fassihi, The Wall Street Journal, 15 June 2013

<sup>443</sup> Hossein Bastani, “How Powerful is Hassan Rouhani in the Islamic Republic?”, The Royal Institute of International Affairs, Chatham House publications, London, November 2014, p.6

<sup>444</sup> Kenneth Katzman, Paul K. Kerr, Mary Beth D. Nikitin, “Iran: Interim Nuclear Agreement and Talks on a Comprehensive Accord”, Congressional Research Service, R43333, November 26, 2014, p.1, <<http://fas.org/sgp/crs/nuke/R43333.pdf>>, [Access Date:16/12/2014], For full text of JPA, see: “The Iran nuclear deal:full text”, CNN International, 24 November 2013, <<http://edition.cnn.com/2013/11/24/world/meast/iran-deal-text/>>, [Access Date:16/12/2014] or <[http://eeas.europa.eu/statements/docs/2013/131124\\_03\\_en.pdf](http://eeas.europa.eu/statements/docs/2013/131124_03_en.pdf)>, [Access Date:16/12/2014]

momentum was sanctions, and he added that “*Many experts interpret Iran’s acceptance of the JPA as evidence that sanctions contributed substantially to a shift in Iran’s nuclear policies...*”.<sup>445</sup> JPA constituted a step in reaching comprehensive long-term solution. In accordance with this interim agreement, Iran is committed to not increase its nuclear capacity for a period of six months. Moreover, Iran has pledged to dilute a certain amount of its HEU (20 per cent enriched uranium) stock to LEU (5 per cent enriched uranium), and to ensure a more conducive inspection environment for the IAEA Safeguards. The U.S and EU will suspend sanction resolutions and undertake not to make nuclear-related sanction decisions correspondingly.<sup>446</sup> This interim agreement did not completely eliminate international concerns about Iran's nuclear program, but it contributed to the formation of an optimistic situation.

JPA was presented as a diplomatic success, but Iranian diplomats and politicians frequently emphasized that they did not make a concession on nuclear rights of Iran. Perception of a concession would put the government in a difficult situation. The officials carefully avoided rhetoric that could create such a perception.

On December 2013 several meetings were held between the P5+1 and Iran in Geneva and Vienna for technical discussion on the implementation of the JPA. On January 12, parties declared that implementation of the JPA will begin on January 20, 2014.<sup>447</sup>

The P5+1 and Iran began to talk on the comprehensive agreement in Vienna on February 17-20, and the parties started negotiations on draft of the agreement on May 13-16.<sup>448</sup> The IAEA stated that Iran applying interim agreement and diluted almost all of its 20% enriched uranium stockpiles. The P5+1 began to gradually lift economic sanctions on Iran. Some problems also may be occurring during the process. For instance, Iran did not provide information on time about its past nuclear activities with possible military dimensions.<sup>449</sup>

The parties announced a schedule on November 24, 2014. According to this, P5+1 and Iran aimed to achieve a political agreement until March 2015, and solve

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<sup>445</sup> Kenneth Katzman, op. cit. p.49

<sup>446</sup> Ibid.

<sup>447</sup> Timeline of Nuclear Diplomacy With Iran, Arms Control Association, <<http://www.armscontrol.org/factsheet/Timeline-of-Nuclear-Diplomacy-With-Iran#2012>>, [Access Date: 24/01/2015]

<sup>448</sup> Ibid.

<sup>449</sup> Ibid.



technical issues by June 30.<sup>450</sup> In short, it can be argued that the implementation of the interim agreement formed the common ground of the negotiation process.

### **Conclusion**

In this chapter of the thesis, the origin of the Iranian nuclear program and aspects of this program, which has become an international problem, were discussed. In the next chapter of this thesis, reasons of the political attitude of Iran in this international dispute will be examined. The three model approach will be implemented to Iran's nuclear program to do this examination. The main motivations of Iran to resume its nuclear program will try to understand.

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<sup>450</sup> Ibid.

## CHAPTER 3: IMPLEMENTATION OF THREE MODEL APPROACH TO IRAN'S NUCLEAR PROGRAM

The Iranian nuclear program and the negotiation process were described in the previous chapter. In this chapter of the thesis, main motivations of Iran to resume its nuclear program will be discussed. To do this, three models will be used because the Three Models proposed by Scott Sagan, provide a useful tool for a comprehensive analysis. In this chapter, we will apply these three models to the Iranian nuclear issue. Each of these models will be useful to evaluate and understand the dimensions of this issue.<sup>451</sup>

### 3.1. SECURITY MODEL

The Security Model is an explanatory model in which classical realist and structural realist approaches are centrally located. According to the realist approach, states are located in an environment of insecurity that is full of threats. States must be strong to protect their existence and “earned values”.<sup>452</sup> This approach emphasizes the concept of “power”. States need power to protect their interests and provide security. This approach possesses a narrow and deterministic definition of security. According to realists, security is provided by increasing military power and the capacity of the state. On the other hand, Neo-realists claim that continuously increasing power and capacity leads to the “*security dilemma*”.<sup>453</sup> A narrow and limited understanding of traditional security has formulated the idea of classic security: “*Threat Perception = Estimated*

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<sup>451</sup> It should not be ignored that although the process of obtaining nuclear weapons takes a relatively long time, the decision to acquire nuclear weapons may change in a shorter time. Therefore, it is difficult to argue that a certain country, Iran in this study, would never have nuclear weapons.

<sup>452</sup> Atilla Sandıklı, Bilgehan Emeklier, “Güvenlik Yaklaşımlarında Değişim ve Dönüşüm”, pp.6, in (ed.) Atilla Sandıklı, “Teoriler Işığında Güvenlik, Savaş, Barış ve Çatışma Çözümleri”, Bilgesam Yayınları, İstanbul, 2012

<sup>453</sup> “Security dilemma: the paradox that occurs when a state seeks to improve its own security resulting in the decreased security of other states. Providing assurances to the contrary is not effective, realists argue, given the lack of trust between actors in a self-help world. At the heart of the security dilemma is the idea that security is a relative concept: all actors cannot have more of it.” Tim Dunne, Milje Kurki, Steve Smith, “International Relations Theories: Discipline and Diversity”, Oxford University Press, New York, 2007, pp.339

*Capacity x Estimated Intention*".<sup>454</sup> In accordance with this formulation, the *military capacity* of other states became the basic data in the calculation threat because for realists it is not possible to be sure of the intention of any country. According to a Hobbesian view, states are assumed to be malicious most of the time.<sup>455</sup> There is a difference in opinion among structural realists about the required power to ensure security. For Offensive realists, maximizing power and being a hegemon is the best way to ensure survival. On the other hand, defensive realists argue that striking a balance is required.<sup>456</sup>

### 3.1.1. The Concept of Deterrence

According to realists war is inevitable because there is no higher authority to prevent it. When analyzed in terms of the classical theory, states are required to prepare for war (*si vis pacem, para bellum*). War is not a different phenomenon from the political process. According to Carl Von Clausewitz, war is a political tool used in solving problems.<sup>457</sup>

The invention of nuclear weapons has changed the classical logic of war.<sup>458</sup> Robert Powell claims that there were two main assumptions on the basis of classical logic of war. First, a state has the ability to defend itself and attack to its enemies with the similar kind of military forces. The army functions in both attack and defense. Second, a state possible to defend itself by destroying the military forces of the enemy,

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<sup>454</sup> J. David Singer, Threat-Perception and the Armament-Tension Dilemma, *The Journal of Conflict Resolution*, Vol.2, No.1, Studies on Attitudes and Communication (Mar., 1958), p.94

<sup>455</sup> Ibid.

<sup>456</sup> John J. Mearsheimer, "Structural Realism" in (Ed.)Tim Dunne, Milja Kurki, Steve Smith,"*International Relations Theories: Discipline and Diversity*", Oxford University Press, New York, 2007, pp.75-76

<sup>457</sup> Metin Gurcan, "Savaşın Evrimi ve Teorik Yaklaşımlar", pp.72-73 in (ed.) Atilla Sandıklı, "*Teoriler Işığında Güvenlik, Savaş, Barış ve Çatışma Çözümleri*", Bilgesam Yayınları, İstanbul, 2012

<sup>458</sup> Many attempts took place in order to protect against a nuclear attack but it is difficult to say that a satisfactory outcome was reached. New technological developments are reflected in both offensive(such as multiple independently targeted reentry vehicles- MIRVs, intercontinental ballistic missiles-ICBMs, submarine launched ballistic missiles-SLBMs, etc.) and defensive technology (such as radars, surface-to-air missiles-SAMs, etc.). Therefore MAD (mutual assured destruction) continues to its validity. Mutual Assured Destruction, *Encyclopedia Britannica*, <<http://global.britannica.com/EBchecked/topic/421797/nuclear-strategy/52989/Mutual-assured-destruction>>, [Access Date:21/11/2014]

but the nuclear revolution has led to problems in these assumptions because in case of MAD (Mutual Assured Destruction), defense is impossible.<sup>459</sup>

Deterrence means, “*The prevention of action by the existence of a credible threat of unacceptable counteraction and/or belief that the cost of action outweighs the perceived benefits.*”<sup>460</sup> And being persuasive is quite an essential element for the implementation of deterrence strategy.<sup>461</sup>

Nuclear weapons have the ability to provide unacceptable damage. Therefore, these weapons seem attractive for deterrence. In the period after 1945, the lack of a “hot” war between the two superpowers demonstrates the effectiveness of the deterrence strategies. But according to Thomas C. Schelling frequently possible to come across situations where deterrence strategy does not work. Schelling gives the following examples to support his view: Egypt and Syria were not deterred by Israel in the Yom Kippur War (1973), and North Korea was not deterred by nuclear weapons of the United States.<sup>462</sup>

A war that may arise between these two countries, with almost all the nuclear warheads in the world, could lead to a catastrophe. Schelling finds such comments as exaggerated.<sup>463</sup> “Balance of terror”<sup>464</sup> has hampered the emergence of a large-scale war among blocks. Kenneth Waltz claimed that “*There has never been a full-scale war between two nuclear armed states.*”<sup>465</sup> For this reason, nuclear-armed Iran will put an end to Israel's regional nuclear monopoly and contribute to the stabilization of the region.<sup>466</sup>

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<sup>459</sup> Robert Powell, “Nuclear Deterrence Theory: The Search for credibility”, Cambridge University Press, New York, 1990, p.3

<sup>460</sup> DOD Dictionary of Military and Associated Terms, <[http://www.dtic.mil/doctrine/dod\\_dictionary/data/d/3763.html](http://www.dtic.mil/doctrine/dod_dictionary/data/d/3763.html)>, [Access Date: 14/11/2014] “unacceptable damage” that is situated in the definition, refers to destruction of 25% of the population and 50% of the industry. Mutual Assured Destruction, *Encyclopedia Britannica*, <<http://global.britannica.com/EBchecked/topic/421797/nuclear-strategy/52989/Mutual-assured-destruction>>, [Access Date:21/11/2014]

<sup>461</sup> Sait Yılmaz, “Ulusal Savunma: Strateji, Teknoloji, Savaş”, Kum Saati Yayınları, İstanbul, 2009, p.92

<sup>462</sup> Thomas C. Schelling, “Arms and Influence: With a New Preface and Afterward”, Yale University Press, New Haven, 2008(First Edition in 1966), pp.x-xi

<sup>463</sup> Ibid. p.18

<sup>464</sup> See; Erhan Güngör, Ahmet Emin Dağ, “Uluslararası ilişkiler ve Diplomasi Sözlüğü”, Ağaç Kitabevi Yayınları, İstanbul, 2009, p.54

<sup>465</sup> Kenneth N. Waltz, “Why Iran Should Get the Bomb: Nuclear Balancing Would Mean Stability”, *Foreign Affairs*, Vol. 91, No.4, July/August 2012, p.5

<sup>466</sup> Ibid. p.3

Kenneth Waltz argues that the presence of MAD status between countries is not necessary for the emergence of nuclear deterrence because a relatively small nuclear arsenal is enough to provide deterrence.<sup>467</sup> According to Waltz, passing the nuclear threshold is more decisive than the amount of nuclear weapons. Therefore Waltz claimed that “*Once Iran crosses the nuclear threshold, deterrence will apply, even if the Iranian arsenal is relatively small.*”<sup>468</sup>

According to the security model, states could decide to develop nuclear weapons to enhance their national security. If a country faces a serious hazard that threatens its existence and national security, the country could acquire nuclear weapons in order to heighten its security. As a logical consequence of this situation, if there is no serious threat to the country's existence or sovereignty, states may refrain from having nuclear weapons. Iran's security threat perceptions will be evaluated in order to apply this approach to Iran's nuclear program.

### 3.1.2. Iran's Threat Perceptions

Iran's security threat perceptions are key factors that shape its foreign policy. Firouzabadi refers to this situation as follows: “*The most important, vital and urgent aim of foreign policy is conserving presence and providing national security of Islamic Republic of Iran.*”<sup>469</sup> Immediately after the Islamic Revolution, the new regime of Iran found himself in a battle. The Iraq-Iran war led to a serious sovereignty problem for the regime, and Iran began to conduct a pragmatic foreign policy after the war. This transition emerged as a result of the political and military changes in the region. One of the most significant events was the Iraqi invasion of Kuwait in 1990.<sup>470</sup>

According to Mohsen Rezaee, who is general secretary of the Expediency Discernment Council of the System (مجمع تشخیص مصلحت نظام) argued that Iran National

<sup>467</sup> Kenneth N. Waltz, “Nuclear Myths and Political Realities”, *American Political Science Review*, Volume 84, no:3(September 1990), pp.733-734

<sup>468</sup> Kenneth N. Waltz, “Why Iran Should Get the Bomb: Nuclear Balancing Would Mean Stability”, *Foreign Affairs*, Vol. 91, No.4, July/August 2012, p.5

<sup>469</sup> Seyyed Jalal Dehghani Firouzabadi, “Foreign Policy of the Islamic Republic of Iran”, Research and Development Center for Human Sciences, Tehran, 2010 (Third edition), p.148

<sup>470</sup> Anoushiravan Ehteshami, “Iran's Politics and Regional Relations: Post-Detente”, *Perceptions*, Spring 2007, Vol. XII, no.1, pp.29-30

Security can be better understood when evaluated at the level of regional security.<sup>471</sup> But this “*region*” is not limited to the Middle East; Rezaee refers to Southwest Asia<sup>472</sup> as the region. There are many sources and factors which led to the emergence of security problems in this area. According to Rezaee, the sources of these threats are divided into three groups: external, regional, and internal. External factors are communism (that disappeared with the collapse of the Soviet Union), colonization<sup>473</sup> and Zionism.<sup>474</sup> Regional Conflicts, those countries of the region they lived with each other, are another sources of security problems. Wars between Iraq and Iran, Iraq and Kuwait, Azerbaijan and Armenia, and disputes among Iran-U.A.E, Afghanistan-Pakistan, Saudi Arabia-Yemen, etc. Apart from these, there are several factors and sources which are generating problems of security such as; dictatorship, underdevelopment, inequity in income distribution, severe violation of human rights, etc. Rezaee deems it necessary to establish a regional bloc in order to cope with these problems. According to him, it has great potential in terms of economic development, international peace and security, but there are significant obstacles to the realization of this potential: the strategic cooperation of some countries in the region with the hegemonic power (the United States), border disputes among bloc members, the phenomenon of Israel, et cetera.<sup>475</sup> Basic elements that shape Iran's regional security perceptions are prevention of the hegemonic power's intervention, or at least limiting its presence in the region, and the reduction of Israel's activity in the region.

If we look at the relations among Southeast Asian countries and Iran, we can see changing relationships over time. This change emerged as a result of developments both in Iran and other countries in the region.

The invasion of Afghanistan by the Soviet Union was a major concern in Iran's pre-revolution foreign policy. The emergence of a pro-Soviet government in

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<sup>471</sup> Mohsen Rezaee, “Iran's National Security Strategy in the coming decade”, *Discourse*, vol.8, no.2, Winter 2009, pp.17-18

<sup>472</sup> Including the Caucasus, Central Asia, Pakistan, and Afghanistan. *Ibid.*

<sup>473</sup> The author also considers US policies in that region in this context. Military interventions in Afghanistan, Iraq, and Lebanon, and prior to that, supporting MKO( Mojahedin-e-Khalq Organization- as also known People's Mojahedin Organization) in Iran, the role of the United States in the Iraq-Iran War (1980-1988), and its share in the Taliban's rise. These are the main reflections of the colonization policy of the United States. *Ibid.* pp.19-20

<sup>474</sup> The foundation of Israel led to the emergence of a security issue in Palestine, Jordan, Syria, Egypt and Lebanon. All countries in the region are indirectly affected by this new situation. *Ibid.* pp.20-22

<sup>475</sup> *Ibid.* pp.24-26

Afghanistan was a serious threat to Iran. During the Soviet-Afghan War (1979-1989)<sup>476</sup>, Pakistan's strategic importance increased for the West and Pakistan became a significant ally in the fight against the Soviet Union. After the Soviet withdrawal and the Afghan Civil War, the Taliban rose with the help of Pakistan. The Taliban's anti-Shia and anti-Iran views prevented the establishment of a positive relationship between the Iran and Afghanistan.<sup>477</sup> According to Shireen Hunter the U.S invasion of Afghanistan have led to collapse of the Taliban regime but this situation did not provide a favorable security environment for Iran because the US military bases and NATO military forces have emerged as new security threats to Iran.<sup>478</sup> But it should be noted that withdrawal of the United States' troops from Iraq and planning to get out of Afghanistan led to a change in Iran's regional security threat perception.

There were good relations between Pakistan and Iran in the early years of the Islamic Revolution. General Zia ul Haq's policy of the "Islamization of Pakistan" strengthened friendly relations, but events that took place within the next 20 years led to significant changes in this relationship. The spread of Saudi-inspired Sunni Islam in Pakistan, and thereby increasing the influence of Saudi Arabia and the U.A.E., exacerbated the sectarian discrimination. Thus, friendly relations between the two countries have been undermined.<sup>479</sup> Having a neighbor with nuclear weapons is a factor that increases the existing threat in terms of Iran, but the intensity of this threat perception is not high.<sup>480</sup>

There is regional leadership race between Iran and Turkey. As mentioned above, Turkey's close relations with the West and Israel and its NATO membership causes relations to remain at a certain level. These two countries are providing different examples of development. Turkey's role in the Greater Middle East Initiative<sup>481</sup> was not

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<sup>476</sup> The Iraq-Iran war was continuing in the same period. Struggling against the Soviet Union was not among the priorities of Iran.

<sup>477</sup> Shireen T. Hunter. op. cit. pp.151-156

<sup>478</sup> Ibid. p.153, See: Appendix 1

<sup>479</sup> Ibid. pp.143-147

<sup>480</sup> See table in; Scott Parrish, William C. Potter, "Nuclear Threat Perceptions and Nonproliferation Responses: A Comparative Analysis", The Weapons of Mass Destruction Commission, Stockholm, 2006, p.3, <<http://www.un.org/disarmament/education/wmdcommission/files/No36.pdf>>, [Access Date:14/11/2014]

<sup>481</sup> For details about this project, See: Eddie J. Girdner, "The Greater Middle East Initiative: Regime Change, Neoliberalism and US Hegemony", (ed.) İlhan Uzgel, *The Turkish Yearbook of International Relations*, Research Center For International Political and Economic Relations, vol. XXXVI, 2006, pp.37-71

welcomed by Iran. Turkey claims to be a “model” country for Middle Eastern countries, increasing the competition between the two countries. According to Shireen Hunter, “...*Turkish- Iranian relations, although at times very tense, have never deteriorated beyond a certain level and have been improving since 2004.*”<sup>482</sup>. Iraq was the greatest threat to Iran’s security especially in the post-revolutionary period. Long and bloody war between the two countries that generated traumatic results maintains its freshness in the collective memory of Iranians. The allegations about Iraq’s nuclear weapon programme and Iraq’s attack on Kuwait increased the security concerns of Iran.<sup>483</sup> After the US military intervention in Iraq, the process of building a new state has revealed both new opportunities and security issues for Iran.<sup>484</sup> The US invasions of Afghanistan and Iraq have led to the destruction of hostile regimes to Iran in these countries, yet the regimes in question were replaced with a large number of American military bases<sup>485</sup> so that three sides of Iran were surrounded by the US bases (See: Appendix 2). The United States withdrew its troops from Iraq in 2011 and is planning to withdraw its troops from Afghanistan in a stepwise manner, but in both countries, a stable government has still not been established.

After the Islamic Revolution, relations between Iran and the Gulf states have been strained due to the fear of the spread of the revolution.<sup>486</sup> During the presidency of Mohammad Khatami, Iran established positive relations with the Gulf and other Arab countries.<sup>487</sup>

Iran under the Shah welcomed the foundation of Israel. Mohammad Reza Shah aimed to cooperate with Israel, a state in the region based on western values, in the process of Westernization. By this means, Iran’s cooperation with a non-Arab state<sup>488</sup> in technological, agricultural, economical, and military fields could empower its strategic

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<sup>482</sup> Shireen T. Hunter. op. cit. pp.167

<sup>483</sup> Daniel L. Byman... et. al. “Iran’s Security Policy in the Post-Revolutionary Era”, National Defence Research Institute, 2001, pp.55. Shireen T. Hunter. op. cit. pp.216

<sup>484</sup> Kurds’, who live in Northern Iraq, new position in the newly established state structure and Shiites’, who are most of Iraq’s population, place in management levels have become significant matters.

<sup>485</sup> See figure in, Paul Rogers, “IRAN: Consequences of a War”, Oxford Research Group, 2006, pp.13 <<http://www.oxfordresearchgroup.org.uk/sites/default/files/IranConsequences.pdf>>, [Access Date:14/11/2014]

<sup>486</sup> Daniel L. Byman... et. al. op. cit. pp.74

<sup>487</sup> Anoushiravan Ehteshami, op. cit. pp.32-33

<sup>488</sup> The 1960’s was a period which saw the rise of Arab nationalism (Pan-Arabism) and Baathist regimes. In the period in question, relations among Iran and Arab countries were not at the desired level. Iran’s efforts to become a regional power had been met with skepticism and concern by Arab countries. Cooperation between Israel and Iran enhanced this concern.



importance. In terms of the foreign policy of the Shah, a desire to take advantage of Israel's influence on the U.S. was another motivating factor in establishing close relations with Israel. Ben Gurion, who was the first prime minister of Israel, put forward a doctrine (Doctrine of Periphery)<sup>489</sup> which aimed at strengthening the political position of Israel by engaging co-operation with non-Arab countries in the region. Thereby Israeli-Iranian relations were built on mutual interest. Also, Iran's cooperation policy with Israel made it easy to receive military aid from the United States. The 1973 Oil Crisis provided an important economic source to Iran. As mentioned above, this event accelerated the armament efforts of Iran. Relations with Israel were not completely smooth during the Shah period. After the triumphs of Israel in the 1967 (also known as the Six Day War) and 1973 (Yom Kippur War) wars, the Shah began to criticize Israel because there was no longer a serious competitor for regional leadership.<sup>490</sup> After the Islamic Revolution, a major change occurred in Iranian political discourse. Anti-Western political discourse was also used against Israel since it was seen as the representative of the West in the region. Mehdi Ahouei claims that Imam Khomeini's opposition to the Israeli state stems from his perception regarding Israel. According to Khomeini, Israel is the main reason of "... *the expansion neocolonialism and Western hegemony in the Islamic world, the Middle East and Iran.*"<sup>491</sup> Therefore, according to Khomeini's viewpoint there is no difference between Israel, the Shah and the United States. Khomeini describes Israel as a cancerous tumor.<sup>492</sup>

One of the areas that are subject to competition between Israel and Iran is the Palestinian issue or the Middle East peace process. It is difficult to remain neutral on the Palestinian dispute for Iran which claims the mantle of leadership over the Islamic world. As well as expressing criticism of the Israeli government, Iran has close relationship with Lebanese Hezbollah and Hamas.<sup>493</sup> This situation makes Iran a primary threat in Israel's threat perceptions. On the other hand, from the perspective of Iran, Israel can be seen as the most important threat in the region. According to Daniel Byman Iranian military officials believe that Israel is planning a conflict with Iran.

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<sup>489</sup> Dalia Dassa Kaye, Alireza Nader, Parisa Roshan, "Israel and Iran: Dangerous Rivalry", RAND Corporation, 2011, p.10

<sup>490</sup> Mahdi Ahouei, "Developments of Iranian Political Discourse on Israel: From Past to Present", *Discourse: An Iranian Quarterly*, Vol. 9, No. 3-4, Fall 2010-Winter 2011,

<sup>491</sup> Ibid.

<sup>492</sup> Ibid.

<sup>493</sup> Daniel L. Byman... et. al. op. cit. pp.83-84

According to them, Israel's increasing diplomatic and economic force in the shores of the Caspian Sea and the Persian Gulf is tangible evidence of encirclement strategy of Israel.<sup>494</sup>

**Table 3:** Proliferation Threat Perceptions; Individual States

	<b>China</b>	<b>DPRK</b>	<b>India</b>	<b>Iran</b>	<b>Israel</b>	<b>Japan</b>	<b>Pakistan</b>
<b>Brazil</b>	Low	Low	Low	Low	Low	Low	Low
<b>China</b>	N/A	Moderate	Moderate	Moderate	Low	High	Low
<b>Egypt</b>	Low	Low	Low	High	High	Low	Moderate
<b>Germany</b>	Low	High	Low	High	Moderate	Low	Moderate
<b>India</b>	Moderate	Low	N/A	Low	Low	Low	High
<b>Indonesia</b>	Moderate	Moderate	Moderate	Moderate	Low	Low	Moderate
<b>Iran</b>	Low	Low	Low	N/A	High	Low	Low-Moderate
<b>Israel</b>	Moderate	High	Low	High	N/A	Low (N/A?)	High
<b>Japan</b>	Moderate	High	Low	Moderate	Low	N/A	Moderate
<b>Pakistan</b>	Low	Low	High	Low	Low	Low	N/A
<b>ROK</b>	Low-Mod	Moderate-High	Low	Moderate	Low	Low	Moderate
<b>Russia</b>	High	Moderate	Low	Moderate	Moderate	Low-Moderate	High
<b>Spain</b>	Low-Moderate	High	Low-Moderate	High	Moderate-High	Low	Moderate
<b>South Africa</b>	Low	Low	Low	Low	Low	Low	Low
<b>Sweden</b>	Low	High	Low	High	Moderate	Low	Moderate
<b>U.S.</b>	Moderate	High	Moderate	High	Low	Low	Moderate

**Source:** Scott Parrish, William C. Potter, "Nuclear Threat Perceptions and Nonproliferation Responses: A Comparative Analysis", The Weapons of Mass Destruction Commission, Stockholm, 2006, p.3

In terms of Iran, Israel stands out as the most serious threat among nuclear weapons states (See Table 3). Israel often proposed military action as a solution to the nuclear dispute.<sup>495</sup> Ballistic missile development activities of Iran and long-range

<sup>494</sup> Ibid. pp.83

<sup>495</sup> In 1981, Israel bombed Iraq's nuclear facilities in order to remain the regional nuclear monopoly. Syria intervened for the same purpose in 2007. Similar action is considered for Iran. Kenneth N. Waltz, "Why Iran Should Get the Bomb: Nuclear Balancing Would Mean Stability", *Foreign Affairs*, Vol. 91, No.4, July/August 2012, pp.3

missiles<sup>496</sup> (such as Shahab 3 and Sajjil 2) which were tested by Iran (See Table 4.) enhance the security concerns of the Israeli government. Iran's security institutions (IRGC and Artesh<sup>497</sup>) expect to deter a possible Israeli attack through these military progresses.<sup>498</sup> In short, Israel and Iran are perceived as a threat to each other. According to the Security Model, for Iran, it is reasonable to acquire nuclear weapons (or achieving nuclear capacity at least) in order to balance Israel's power. As mentioned above, Kenneth Waltz argues that a nuclear-armed Iran will contribute to the stability of the Middle East because according to him Israel's nuclear monopoly leads to instability.<sup>499</sup> Waltz also adds the following: *"In no other region of the world does a lone, unchecked nuclear state exist. It is Israel's nuclear Arsenal, not Iran's desire for one that has contributed most to the current crisis."*<sup>500</sup> Scott Sagan opposed Kenneth Waltz on this view. According to Scott Sagan, nuclear weapons in the hands of the Iranian regime require serious worrying. He argues that it could be misleading to look at the Cold War deterrence; instead of this, using the Pakistan analogy will be more useful for understanding the effects of a nuclear Iran. For him, if Iran obtains nuclear weapons, it may behave more aggressively and terrorist groups can seize these weapons more easily because there will be an indefinite control over nuclear weapons and materials.<sup>501</sup> It also should be noted that there is another opinion, which is distrust to the above two views. According to Brito-Intriligator Cardinality Theorem *"...the question of how the*

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<sup>496</sup> The Iraqi invasion of Iran in September 1980 and the long and bloody conflict that ensued led to a drastic reassessment of Iran's security environment and the development of a strategy to deal with it. The new strategy that began to emerge during the war emphasized conventional and nuclear deterrence. In that context, it gave a special place to ballistic missiles and put a high priority on the development of an indigenous ballistic missile industry. Kamran Taremi, "Beyond the axis of Evil: Ballistic Missiles in Iran's Military Thinking", *Security Dialogue*, vol.36(1), 2005, pp.95 Also for more information about Iran's ballistic missiles, See: Michael Elleman, "Iran's Ballistic Missile Program", <<http://iranprimer.usip.org/resource/irans-ballistic-missile-program>>, [Access Date:15/11/2014]

<sup>497</sup> Artesh is Iran's regular army.

<sup>498</sup> Daniel L. Byman, et. al. op. cit. pp.85-86

<sup>499</sup> Although Israeli governments have not confirmed that it has nuclear weapons, there is a widespread belief that Israel has nuclear weapons. For detail about nuclear weapons of Israel, see: <<https://fas.org/nuke/guide/israel/nuke/>>, Kenneth N. Waltz, "Why Iran Should Get the Bomb: Nuclear Balancing Would Mean Stability", *Foreign Affairs*, Vol. 91, No.4, July/August 2012, pp.3, *"Because of the official Israeli strategy of ambiguity, no strategic doctrine has ever been publicly articulated or presented. But indirect evidence, coupled with observations and speculations based on rational analysis, leads to several assumptions about it."* Yair Evron, "Israel: The Role of Nuclear Weapons", in Mark Fitzpatrick et al. (Eds.), *Nuclear Doctrines and Strategies: National Policies and International Security*", IOS Press, Moscow, 2007, pp.121-128

<sup>500</sup> Ibid.

<sup>501</sup> Scott Sagan, Kenneth Waltz and Richard K. Betts, "A Nuclear Iran: Promoting Stability or Courting Disaster?", *Journal of International Affairs*, Spring/Summer 2007, pp.140-141 <[http://ir.rochelleterman.com/sites/default/files/Sagan\\_Nuclear\\_Iran.pdf](http://ir.rochelleterman.com/sites/default/files/Sagan_Nuclear_Iran.pdf)>, [Access Date:18/11/2014]

*proliferation of nuclear weapons changes the probability of war is one that cannot be answered. Thus, any research that makes claims on this issue must be viewed with skepticism...*<sup>502</sup>

Although the United States is not a Middle Eastern country, it is centrally located in the threat perception of the Iranian government. This perception has historical roots caused by the coup of 1953 organized by the CIA and MI6, the US' supporting Shah's repressive government, cooperation between the CIA and SAVAK<sup>503</sup> and protection of the Shah after the Islamic Revolution.<sup>504</sup> After the founding of Islamic Republic of Iran, relations between the two countries have changed completely and they have become enemies.<sup>505</sup> The US' "Policy of Dual Containment"<sup>506</sup>, which aimed for "...a regime change through a policy of isolation and containment..."<sup>507</sup>, helping Iraq in the Iraq-Iran war, shooting down an Iranian commercial airplane (Air Flight 655)<sup>508</sup>, President Bush's "Axis of Evil" speech, and economic sanctions that target Iran, are the main events that feed this perception.<sup>509</sup>

<sup>502</sup> Dagobert L. Brito, Michael D. Intrilligator, "Defence, Economics of", (Ed. by) Neil J. Smelser and Paul B. Baltes, *International Encyclopedia of Social and Behavioral Sciences*, Elsevier Science, 2001, p.3354

<sup>503</sup> It was the intelligence organization of the Shah government and an important instrument of oppression used by the authoritarian regime. SAVAK was installed in 1957, with the help of the CIA and Israeli officers. After the Islamic Revolution, VEVAK (وزارت-اطلاعات و امنیت-کشور) took the place of this institution in 1984. Anthony H. Cordesman, "Iran's Revolutionary Guards, the Al Quds Force, and Other Intelligence and Paramilitary Forces", Center for Strategic and International Studies, Rough Working Draft, Washington, 2007, pp.13.

<sup>504</sup> William O. Beeman. op. cit. pp.127-130

<sup>505</sup> American administrators' negative thoughts about Iran are not a condition that occurs spontaneously. The Hostage Crisis (1979-1981) has been an important landmark in the evolution of this idea. Another reason is Iran's assistance to religious organizations that considered terrorists by the United States. For this reason, Iran is described as a "sponsor of terrorism". Human rights violations in Iran are another subject of criticism. For details about "The Sins of Iran", See: William O. Beeman, "The 'Great Satan' vs. the 'Mad Mullahs': How to the United States and Iran Demonize Each Other", Praeger Publishers, London, 2005, pp.137-163

<sup>506</sup> For details about this policy See: Sasan Fayazmanesh, "The United States and Iran: Sanctions, wars and the Policy of Dual Containment", Routledge, New York, 2008

<sup>507</sup> "In a not-so-veiled threat that more than hinted of a regime change, Bush said his administration was providing more than \$75 million in 2006 'to promote openness and freedom for the Iranian people.'" Scott Ritter, "Target Iran: The Truth about White House's Plans for Regime Change", Nations Book, New York, 2006, pp.195, Shireen T. Hunter, "Iran's Foreign Policy in the Post-Soviet Era: Resisting the new International order", Praeger, 2010, p.5

<sup>508</sup> A stamp depicting this attack was released by the Iranian administration in order to prevent the forgetting of the bitter memories of Iranians. To see this stamp; <http://numispedia.org/stamps/images/2335AAA.jpg>, [Access Date:11/11/2014]

<sup>509</sup> William O. Beeman. op. cit. pp.130-135, There are several facts and circumstances that shape the US' perceptions about Iran. See for detail; Ibid. pp.137-163

**Table 4:** Iran's Ballistic Missile Tests

Test No.	Test Date (Approximate)	Missile Type	Iran Confirmed	Test Outcome	Testing Organization	Test Reason
1	July 22, 1998	Shahab-3	Yes	Failure	Iran Revolutionary Guard Corps (IRGC)	Technical/operational
2	February 20, 2000 (alleged)	Shahab-3	No	Failure	IRGC	Technical/operational
3	July 15, 2000	Shahab-3	Yes	Success	IRGC	Technical/operational
4	September 21, 2000	Shahab-3	Yes	Failure	IRGC	Domestic politics
5	May 2002	Shahab-3	Yes	Success	IRGC	Technical/operational
6	June 2002 (alleged)	Shahab-3	No	Unclear	IRGC	Technical/operational
7	July 4, 2002	Shahab-3M	No	Failure	IRGC	Technical/operational
8	June 2003	Shahab-3	Yes	Success	IRGC	Technical/operational
9	August 11, 2004	Ghadr-1*	Yes	Success	IRGC	International signal
10	September 12-18, 2004	Ghadr-1	Yes	Success	IRGC	Technical/operational
11	October 20, 2004	Ghadr-1	Yes	Success	IRGC	International signal
12	January 17, 2006 (alleged)	Ghadr-1?	No	Success	IRGC	International signal
13	May 23, 2006	Ghadr-1?	No	Partial success	IRGC	International signal
14	November 2, 2006	Ghadr-1	Yes	Success	IRGC	International signal
15	February 25, 2007	Unnamed	Yes	Unclear	Iran Space Agency (ISA)	International signal
16	February 4, 2008	Kavoshgar-1	Yes	Success	ISA	Domestic politics
17	July 9, 2008	Shahab-3	Yes	Success	IRGC	International signal
18	August 17, 2008	Safir-1 SLV	Yes	Failure	ISA	Domestic politics
19	November 12, 2008	Sejjil-1	Yes	Success	IRGC	International signal
20	November 26, 2008	Kavoshgar-2	Yes	Success	ISA	Technical/operational
21	February 2, 2009	Safir-2 SLV	Yes	Success	ISA	Domestic politics
22	May 20, 2009	Sejjil-2	Yes	Success	IRGC	Domestic politics

23	September 28, 2009	Ghadr-1	Yes	Success	IRGC	International signal
24	September 28, 2009	Sejjil-2	Yes	Success	IRGC	International signal
25	December 16, 2009	Sejjil-2	Yes	Success	IRGC	International signal
26	February 3, 2010	Kavoshgar-3	Yes	Success	ISA	Domestic politics
27	October 2010	Sejjil-2	No	Unclear	IRGC	Technical/operational
28	February 2011	Shahab-3	Yes-delay	Success	IRGC	Technical/operational
29	February 2011	Sejjil-2	Yes-delay	Success	IRGC	Technical/operational
30	March 15, 2011	Kavoshgar-4	Yes	Success	ISA	Technical/operational
31	June 15, 2011	Safir-2B SLV	Yes	Success	ISA	Technical/operational
32	June 28, 2011	Ghadr-1	Yes	Success	IRGC	Technical/operational
33	August 23-September 22, 2011	Kavoshgar-5	Yes-delay	Failure	ISA	Technical/operational
34	February 3, 2012	Safir-2B SLV	Yes	Success	ISA	Domestic politics
35	July 3, 2012	Shahab-3	Yes	Success	IRGC	International signal

**Source:** Jacques E. C. Hymans, Matthew S. Gratias, "Iran and the Nuclear Threshold: Where is the line?" *Non-Proliferation Review*, Vol.20, no.1, pp.30-31

Hossein Seifzadeh examined Iran's threat perceptions at three levels. The first level is threats to the Regime; the second level is threats to national interests and the unitary structure of Iran, or moral values, and the third is threats to fundamentalists' puissance.<sup>510</sup> Iran's nuclear program is influenced by the three levels of threat perceptions. The Security model mostly takes into account the threats to the existence of Islamic regime, yet this approach excludes from the analysis many factors that can impact the nuclear program.

According to Nasser Hadia, there are five factors that affect Iran's nuclear program; *Ideological Sources, Threat Perceptions, Organizational Imperatives, National Pride, Past Experiences*.<sup>511</sup> Ideological sources are; *Revolutionary Islam, Reformist Islam, and Iranian Nationalism*. There should be harmony between the ideological sources. Perception of threats can be considered in two groups; *threats to Revolutionary ideology/values* and *threats to national interests*. The main threats to

<sup>510</sup> Hossein Seifzadeh, "Iran's Assertiveness in Maintaining its Peaceful Nuclear Technology", *Perceptions*, vol. X, no.3, Autumn 2005, p.128

<sup>511</sup> Nasser Hadian, "Iran's Nuclear Program: Contexts and Debates", in *IRAN'S BOMB: American and Iranian Perspectives*, The Nixon Center, 2004, pp.56-59

Revolutionary ideology are “global arrogance” (U.S) and international Zionism (Israel) because according to governing ideology these two powers are trying to destroy Islam. Iran sees itself as the leader and as the center of the Islamic world (*Umm Al-Qura*), so Iran’s duty is to protect it against dangers. “*Iran’s national interest becomes more important when there is incompatibility with ideological priorities.*”<sup>512</sup> Iranian security and defense policy are determined by national interests such as geopolitical issues and territorial integrity. For Iran, in its surroundings, especially neighboring countries, threats are more dangerous than far away.<sup>513</sup>

### 3.2: DOMESTIC POLITICS MODEL

The Domestic politics model focuses on domestic actors who can impact the decision-making process. According to Sagan there are three kinds of actors playing important roles in connection with a state’s decision to pursue the nuclear bomb: first, the state’s nuclear energy establishment, including scientific institutions (in Iran’s case the AEIO), technical universities and scientific organizations; second, the professional military<sup>514</sup> as bureaucratic actors (in Iran’s case the IRGC); third, politicians (in Iran’s case the Supreme Leader, the President, the Supreme National Security Council and the Parliament) who can use nuclear issues for raising their political esteem and gaining public support.<sup>515</sup> This model explains that security threats are not the only reason for nuclear proliferation and that potential threats to a state’s security can be interpreted in various ways by domestic political actors<sup>516</sup>. “*...Security threats are therefore not the central cause of weapons decisions according to this model: they are merely windows of opportunity through which parochial interests can jump.*”<sup>517</sup>

This proposition is valid for Iran’s decision-making process. “*Foreign policy in the Islamic Republic of Iran results from complex, multifaceted interactions among*

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<sup>512</sup> Ibid. p.57

<sup>513</sup> Ibid. p.58

<sup>514</sup> Although Basij forces are not involved in the professional military, they can be considered a domestic political actor because of their crucial role in Iran’s politics, economy and society. For detailed information about Basij’s importance See; Golkar Saeid, “Paramilitarization of the Economy: The Case of Iran’s Basij Militia”, *Armed Forces and Society*, October 2012, Vol. 38, No. 4, pp.625-648

<sup>515</sup> Scott D. Sagan, “Why do States Build Nuclear Weapons?-Three Models in Search of a Bomb”, *International Security*, Vol. 21, No.3, pp.63-64

<sup>516</sup> Sagan, D. Scott, p.65

<sup>517</sup> Ibid. p.65

*numerous governmental and non-governmental participants*".<sup>518</sup> The data and information that come through different channels (diplomatic channels, security channels, etc.) reach key decision-makers in foreign policy<sup>519</sup> who may have different standpoints, perceptions and understandings of what the national or organizational interests are. However, this situation is not an obstacle to reach a relative consensus on foreign policy, especially during periods when a threat emerges against Iran. For instance, George Bush's "Axis of Evil" speech, which accused Iran of being a threat to world security, provided the incentive for decision-makers of Iran's foreign policy to act together despite their individual differences.<sup>520</sup>

In a similar way, Iran's nuclear policy is shaped by the conflict among different ideas, purposes and groups. In accordance with the Domestic Politics Model, the AEIOI, scientific organizations (such as technical universities and research institutions) and military-industrial organizations can be evaluated as a group.<sup>521</sup>

### **3.2.1: Atomic Energy Organization of Iran**

Iran's Atomic Energy Organization (IAEO), several universities and research institutions and defense establishments, like other bureaucracies in the world, have their own concerns and interests. Iran's nuclear institutions and bureaucracies are concerned about an agreement with the IAEA that would prevent their goals of survival.<sup>522</sup>

The AEIOI was established in 1974 in order to supervise Iran's nuclear energy programme. According to the founding law of the AEIOI, all activities related to nuclear energy are under the authority of this institution.<sup>523</sup> Before the revolution, the Shah was aiming to reach 23,000 megawatts of nuclear power capacity. Advanced nuclear technology and infrastructure were necessary to realize this goal.<sup>524</sup> This institution

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<sup>518</sup> Maleki, Abbas. "Decision Making in Iran's Foreign Policy: A Heuristic Approach." *Journal of Social Affairs*, Vol.19, No.73, 2002, pp.39-59. <<http://www.caspianstudies.com/article/Decision%20Making%20in%20Iran-FinalDraft.pdf>>, [Access Date:13.09.2014]

<sup>519</sup> See Appendix

<sup>520</sup> Maleki, Abbas., pp.52-53

<sup>521</sup> Halit Mustafa Tagma, Ezgi Uzun, "Bureaucrats, Ayatollahs, and Persian Politics: Explaining the Shift in Iranian Nuclear Policy." *Korean journal of defense analysis* Vol.24, No.2, 2012, p.250

<sup>522</sup> Ibid. pp.58

<sup>523</sup> Official website of AEIOI, "A brief introduction to the Atomic Energy Organization of Iran", <<http://www.aeoi.org.ir/Portal/Home/Default.aspx?CategoryID=aad5c96d-ca19-4bee-9771-bc97b5feb2a3>>, [Access Date:15/11/2014]

<sup>524</sup> Mohammad Ghannadi-Maragheh, "Atomic Energy Organization of Iran", World Nuclear Association Annual Symposium, September 2002, London, pp.1



began to operate in order to fulfill these requirements. The construction of two nuclear power plants was not completed because of the Islamic Revolution and the Iraq-Iran war. The new regime was distant to Iran's nuclear activities in the early years of the Islamic Revolution, thus, Iran's nuclear program was taken under the authority of the Ministry of Energy.<sup>525</sup> In 1984, Iran resumed its suspended nuclear programme with the same long-term objective (20,000 MW) it had at its establishment.<sup>526</sup> The AEOI regained its authority on nuclear activities and was promoted to a more prestigious position in the bureaucratic structure. Paul Kerr claimed that:

The AEOI is a powerful bureaucratic actor that has not only undertaken controversial nuclear activities, but also influenced Tehran's diplomatic efforts to persuade the international community that its nuclear program is exclusively peaceful.<sup>527</sup>

The AEOI continued to maintain its activities after the emergence of the nuclear dispute. The Supreme National Security Council (SNSC- شورای عالی امنیت ملی) formed a committee to conduct the negotiations with the Agency. The president of the AEOI was a member of this committee. Hassan Rouhani, former head of the negotiating group, stated that the committee played a role in the denial of the suspension of uranium enrichment activities. *“The nuclear fuel cycle was our red line and under no circumstances would we waive it.”*<sup>528</sup>

The AEOI continues to play an important role in negotiations with the agency. Additionally, it can be said that AEOI experts are effective in shaping public opinion about Iran's nuclear program. Experts, working in the nuclear energy field, often give interviews in the Iranian press. According to Hadi Semati, knowledge about the nuclear program has increased in recent years and more discussion on nuclear issues has enhanced public support.<sup>529</sup> Kayhan Barzegar, who is an Iranian academician at the Islamic Azad University, argued that scientists, who have received training in the

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<sup>525</sup> Arms Control Association website, Paul Kerr, “The Atomic Energy Organization of Iran: What Role?”, <[http://www.armscontrol.org/ACT/2014\\_10/Feature/The-Atomic-Energy-Organization-of-Iran-What-Role](http://www.armscontrol.org/ACT/2014_10/Feature/The-Atomic-Energy-Organization-of-Iran-What-Role)>, [Access Date: 16/11/2014]

<sup>526</sup> Official website of AEOI, “A brief introduction to the Atomic Energy Organization of Iran”

<sup>527</sup> Arms Control Association website, Paul Kerr, “The Atomic Energy Organization of Iran: What Role?”, <[http://www.armscontrol.org/ACT/2014\\_10/Feature/The-Atomic-Energy-Organization-of-Iran-What-Role](http://www.armscontrol.org/ACT/2014_10/Feature/The-Atomic-Energy-Organization-of-Iran-What-Role)>, [Access Date: 16/11/2014]

<sup>528</sup> Paul Kerr cited from Mehdi Mohammadi's interview with Hasan Rouhani. See: Mehdi Mohammadi, “Nuclear Case From Beginning to End in Interview with Dr. Hasan Rouhani(Part 1): We are testing Europe”, *Keyhan*, July 26, 2005

<sup>529</sup> Kibaroglu, op. cit. pp.94-95

nuclear energy field, consider that there should be nuclear opportunities in Iran. Bureaucrats, scientists and engineers who are directly associated with nuclear projects are quite worried about the suspension of the uranium enrichment process and interruption of the nuclear projects because such a case would mean the loss of their jobs and prestige.<sup>530</sup> Students of technical universities also share similar concerns.<sup>531</sup>

In Iran, a significant increase occurred in the numbers of scientific studies in the fields of Physics, Engineering and especially Chemistry (See Figure.11).<sup>532</sup> According to data related to scientific researches Iran achieved a significant rise in scientific studies since 1990 in the following areas: Inorganic and nuclear chemistry, particle physics, nuclear technology/engineering, and nuclear physics. Scientific output in these fields “...has increased by only %34 at the world level between 1990 and 2009, Iran’s scientific output has increased 84 times.”<sup>533</sup>

The Iranian state made investments and supported these scientific fields. As a natural consequence of this situation scientists are afraid to lose the opportunities they have.

**Figure 7:** Growth of Nuclear related scientific papers produced by Iran



**Source:** Eric Archhambault, “30 Years in Science: Secular Movements in Knowledge Creation”, Science-Metrix, 2010, p.6

<sup>530</sup> Ibid. p.94

<sup>531</sup> After the Paris agreement, temporary suspension of uranium enrichment activities led to protests by more than five thousand students from the Sharif Technical School. Halit Mustafa Tagma, Ezgi Uzun, op. cit. p.250 <<http://www.dunyabulteni.net/index.php?aType=haber&ArticleID=9048>>, [Access Date:22/11/2014]

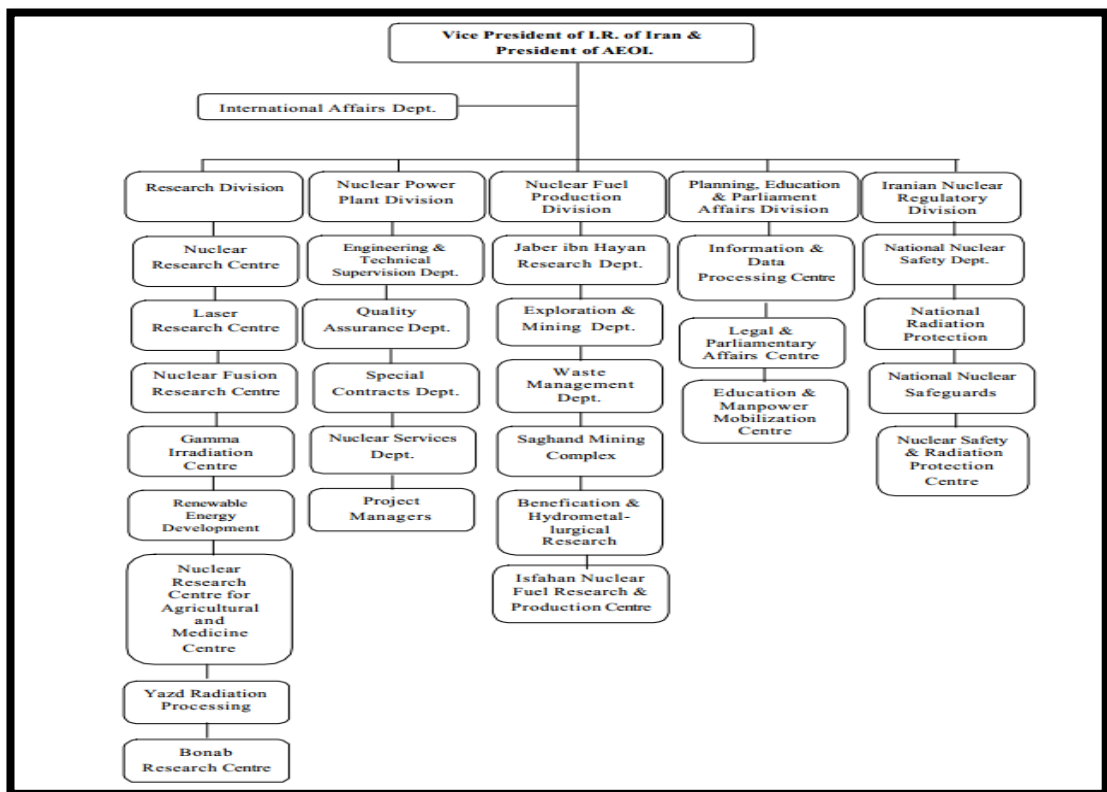
<sup>532</sup> See: Eric Archhambault, “30 Years in Science: Secular Movements in Knowledge Creation”, Science-Metrix, 2010, p.6

<sup>533</sup> Ibid. p.5

Also, assassinations of Iranian nuclear scientists redounded symbolic meanings to the AEOI's nuclear activities. The martyrdom of these scientists is presented as a symbol of resistance (See: footnote 570).<sup>534</sup>

Heads of the AEOI have voiced their desires for peaceful nuclear energy. They claim that there is no objective of uranium enrichment more than 20 percent. However, former head of the AEOI Fereydoon Abbasi stated that if Iranian scientists need nuclear reactors for building nuclear submarines and nuclear-powered ships, highly enriched uranium (from 45 percent to 56 percent) will be necessary.<sup>535</sup> Such statements, which are implying the use of nuclear technology in the military field, are factors that should not be ignored. These statements are enhancing doubts about Iran's nuclear program, but any evidence that shows nuclear technology being used in the military field has not been found yet or could not be reached in this study.

**Figure 8:** Structure of Atomic Energy Agency of Iran



<sup>534</sup> About the assassinated Iranian scientists, See: <<http://nuclearenergy.ir/in-memory/>>, [Access Date:11/11/2014]

<sup>535</sup> Head of the Atomic Energy Organization: We do not have a program for enrichment over 20 percent. (رئیس سازمان انرژی اتمی: برنامه‌ای برای غنی‌سازی بالای 20 درصد نداریم), April 17 2013 (۱۳۹۲/۱/۲۸) <<http://dolat.ir/NSite/FullStory/News/?Serv=0&Id=226233>>, [Access Date:06/09/2014]

**Source:** Mohammad Ghannadi-Maragheh, “Atomic Energy Organization of Iran”, World Nuclear Association Annual Symposium, September 2002, London, p.2

### **3.2.2: Islamic Revolution Guards Corps (IRGC)**

The Islamic Revolution Guards Corps was established because of the necessity to form a new army since after the Islamic Revolution, numerous military officers were dismissed. Leaders of the Revolution considered it essential to establish a new and powerful armed force, which was compatible with the values of the new regime, in order to provide stability and order. Imam Khomeini gave instructions for the establishment of the Army of the Guardians of the Islamic Revolution,<sup>536</sup> and on April 22, 1979, IRGC was officially founded.<sup>537</sup> The objectives of this army were protection of the Islamic revolution and spreading the ideology of the Islamic revolution to the whole world. Additionally, ideological, political and military trainings of members of the army are supplied by the IRGC. The official name of this army does not include the word “Iran” because according to those who carried out the revolution, the Army of the Guardians of the Islamic Revolution is the army of the entire Ummah and is not limited to Iran.<sup>538</sup>

The IRGC became organized throughout the country as soon as possible. After the beginning of the Iraq-Iran war, it took part in the war with all its power. During the war, new needs emerged and the IRGC continued to grow in order to fulfill these needs. On September 17, 1985, the Islamic regime decided to establish the IRGC’s land, sea and air forces. Afterward, the IRGC was transformed into a ministry, and Mohsen Rafiqdust became the first minister of the Revolutionary Guards. This ministry was tasked with organizing to fulfill the needs of the war. This ministry was abolished in 1989. The IRGC, in time, turned into a more autonomous structure under the command of the Supreme Leader (رهبر) (See Figure: 13).<sup>539</sup>

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<sup>536</sup> Although the United States declared the IRGC and Quds Force as supporters of terrorist organizations, in this study the military institutions in question will not be considered in this context. The same situation is also valid for the declaration of Iran that accused the CIA and the US Army as being terrorists. Shirzad Bozorgmehr, “Iran’s parliament votes to label CIA, U.S. Army ‘terrorist’ groups, *CNN International*, 29 September 2007, <<http://edition.cnn.com/2007/WORLD/meast/09/29/iran.parliament/index.html>>, [Access Date:25/10/2014]

<sup>537</sup> Abdullah Yegin, op. cit. p.64-65

<sup>538</sup> Ibid. p. 65

<sup>539</sup> Ibid. pp. 65-66

Many prominent political figures (such as Mahmoud Ahmadinejad, Saeed Jalili, and Ali Larijani) served in various positions in the army.<sup>540</sup> The IRGC is an important power in the military field.<sup>541</sup> At the same time, it has played a dominant role in the reconstruction of the country after the Iraq-Iran war. Due to this role, it has achieved a significant position in the Iranian economy. Many large companies belong to the revolutionary guards in Iran, and also commercial activities of the IRGC are exempt from tax.<sup>542</sup> The Revolutionary guards did not interfere in politics until the mid-90s, when in the presidential elections of 1997 Mohsen Rezai, Commander of the IRGC, declared his support to Ali Akbar Nateq Nuri, who was the competitor of reformist candidate Mohammad Khatami. The presidential election resulted in the victory of Mohammad Khatami, and after the inauguration of the new President, almost every key position of Iran's military and security structure changed hands.<sup>543</sup> The IRGC began to be more interested in politics from this date. Bayram Sinkaya shows the following as an example of this case: *“Interventionism of the IRGC was very apparent when the 24 senior IRGC commanders wrote a warning letter to President Khatami in July 1999 in the midst of student riots.”*<sup>544</sup>

After the 2005 elections, the IRGC's influence on politics increased, and the Revolutionary Guards gained significant positions in the country's management. The IRGC had close ties to Mahmoud Ahmadinejad and supported his election campaign, because both identified protection of the revolution as a priority. This common ground created the opportunity to work in harmony. Companies which are connected to the IRGC have obtained wider economic opportunity.<sup>545</sup> For instance, ballistic missile tests have been done more often as a result of increasing economic opportunities and cooperation with the country's leadership (See Table:4), but this cooperation is not applicable in all situations. As evidence of this, the IRGC took a stand in favor of the

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<sup>540</sup> For a list of some of these famous figures, See: Frederic Wehrey, Jerrold D. Green, et. al. “The Rise of the Pasdaran: Assessing the Domestic Roles of Iran's Islamic Revolutionary Guard Corps”, RAND Corporation, 2009, Appendix B

<sup>541</sup> Most Ballistic Missile tests are carried out by the IRGC.

<sup>542</sup> Ibid. p.66

<sup>543</sup> Michael Eisenstadt, “The Military Dimension” in Patrick Clawson et. al. “Iran Under Khatami: A Political, economic and Military Assessment”, The Washington Institute for Near East Policy, 1998, Washington, pp.72-73

<sup>544</sup> Bayram Sinkaya, “The Revolutionary Guards and The Iranian Politics: Causes and Outcomes of the Shifting Relations Between the Revolutionary Guards and the Political Leadership in Post-Revolutionary Iran”, Ph.D. Thesis, Middle East Technical University, 2011, pp.277

<sup>545</sup> Ibid.

Supreme Leader when problems emerged between Ali Khamenei and Mahmoud Ahmadinejad<sup>546</sup> because the IRGC focused on the protection of the values of the Islamic Revolution and the most important symbol of the revolution, the Supreme Leader. In short, the main motivation of the IRGC is protection of the revolution.

The IRGC has a significant role in the economy of Iran and it is the third largest corporations in Iran. There are investments and companies of IRGC in almost all areas of economy. In addition, the IRGC have many companies operating under the nuclear and ballistic missile programs of Iran. It is also a significant player in the construction (Khatam al Anbiya-the Seal of the Prophet)<sup>547</sup> industry of Iran.<sup>548</sup> In short, the IRGC is located in the center of the ballistic missile and nuclear programs of Iran. Thus the IRGC is one of the main institutions of Iran that being targeted in sanction resolutions. In particular, UNSC Resolution 1929 (passed on 9 June, 2010) has decided to include in the sanctioning a number of the IRGC-owned companies.<sup>549</sup> Amir Taheri claims that:

Theoretically, the nuclear program—supposedly designed for peaceful purposes including the production of electricity—is controlled by the Iranian Nuclear Energy Organization (*Sazman Enerji Atomi Iran*), the head of which is appointed by the president of the Islamic Republic. In reality, however, from strategic conception to production and management, the IRGC supervise the program under the authority of the Supreme Leader.<sup>550</sup>

IRGC officials state that the idea of the continuation of the nuclear program. For instance, IRGC Deputy Commander Brigadier General Salami clearly emphasizes that nuclear program of Iran cannot be prevented. Brigadier General Gholam Reza Mehrabi stated that Tehran should not compromise over the nuclear issue, and should never step back.<sup>551</sup> In short, the IRGC is situated in a central location in nuclear program of Iran and it is willing to continue the program. However, it should be noted that there is a

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<sup>546</sup> Abdullah Yegin, op. cit. pp.84

<sup>547</sup> The IRGC's construction headquarters and it some of the most important official economic activity centers. "The Revolutionary Guards", Alireza Nader, *The Iran Primer*, <<http://iranprimer.usip.org/resource/revolutionary-guards>>, [Access Date:20/01/2015]

<sup>548</sup> "Guardians of the Revolution: Myths and Reality", Amir Taheri, *The Majalla*, 4 Jan. 2013, <<http://www.majalla.com/eng/2013/01/article55237014>>, [Access Date:20/01/2015]

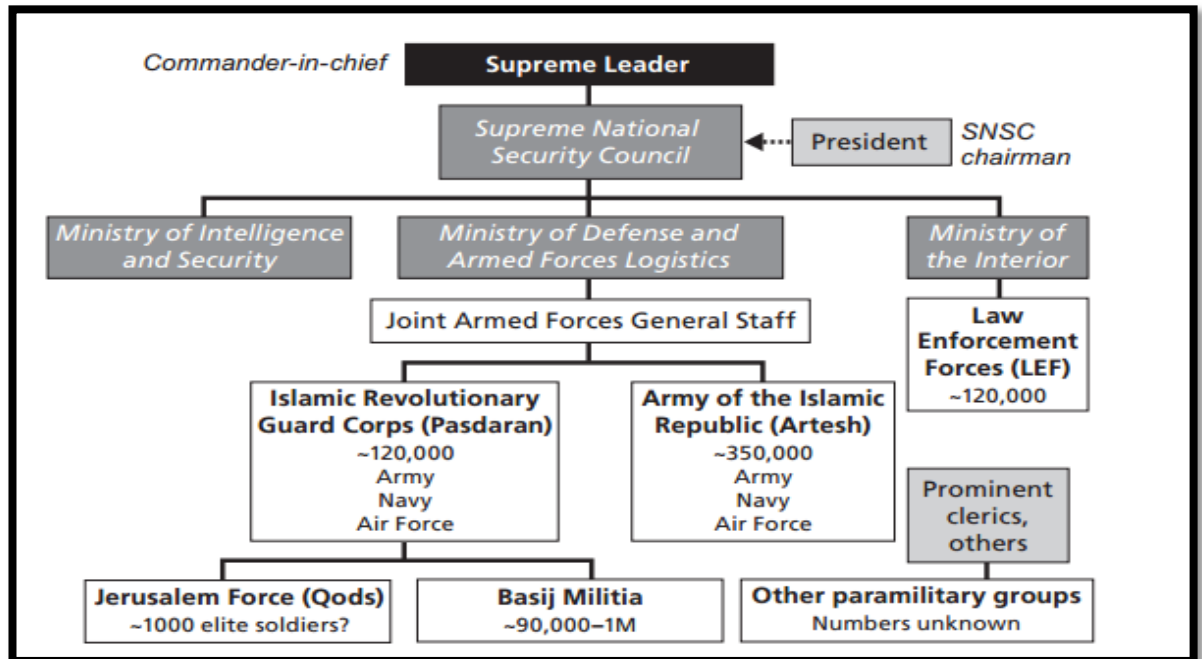
<sup>549</sup> Ersoy Önder, "Iran'ın Nükleer Programının Analizi ve Türkiye: ilişkiler, yaklaşımlar ve gelişmeler", IQ Kültür Sanat Yayıncılık, İstanbul, 2013, pp.339-340

<sup>550</sup> "Guardians of the Revolution: Myths and Reality", Amir Taheri, *The Majalla*, Jan. 4, 2013, <<http://www.majalla.com/eng/2013/01/article55237014>>, [Access Date:20/01/2015]

<sup>551</sup> "IRGC Messaging: Insight into a Revolutionary Regime", Will Fulton, May 20, 2013, <<http://www.irantracker.org/analysis/fulton-irgc-messaging-insight-revolutionary-regime-may-20-2013>>, [Access Date: 20/01/2015]

harmony in nuclear issue between the IRGC and the Supreme Leader who is commander-in-chief of the entire armed forces.

**Figure 9:** Iran's National Security Establishment



**Source:** Frederic Wehrey, Jerrold D. Green, et. al. "The Rise of the Pasdaran: Assessing the Domestic Roles of Iran's Islamic Revolutionary Guard Corps", RAND Corporation, 2009, p.9

### 3.2.3: The President

The President is head of the executive and responsible for the administration of the state.<sup>552</sup> "The President is elected for a four-year term by the direct vote of the people. His re-election for a successive term is permissible only once."<sup>553</sup> According to Article 122, the President must act in accordance with the laws and constitution, and is also responsible to the people, the Supreme Leader and the Islamic Consultative Assembly (Parliament).<sup>554</sup> Appointment of ministers is subject to the approval of the Assembly, which is effective in determining the composition of the Council of Ministers. Therefore presidents may not create a council of ministers any time they want. For instance, the

<sup>552</sup> Premiership was abolished by constitutional amendment in 1989.

<sup>553</sup> Constitution of Iran. Article 114. See: <[http://www.iranchamber.com/government/laws/constitution\\_ch09.php](http://www.iranchamber.com/government/laws/constitution_ch09.php)>, [Access Date:28/11/2014]

<sup>554</sup> Ibid.





Political views of the Presidents are effective in the determination of foreign policy. Presidents are located in a central location in the formation process of foreign policy decisions (See: Figure: 14). The data obtained from different sources converge at the presidency, and the President evaluates the information submitted to him. Then, this information is presented to the High Council on National Security (شورای عالی امنیت ملی). Abbas Maleki stated that foreign policy decision-making process in Iran as follows:

After the Council decides on a course of action, then the Iranian President, who is also the head of the HCNS, would send the report to the Iranian Supreme Leader. If the Leader confirms the action, then it would be operationalized and sent to military sections, and to the Foreign Ministry.<sup>558</sup>

As is seen, the President takes part at different stages of the foreign policy decision mechanism. Although foreign policy decisions need to be approved by the Supreme Leader, the President is responsible for the implementation of this decision. Therefore, political views of presidents show their effects on the application of policy. For instance, Mohammad Khatami's efforts to establish good relations with the West have led to the prominence of the diplomatic approach after the emergence of the nuclear dispute. Iran signed the Additional Protocol and halted its uranium enrichment activities as a sign of good faith. During the presidency of Mahmoud Ahmadinejad, the nuclear dispute became more severe, and the UNSC took several sanction decisions on Iran. After the inauguration of new President, Hassan Rouhani, a reduction occurred in the severity of the dispute and diplomatic solution efforts gained importance.

The Presidency is a political position. Therefore, presidents cannot be indifferent to nuclear issues which are shown considerable interest from a large part of the population. Especially during the presidency of Mahmoud Ahmadinejad nuclear issues frequently took place in his political discourse. In this period, April 9<sup>th</sup> was declared Iran's National Day of Nuclear Energy.<sup>559</sup> Iran's obtaining of uranium enrichment technology was viewed as a significant success of the regime. According to Hossein Seifzadeh:

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<sup>558</sup> Abbas Maleki, "Decision Making in Iran's Foreign Policy: A Heuristic Approach." *Journal of Social Affairs* Vol.19, No.73, 2002, pp.39-59.

<sup>559</sup> Iran Marks National Nuclear Day, *Press TV*, <<http://edition.presstv.ir/detail/fa/173889.html>>, [Access Date:24/11/2014]

As a supplementary measure for enhancing its legitimacy, the Islamic Republic tries to inflate its achievements in peaceful nuclear technology. This “glorious achievement of the Islamic Republic” demonstrates the Islamic Republic’s capacity in developing its human resources as compared to Dr Mossadeq’s success in nationalizing petroleum natural resources in 1951, despite its collapse by a US\_British orchestrated coup in 1953.<sup>560</sup>

The Iranian state shows a resistance to prevention of nuclear activities. According to Ali M. Ansari, “*Resisting the foreign oppressor is so central to Iranian nationalist mythology...*”<sup>561</sup> Therefore, conservative politicians often use concepts of resistance.<sup>562</sup> The nuclear dispute constitutes a proper ground for this political discourse. Sanctions increase the stability of this segment of society. Iran is passing the downturn in economic terms. The Supreme Leader has proposed switching to a “*resistance economy*” in order to get rid of the negative impact of sanctions. Accordingly, the Iranian economy would tend to use internal resources more efficiently and win the feature of an advanced knowledge-based economy.<sup>563</sup>

Iranian political elites anticipate the removal of sanctions being implemented on Iran. “*Iranian President Hassan Rouhani says that the West has no other choice but to lift the "cruel" sanctions against the Islamic Republic.*”<sup>564</sup> The impact of sanctions on Iran has become more malignant in recent years. The expansion of sanctions and implementation by more countries has played a considerable role in the emergence of this situation.<sup>565</sup> Although sanction decisions were taken because of Iran’s nuclear program, criticisms focused on the government's economy policies. In short, the negative impact of sanctions has not put the nuclear program in a questionable position yet.<sup>566</sup> Barbara Slavin claims that:

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<sup>560</sup> Hossein Seifzadeh, op. cit. p.137

<sup>561</sup> Ali M. Ansari, “Iran under Ahmadinejad: the politics of confrontation”, The International Institute for Strategic Studies, Routledge, New York, 2009, p.45

<sup>562</sup> In a similar way, the newly elected President Hassan Rouhani used the same discourse. “President Hassan Rouhani described the martyred nuclear scientists as the symbols of resistance in the path to the country’s progress and pride.” Official website of Iranian Presidency, <<http://president.ir/en/82672>>, [Access Date:10/11/2014]

<sup>563</sup> To see the basic elements of Khamenei’s proposal; Bijan Khajehpour, “Decoding Iran’s ‘resistance economy’”, *Al Monitor*, February 24,2014, <<http://www.al-monitor.com/pulse/originals/2014/02/decoding-resistance-economy-iran.html#>>, [Access Date: 27/11/2014]

<sup>564</sup> “West has no choice but to remove sanctions: Iran”, *Press TV*, 15 December 2014, <http://www.presstv.ir/detail/2014/12/15/390347/west-has-no-choice-but-to-lift-bans/>, [Access Date:17/12/2014]

<sup>565</sup> Özüm S. Uzun, İran’a ekonomik yaptırımlar: Kırılganlaşan Nükleer Program mı Hükümet mi? (Economic Sanctions on Iran: Is It Iran’s Nuclear Program or the Government Getting Fragile?), *Ortadoğu Analiz (Middle East Analysis)*, vol. 5, no.54, pp.66–67

<sup>566</sup> Ibid. p.69

During the campaign, Rouhani drew a link between Iran's poor economic performance and Iran's failure to reach agreement with the international community on its nuclear program, noting that while it was nice to have more centrifuges spinning, wheels also needed to spin in Iranian factories.<sup>567</sup>

### 3.2.4: The Supreme Council of National Security and the Islamic Consultative Assembly

The Supreme Council of National Security (also known as the High Council on National Security) is an institution whose duties and authorities are defined in the constitution Article 176.<sup>568</sup> This council shapes foreign policy decisions and seeks the approval of the Supreme Leader. Civil and military bureaucracy plays a balanced role in the formation of foreign policy decisions, yet in periods of increased military political weight, this balance can be disrupted.

The Islamic Consultative Assembly of Iran, also called the Islamic Parliament of Iran, was regenerated by order of Imam Khomeini on May 28, 1980. Before the Islamic Revolution name of the parliament was "National Consultative Assembly". There are 290 deputies in the Islamic Parliament of Iran and these deputies are elected for four

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<sup>567</sup> "Rouhani Decides Honesty Best Policy on Iran's Economic Mess", Barbara Slavin, *Al Monitor*, 15 July 2013, <<http://www.al-monitor.com/pulse/tr/originals/2013/07/rouhani-iran-economic-policy-honest.html#>>, [Access Date:17/12/2014]

<sup>568</sup> "A Supreme Council of National Security presided over by the President will be established to secure national interests, preservation of the Islamic Revolution, national sovereignty, and territorial integrity of the Islamic Republic. It is to fulfill the following duties:

1. Determine the defense and national security policies within the framework of the general policies determined by the Leader.
2. Coordinate political, intelligence, social, cultural, and economic activities in accordance with the general defense and security plans.
3. Utilize the material and non-material resources of the country to confront internal and external threats."

This Council shall consist of:the heads of three branches of powers of the State, the chief of the Supreme Command of the Armed Forces, the official responsible for planning and budgeting affairs, two representatives appointed by the Leader, the ministers of foreign affairs, the interior, and intelligence, one of the ministers, in accordance with the relevance of a case, and the highest ranking official of the Armed Forces and the Islamic Revolution Guards Corps.

The Supreme Council of National Security shall, commensurate with its duties, form sub-councils such as a Council for Defense and a State Security Council. Each sub-council will be presided over by the President or a member of the Supreme Council of National Security appointed by the President.

The jurisdiction and functions of the sub-councils will be determined by law and their organizational structure will be approved by the Supreme Council of National Security.

The decisions of the Supreme Council of National Security shall be effective after the Leader's approval." <[http://en.parliran.ir/index.aspx?fkeyid=&siteid=84&pageid=3054#chapter\\_13](http://en.parliran.ir/index.aspx?fkeyid=&siteid=84&pageid=3054#chapter_13)>, [Access Date: 28/11/2014]

years. As mentioned above, minorities in Iran have the right to representation in the Islamic Parliament.<sup>569</sup>

The Islamic Parliament of Iran is the only institution authorized to issue laws, so it has an important role in the political structure of Iran. The parliament also has the authority to approve council of ministers. Ministers are required to take a vote of confidence from parliament to be appointed.<sup>570</sup> If there is a harmony between the Parliament and the President, who is responsible for forming the government, the legislative mechanism can operate seamlessly. However, such a harmony not always ensured between these two institutions. For instance, as mentioned above, President Hassan Rouhani's fourth nominee for minister of science, research and technology could not win the vote of confidence.<sup>571</sup> Similar situations occurred before and the President's policies were blocked by the Islamic Parliament of Iran. Therefore ideological stance of parliament deputies is important for the continuation of policies. Sometimes inconsistency arose between the president and parliament over Iran's nuclear program. Mohammad Khatami provided the signing of the Additional Protocol with hoping benefit from negotiations with EU/3 and voluntarily suspended Iran's enrichment activities for a while. But the United States' invasion of Iraq and its rhetoric against Iran left reformists in a difficult situation. In 2004, hardliners who gained majority of the Islamic Parliament of Iran criticized reformists for being very tame and to show weakness in defending the interests of Iran.<sup>572</sup> After the inauguration of the new president Mahmoud Ahmadinejad in 2005, a harmony occurred between the Parliament and the Presidency. Nuclear activities of Iran gained momentum and in 2010 the first nuclear reactor of Iran began to operate in Bushehr.

In short, the Islamic Parliament of Iran may accelerate or decelerate implementation of policies. Therefore, importance of the Parliament should not be underestimated. But

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<sup>569</sup> Minorities have a quota in the Islamic Parliament respectively; Zoroastrians one, Jews one, Ashura and Chaldeans one, South Armenians one, and Northern Armenians one. Abdullah Yegin, op. cit., p.56

<sup>570</sup> Ibid.

<sup>571</sup> "Iranian MPs rejects Rouhani's 4th nominee for minister of science", *Press TV*, 18 November 2014, <<http://www.presstv.ir/detail/2014/11/18/386501/iran-mps-reject-4th-ministerial-nominee/>>, [Access Date:15/12/2014]

<sup>572</sup> "The Politics of Iran's Nuclear Program", Shahram Chubin, *The Iran Primer*, <<http://iranprimer.usip.org/resource/politics-irans-nuclear-program>>, [Accessed Date:20/01/2015]

there is a point to keep in mind that all laws arising from the parliament must be submitted for approval of the Guardian Council of the Constitution.<sup>573</sup>

### 3.2.5: The Supreme Leader

After the Islamic Revolution, the Supreme Leader (Ayatollah Imam Khomeini) was placed at the apex of the Islamic Republic. Imam Khomeini, founder of IRAN, seized all political power with his charismatic leadership. Under normal conditions, leaders of the Revolution wanted to establish checks and balance system between two focal points of political power, but balance seems to be distorted in favor of the Supreme Leader, who is the most influential political figure of Iran. After the Imam Khomeini's death in 1989, Sayyid Ali Hamanei was elected by the Assembly of Experts as the new leader of the revolution.<sup>574</sup> According to Article 57, the Supreme Leader has a position over the legislative, executive and judicial powers, and these powers work under his supervision. Constitution of Iran provides broad authority to the leader (See: Article 110).<sup>575</sup> Sayyid Ali Hamanei uses these authorities through the representatives (See Figure: 15).

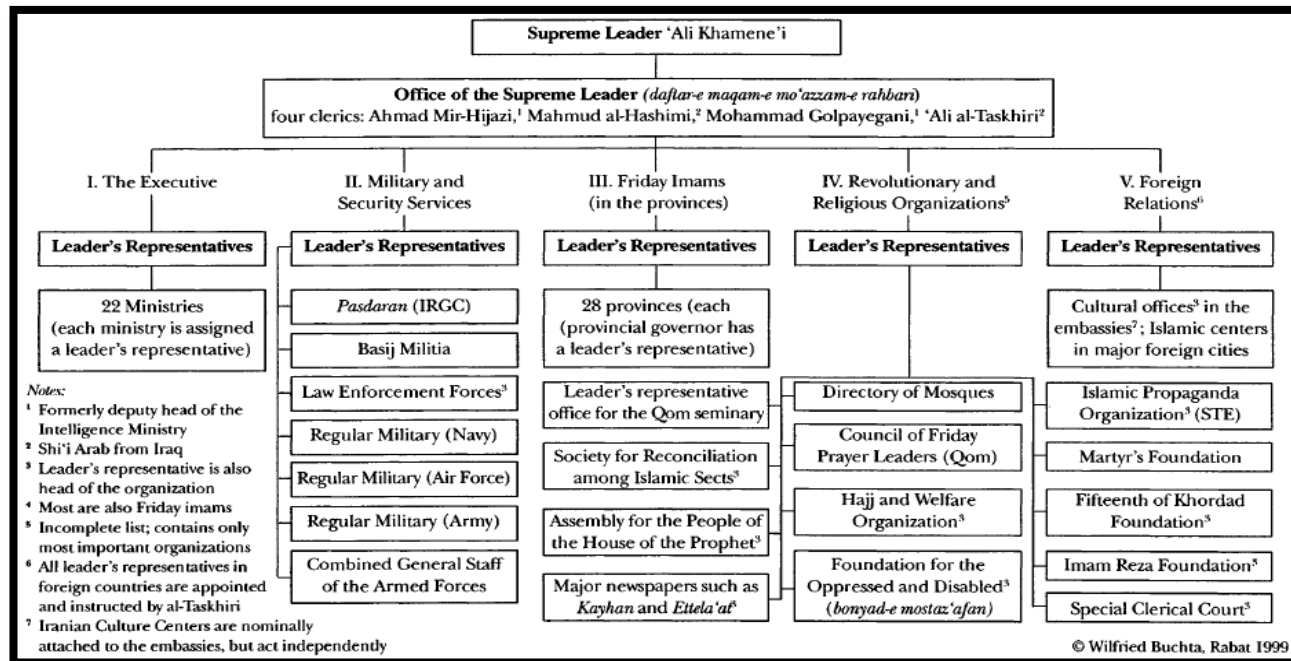
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<sup>573</sup> Abdullah Yegin, op. cit., pp.56-57

<sup>574</sup> A transition process began by the selection of the new Supreme Leader Sayyid Ali Khamanei. The new Supreme Leader was not as charismatic as his predecessor Ayatollah Ruhullah Khomeini, and his religious authority was not sufficient to be Marja-i Taqlid. Therefore, Ali Khamanei's empowerment took place at the end of a process. For an analysis of this process; See: Mohsin M. Milani, "The Transformation of the Velayat-e Faqih Institution: From Khomeini to Khamanei", Translated by Fatih Topaloğlu, *Dokuz Eylül University Journal of Faculty of Theology*, no.XIX, Izmir, 2004

<sup>575</sup> Constitution of Islamic Republic of Iran Website of Islamic Parliament of Iran <[http://en.parliran.ir/index.aspx?fkeyid=&siteid=84&pageid=3054#chapter\\_13](http://en.parliran.ir/index.aspx?fkeyid=&siteid=84&pageid=3054#chapter_13)>, [Access Date: 28/11/2014]

**Figure 11:** Authorities of the Leader of the Revolution



**Source:** Wilfried Buchta, "Who Rules Iran: The Structure of Power in the Islamic Republic", The Washington Institute for Near East Policy and Konrad Adenauer Stiftung, Washington, 2000, p.49

In October 2003, Ali Hamanei issued a fatwa forbidding the production and use of WMD. According to him, Islam proscribes nuclear weapons and other WMD. Use of these types of weapons is *haram* (prohibited under the Islamic Law) and illegal.<sup>576</sup> Iranian politicians frequently refer to this fatwa which they present as evidence of Iran's peaceful nuclear activities. We should not ignore that the fatwa is not unchangeable.<sup>577</sup> The Supreme Leader has the authority to determine the general policies of the Islamic Republic. Although he is not the only determinant of policies, it can be said that he is highly effective in drawing the general framework. The ongoing nuclear talks are not without his knowledge and consent. Despite fluctuations in the nuclear negotiations due to differences in political styles of the Presidents, breakages do not occur in Iran's

<sup>576</sup> Michael Eisenstadt, Mehdi Khalaji, "Nuclear Fatwa: Religion and Politics in Iran's Proliferation Strategy", the Washington Institute for Near East Policy, Washington, 2011, pp.1, <<http://www.washingtoninstitute.org/uploads/Documents/pubs/PolicyFocus115.pdf>>, [Access Date: 28/11/2014]

<sup>577</sup> For a critical assessment of this fatwa, See: Ibid., In order to see, the Supreme Leader's view on nuclear issues, See: The Center for Preserving and Publishing the Works of Grand Ayatollah Sayyid Ali Khamanei, The Supreme Leader's View of Nuclear Energy, <[http://english.khamenei.ir/index.php?option=com\\_content&task=view&id=1442&Itemid=13#Nuclear\\_weapons,\\_not\\_necessary\\_for\\_Iran](http://english.khamenei.ir/index.php?option=com_content&task=view&id=1442&Itemid=13#Nuclear_weapons,_not_necessary_for_Iran)>, [Access Date:28/11/2014]

nuclear policy. Iran is determined on having nuclear fuel cycle technology. This is not open for discussion.

Although the negotiation process was supported by the Supreme Leader, he does not hesitate to criticize the process and other policies of the government.<sup>578</sup> The Supreme Leader absolutely does not want to stop the development of Iran's nuclear program.<sup>579</sup> Therefore, Ali Khamenei frequently refers to the decision to temporarily suspend nuclear activities as a result of negotiations when Hassan Rouhani was the chief negotiator in 2003. This decision has been used as a source of criticism by the Supreme Leader and his supporters.<sup>580</sup> Additionally, Iranian conservative politicians and the Supreme Leader are cautious about establishing close relations with the US.<sup>581</sup> They do not want to surpass a certain level.<sup>582</sup> According to Secretary of Iran's Supreme National Security Council Ali Shamkhani, diplomatic ties between Iran and the United States are limited only to the nuclear talks.<sup>583</sup>

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<sup>578</sup> For instance; after signing the JPA, President Hassan Rouhani used the following expressions "Undoubtedly, this breakthrough is the result of God's blessings, the Leader's guidelines and unwavering support of the Iranian nation", see: "Iran president congrats Leader on nuclear deal.", *Press TV*, 24 November 2013, <<http://www.presstv.ir/detail/2013/11/24/336392/rouhani-congrats-leader-on-nuclear-deal/>>, [Access Date:16/12/2014] On the other hand, there are also some concerns of the Supreme Leader about the JPA. See: "Pros and cons for the JPA for Iran's Supreme Leader", Matthew McInnis, American Enterprise Institute, 16 January 2014, <<http://www.aei.org/publication/pros-and-cons-of-the-jpa-for-irans-supreme-leader/>>, [Access Date: 16/12/2014]

<sup>579</sup> "Khamenei: Iran's nuclear progress will not stop", *Al Arabiya News*, 9 April 2014, <<http://english.alarabiya.net/en/News/middle-east/2014/04/09/Khamenei-Iran-s-nuclear-progress-can-t-be-stopped.html>>, [Access Date:16/12/2014]

<sup>580</sup> Hossein Bastani, op. cit. p.15.

<sup>581</sup> There are Khamenei's instructions and recommendations to negotiators and his redlines in the negotiation process. Suzanne Maloney, "Reading Between the Lines Disclaimer: The Anatomy of Iran's Eleventh-Hour Nuclear Negotiating Strategy", Brookings Institution, Blogs, 16 October 2014, <<http://www.brookings.edu/blogs/markaz/posts/2014/10/08-iran-nuclear-deal-public-diplomacy-hype-strategy>>, [Access Date:18/12/2014]

<sup>582</sup> "مذاکره با آمریکا جز در موارد خاصی برای جمهوری اسلامی ضرر دارد" (Negotiations with America, except in certain cases, are harmful for the Islamic Republic), *Shargh Daily News*, 14 August 2014, [Access Date:22/12/2014]

<sup>583</sup> "Resumption of ties with US not on Iranian's agenda: Shamkhani", *Press TV*, 23 December 2014, <<http://www.presstv.ir/detail/2014/12/23/391483/ties-with-us-not-on-iran-agenda/>>, [Access Date: 23/12/2014]

### 3.3. NORMS<sup>584</sup> MODEL

#### 3.3.1: Nuclear Myth and Nuclear Taboo

According to Scott Sagan, the norms model offers an opportunity to understand another dimension of nuclear weapons. Using this model, the symbolic functions of nuclear weapons have come to the fore. The acquisition of nuclear weapons or trying to having weapons reflects the identity of a country.<sup>585</sup> Today most countries finds morally objectionable to obtain nuclear weapons but nuclear weapons has positive senses for some countries. According to Karsten Frey: *“In some states, however, these negative norms are overridden by a positive set of norms, causing nuclear weapons to become either symbols of invulnerability to perceived threats or the regalia of major power status.”*<sup>586</sup>

After the commencement of the nuclear age, nuclear weapons were seen as an indication of development and modernity. In the 1960s, it was considered that having nuclear weapons provided prestige. France's decision to develop nuclear weapons may be evaluated in this context. If we evaluate this event with a realist approach, it is difficult to find a satisfactory answer to explain the reason for this decision. Unlike other countries that face similar security threats, France has chosen the path of developing nuclear weapons.<sup>587</sup> French leader's attributed value to atomic bombs played a role in the emergence of this decision. They thought that it was necessary to reach a respectable position in the international system.<sup>588</sup>

In the same period, in the 1950s, the proliferation of nuclear weapons and increase in nuclear bomb tests gave rise to anti-nuclear protests. Efforts to ban nuclear weapons have continued increasingly and by means of this, the process of forming a nuclear non-proliferation regime has begun.<sup>589</sup> Nuclear weapons began to appear not to be an

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<sup>584</sup> “Norm, also called **Social Norm**, rule or standard of behavior is shared by members of a social group.” *Encyclopaedia Britannica*, <<http://global.britannica.com/EBchecked/topic/418203/norm>>, [Access Date: 02/12/2014]

<sup>585</sup> Scott D. Sagan, “Why do States Build Nuclear Weapons?-Three Models in Search of a Bomb”, *International Security*, Vol. 21, No.3, pp.73

<sup>586</sup> Karsten Frey, “Nuclear Weapons as Symbols: The Role of Norms in Nuclear Policy Making”, Institute Barcelona d'Estudis Internacionals (IBEI), Barcelona, 2006, p.3

<sup>587</sup> Scott D. Sagan, “Why do States Build Nuclear Weapons?-Three Models in Search of a Bomb”, *International Security*, Vol. 21, No.3, pp.77-78

<sup>588</sup> Ibid.

<sup>589</sup> Maria Rost Rublee, “Nonproliferation Norms: Why States Choose Nuclear Restraint”, Athens, GA, USA, University of Georgia Press, 2009, pp.34-37



element of prestige. Today, states are not inclined to acquiring nuclear weapons in order to obtain a prestigious position in the international system.<sup>590</sup> The best examples of this new situation are born-nuclear states; Belarus, Ukraine and Kazakhstan. These states were established with the collapse of the Soviet Union and found nuclear weapons in their inventory, yet to keep these weapons did not appear attractive for these countries.<sup>591</sup> It is possible to claim that there is a general trend among states in the direction of not having nuclear weapons. Some states do not follow this general trend and acquired nuclear weapons. The most notably example of this statement is India's having nuclear weapons. According to Indian leaders nuclear weapons may be evaluated as an indicator of the development of a country, and it has positive symbolic meaning. Karsten Frey depicts Indian first nuclear test as follows:

When news about India's nuclear test spread in 1998, its major cities, overwhelmed by the events occurring in the Pokhran desert, erupted into a state of collective exaltation as strangers embraced each other in the streets. Over the next few days, a wave of national pride swept through the country.<sup>592</sup>

Concepts of “*Nuclear Taboo*” and “*Nuclear Myth*” will be useful tools in order to understand these two contrasting examples. Nuclear Taboo refers to the widespread abhorrence of nuclear weapons and the warning of using them. Nina Tannenwald claims that there is a “nuclear taboo” worldwide. From 1945 until today nuclear weapons have not been used in any war. Nuclear weapons have been stigmatized as “*illegitimate*” and

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<sup>590</sup> “In 1992, Mongolia declared its nuclear-weapon free status, which is internationally recognized and prohibits, inter alia, the acquisition, possession, placement, testing and use of nuclear weapons on its territory.” United Nations Office for Disarmament Affairs, <<http://www.un.org/disarmament/WMD/Nuclear/pdf/NWFZ-postcard-2010.pdf>>, [Access Date: 15/11/2014]

<sup>591</sup>“ When the Soviet Union collapsed in December 1991, Kazakhstan inherited 1,410 nuclear warheads and the Semipalatinsk nuclear weapon test site and in Belarus there were 81 road-mobile SS-25s on its territory stationed at three missile bases, and an unknown number of tactical nuclear weapons.” “Ukraine inherited a sizeable nuclear weapons arsenal from the former Soviet Union in the form of 130 SS-19 and 46 SS-24 intercontinental ballistic missiles (ICBMs) with 1,240 warheads, and 44 Tupolev-95 and Tupolev-160 strategic bombers (with 1,081 nuclear cruise missiles). Kiev also possessed an unspecified number of tactical nuclear warheads.”, Nuclear Threat Initiatives country profiles, <<http://www.nti.org/country-profiles/>>, [Access Date:29/01/2015] Scott Sagan claims that Ukraine inherited more than 4,000 nuclear weapons on or under its soil. Scott D. Sagan, “Why do States Build Nuclear Weapons?-Three Models in Search of a Bomb”, *International Security*, Vol. 21, No.3, p.80

<sup>592</sup> Karsten Frey, “Of Nuclear Myths and Nuclear Taboos”, *Peace Review: A Journal of Social Justice*, Vol.18, no.3, 2006, p. 341

these weapons are considered different from other weapons.<sup>593</sup> Actually, in both concepts, nuclear weapons have an extraordinary position.<sup>594</sup> “*Nuclear myth*” indicates that nuclear weapons provide national security automatically while also providing prestige and power to the state in the international arena. However, a limited number of countries have nuclear weapons. This situation shows us that there is no balance between these two normative ideas. According to Karsten Frey,

In the nuclear realm, the norms composition oscillates between strict normative prohibition, termed nuclear taboo, and opposing effect, referred to as nuclear myth. This emerges when certain symbolic meanings are attached to nuclear weapons and perceived as reflective of a state’s identity, its self image, and its desired position in the international system.<sup>595</sup>

Frey argues that public opinion is an important factor in the deterioration of the balance between these two norms. Therefore, strategic elites try to manipulate public opinion in accordance with their views.<sup>596</sup> Karsten Frey claims that:

By dominating public opinion, the strategic elite is able to create a positive public mood toward nuclear weapons by building up threat perceptions, and, more significantly, by attaching symbolic values to nuclear devices related to national pride, collective dignity, or negative values associated with non-possession, such as collective defiance and insult. The strategic elite acts like a catalyst in the nuclear policymaking process by highlighting either the norms related to the nuclear taboo or those related to the nuclear myth<sup>597</sup>

According to Frey, the non-proliferation regime has two contradictory influences on the symbolic meaning of nuclear weapons. The regime makes a definite distinction between nuclear weapons and peaceful uses of nuclear energy. In this way, the regime contributes to the strengthening of the nuclear taboo. Although the non-proliferation regime does not aim to increase the symbolic value of nuclear weapons, creating two separate categories (NWS and NNWS) among states, contributes to generating a perception of nuclear weapons states holding a privileged position,<sup>598</sup> and it can be attractive for countries who want to be a part of the privileged group.

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<sup>593</sup> Nina Tannenwald, “The Nuclear Taboo: The United States and the Non-Use of Nuclear Weapons Since 1945”, Cambridge University Press, Cambridge, 2007, pp.2-9

<sup>594</sup> Karsten Frey, “Of Nuclear Myths and Nuclear Taboos”, *Peace Review: A Journal of Social Justice*, Vol.18, no.3, 2006, p. 342

<sup>595</sup> Karsten Frey, “Of Nuclear Myths and Nuclear Taboos”, *Peace Review: A Journal of Social Justice*, Vol.18, no.3,2006, pp. 341-342

<sup>596</sup> *Ibid.* p.344

<sup>597</sup> *Ibid.*

<sup>598</sup> *Ibid.* pp.345-346

### 3.3.2: Views of the Iranians on the Nuclear Issue

Iran, which has a deep rooted history, does not want to accept that its neighbors have more advanced technology and weapons than itself.<sup>599</sup> Three states (Pakistan, India and Israel) have nuclear weapons in the region and some Iranians feel that achieving a comparable power status necessitates acquiring nuclear weapons.<sup>600</sup> Iran's nuclear issue has become a matter of national pride because Iranians have a right access nuclear technology, but this is being denied to them. While other NPT signatory countries can reach nuclear technology without facing obstacles, efforts of the international community to stop Iran have made it a national issue.

Iranians have lost their trust in the international community especially after the Iraq War, because while Saddam Hussein was using chemical weapons against the Iranians, the international community was a bystander to it. This historical disappointment is an important element of Iran's nuclear policy.<sup>601</sup> According to Hadian there are four different views on the nuclear program.

The first viewpoint argues that nuclear energy is not a requirement for Iran, because of economic and environmental reasons. *“These are the so-called “greens” and they constitute only 2 or 3% of the population”*.<sup>602</sup>

The second group believes that acquiring nuclear technology and knowledge is essential for Iran because nuclear energy would be useful as an alternative energy source. According to this group *“...having nuclear energy would be good for Iran's pride and prestige. It is seen as a “technology of the future,” and no country should be deprived of having access to such knowledge and technology.”*<sup>603</sup>

The third group argues that Iran needs to develop nuclear weapon capability but does not need to produce nuclear weapons at the moment.<sup>604</sup> Those who hold this view recommend this as a security measure because they distrust the international community

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<sup>599</sup> The United Arab Emirates is constructing three nuclear power plants and within a short time U.A.E. will make serious progress in this area. <<http://www.iaea.org/PRIS/CountryStatistics/CountryDetails.aspx?current=AE>>, [Access Date: 08/12/2014]

<sup>600</sup> Ezgi Uzun, op. cit. p.59

<sup>601</sup> Ibid. p.59

<sup>602</sup> Mustafa Kibaroglu, op. cit. p.220

<sup>603</sup> Nasser Hadian, op. cit. p.61

<sup>604</sup> Kibaroglu, p.220

(Iraq-Iran War). They do not want to have nuclear weapons, but they want to have all the necessary elements and capabilities for producing weapons. In short, they want to take advantage of the “*deterrent*” power of nuclear weapons.

The fourth viewpoint is more radical than others because according to its supporters, Iran should have nuclear weapons, withdraw from the NPT in order to do so, and should pay the cost of international sanctions if necessary.<sup>605</sup> They argue that Iran should acquire nuclear weapons in order to provide a self-sufficient national security policy and take advantage of the deterrent feature of nuclear bombs. Advocates of a nuclear option look suspiciously to US intentions. As mentioned above, the “Axis of Evil” speech increased their concerns about the policies of the United States. They argue that, “*Recent history has shown that only the weak challengers will be attacked by the United States.*”<sup>606</sup>

As a result, we can say that, Iranian society has almost arrived at a consensus<sup>607</sup> on access to nuclear energy/technology. While there is wide public support on nuclear technology, it is impossible to say that the majority is advocating for nuclear weapons. Although this situation has created a source of legitimacy for the regime, the support of Iranians constitutes pressure on nuclear negotiations. Therefore, a deal which is perceived as a concession by the Iranians is unlikely. Former President Mohammad Khatami has expressed this situation as follows: “*...the nation will not forgive us if we drop nuclear energy from our economic development programme just for hostile attitude of certain countries.*”<sup>608</sup>

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<sup>605</sup>Nasser Hadian, op. cit. pp.62-63

<sup>606</sup> Saideh Lotfian, “Nuclear Policy and International Relations”, in Edited by Homa Katouzian and Hossein Shahidi, “*Iran in the 21<sup>st</sup> Century: Politics, Economics and Conflict*”, Routledge, 2008, pp.161-162

<sup>607</sup> In 2006, ten months before the UNSC’s decision to sanction Iran, the Iranian Student Polling Agency (ISPA) conducted a public opinion poll in order to determine the support of the public. According to the results of this poll, 85,4% of Iranians supported Iran’s nuclear energy program and 64% of respondents stated that the program should continue despite the economic sanctions. Terror Free Tomorrow (TFT) and World Public Opinion (WPO) did surveys on Iran’s nuclear program in 2008. According to the poll results, Iranians supported the Iranian nuclear program with a high percentage (89% and 90% respectively). According to a survey conducted by the RAND Corporation, 87% of Iranians favored the use of nuclear energy for peaceful purposes and 98% of respondents consider owning nuclear energy as a “national right”. See for more: Iranian public attitudes towards their country’s nuclear energy program, <<http://nuclearenergy.ir/public-opinion/>>, [Access Date:16/11/2014]

<sup>608</sup> Saideh Lotfian, op. cit. p.163, Saideh Lotfian cited this sentence from IRIB News, but the source that she referred to is unavailable.

The Supreme Leader Sayyid Ali Khamanei's fatwa on nuclear weapons is frequently used as an argument in Iran's official negotiations.<sup>609</sup> Newly elected Iranian President Hassan Rouhani has used expressions parallel to this discourse. President Hassan Rouhani stated that there is no place for nuclear weapons and other WMD in Iran's security and defence policy and also that these weapons contrast with their religious and ethical beliefs.<sup>610</sup>

Nuclear technology requires a highly advanced technological infrastructure; therefore, it can be considered as one of the indicators of technological development. The Iranian regime frequently emphasizes this feature of nuclear technology. Also, this symbolism was even manifested on Iranian money. In 2007, the Central Bank of the Islamic Republic of Iran issued a 50,000 rials banknote. On one side of this banknote there are map of Iran and nuclear insignia as well as a hadith which read, "*If the science exists in this constellation, men from Persia will reach it.*"<sup>611</sup>(See Figure: 16) Hossein Seifzadeh claimed that musical pieces which supported peaceful nuclear technology were composed by the IRIB (Islamic Republic of Iran Broadcasting).<sup>612</sup>

Emphasis on the level of technological development also includes emphasis on the former glory of Iranian civilization. As mentioned above, the "*Regime's Glorious Achievement*"<sup>613</sup>Iran's nuclear technology. The Iranian regime is looking for a respectable position in the international community, and nuclear technology is seen as an important tool to achieve this position. Former President Mahmoud Ahmadinejad announced the acquisition of nuclear fuel cycle technology as a major success of the Iranian people. President Mahmoud Ahmadinejad stated that "*Iran has joined the*

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<sup>609</sup> Saideh Lotfian quoted Gholamreza Aghazadeh's, head of the AEOI, statement: "Iran is fully committed to its NPT responsibilities, not only because of its contractual obligations, but also because of its religious and ethical considerations." Saideh Lotfian, "Nuclear Policy and International Relations", in Edited by Homa Katouzian and Hossein Shahidi, "Iran in the 21<sup>st</sup> Century: Politics, Economics and Conflict", Routledge, 2008, p.165

<sup>610</sup> "No Place for Nuclear Weapons in Iran Security Doctrine", <[www.thehindu.com](http://www.thehindu.com)>, New York, September 25, 2013, <<http://www.thehindu.com/news/international/world/no-place-for-nuclear-weapons-in-iran-security-doctrine/article5166581.ece>>, [Access Date:05/12/2014]

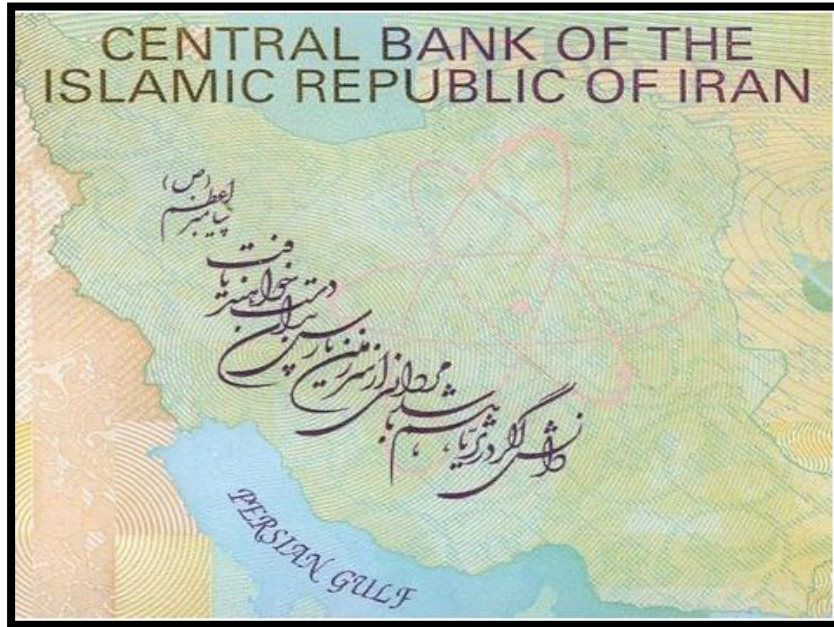
<sup>611</sup> Stuart Jeffries, "Iran's new banknote goes nuclear", *The Guardian*, Wednesday 14 March 2007, <<http://www.theguardian.com/world/2007/mar/14/iran.stuartjeffries>>, [Access Date:8/12/2014]

<sup>612</sup> Hossein Seifzadeh, op. cit. p.138

<sup>613</sup> Hossein Seifzadeh, op. cit. pp.137-138.

*nuclear countries of the world. This is a starting point for more major points of success for the Iranian nation.*”<sup>614</sup>

**Figure 16:** Iran’s 50,000 rials banknote



**Source:** Banknote News, Iran issues new 50,000-rial note featuring nuclear insignia, <<http://www.banknotenews.com/files/09ce34c23a12c080019c3d66b71938d7-105.php>>,

As seen above, nuclear technology is frequently used in nationalist discourse. In addition, it is possible to see the effects of nationalist thinking in the negotiation process. Firstly, Iran sees itself as the successor of a major civilization. Therefore, Iran is waiting for mutual respect in its relationships between other states. The use of prescriptive language is regarded as degrading for Iranians.<sup>615</sup> So, imperious speeches lead to negative effects. Another factor which causes discomfort on the side of Iran is the perception of discrimination. Pre-conditions and special requirements for Iran strengthen this perception. Thus, Iranian politicians frequently emphasize that there

<sup>614</sup> Nazila Fathi, Cristine Hauser, “Iran Marks Step in Nuclear Development”, *The New York Times*, 11 April 2006, <[http://www.nytimes.com/2006/04/11/world/middleeast/11cnd-iran.html?\\_r=2&oref=slogin&](http://www.nytimes.com/2006/04/11/world/middleeast/11cnd-iran.html?_r=2&oref=slogin&)>, [Access Date:23 October 2013]

<sup>615</sup> “Language of respect is better than the language of sanctions”, *Iran News Daily*, 07 August 2013, <<http://www.irannewsdaily.com/?lng=en&cid=CMSContent&content=1344>>, [Access Date: 14/9/2014]

should be negotiations without preconditions.<sup>616</sup> The alleged discrimination against Iran is one of the criticisms voiced by Iranian politicians. As mentioned above, the concept of “*nuclear apartheid*” was expressed by Iranian political elites many times on many diplomatic platforms,<sup>617</sup> and there is almost a consensus among Iranian conservative and moderate politicians in this regard.<sup>618</sup> Iran's criticism is not entirely unfounded. For instance, the nuclear cooperation agreement between India and the US supports this criticism. In 2008, India and the United States agreed upon strategic cooperation in the nuclear energy field. According to this agreement, American companies were able to sell nuclear fuel, nuclear technology and nuclear reactors to India.<sup>619</sup> The problematic side of this agreement is that India is outside of the nuclear non-proliferation regime and it has nuclear weapons. The gap between US attitudes towards these two countries is not acceptable for the Iranians.

In short, Iranians ascribe considerable symbolic meaning to nuclear energy/technology. This may suggest that there is a strong “nuclear myth” at first glance. However, there is a lower level of support about nuclear weapons. The Supreme Leader’s fatwa contributes to the “nuclear taboo”. It is possible to see the effects of both these normative aspects on Iran’s nuclear program.

### 3.3.3: Assessment

In this part of the thesis, the three models were applied to Iran’s nuclear program. The different elements of the motivation of Iran were exhibited by using these models. It was indicated that the Security Model provides a very limited contribution to

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<sup>616</sup> “Rouhani: We are ready to negotiate without preconditions” (روحانی: آماده مذاکره بدون پیش شرط هستیم), *Shargh Daily*, ۱۳۹۲ مهر ۱ (23 September 2013), <[http://sharghdaily.ir/?News\\_Id=21009](http://sharghdaily.ir/?News_Id=21009)>, [Access Date: 23/09/2013]

<sup>617</sup> Address by H.E. Dr. Mahmood Ahmadinejad, President of the Islamic Republic of Iran, before the Sixtieth Session of the United Nations General Assembly, New York, 17 September 2005, <<http://www.un.org/webcast/ga/60/statements/iran050917eng.pdf>>, [Access Date: 15/11/2014]

<sup>618</sup> “Rouhani says Iran will not accept ‘nuclear apartheid’”, *Agance France-Press*, 12 May 2014, <<http://www.thenational.ae/world/middle-east/rouhani-says-iran-will-not-accept-nuclear-apartheid>>, [Access Date: 12/12/2014]

<sup>619</sup> Sait Yılmaz, “Ulusal Savunma: Strateji, Teknoloji, Savaş”, *Kum Saati Yayınları*, Istanbul, 2009, p.352.

determine the motivations in Iran case. The Domestic Politics Model and Norms Model provided to find significant motivating factors.

The Security Model contributes a limited amount to the response for this question. This model claims that security is provided by increasing military power and the capacity of the state. According to this model, threat perceptions of the Iran may encourage the continuation of the nuclear program.

All Iranians do not support the nuclear program in the same manner or to the same extent. As mentioned above, some Iranians advocate obtaining nuclear weapons while others do not. The Security model describes the concerns of those who think this way. According to this model, nuclear weapons are required for Iran's national security policy and self-contained defense capability.

In the beginning of the 1990's, the legacy of Iraq-Iran War and the suspected nuclear activities of the Iraqi government were elements that reinforced the threat perception of the Iran. In the 21<sup>st</sup> century, Iraq and Afghanistan under the Taliban are not the primary threats to Iran because after the invasion of these countries by the United States, regional threat perception of Iran has changed. Military bases of the United States which were surrounding Iran have become a higher priority threat. So, the United States and Israel rose to a higher priority among Iran's threat perceptions. According to this perspective, the Iranian regime may wish to take advantage of the deterrence provided by nuclear weapons, but nuclear weapons do not guarantee the security of a country. Also, M.A.D. is not seen as an applicable strategy against these countries in the short or medium term. Therefore, acquiring nuclear weapons does not seem like a reasonable option for Iranian political elites.

Iran's long-range ballistic missiles testing raised concerns about its intentions, but this situation does not prove the existence of a nuclear weapons program. Iran increases its military power by producing conventional weapons. Any information about Iran's secret nuclear weapons program was not found during this thesis.

The Domestic Politics Model has also contributed in answering this question. This model focuses on domestic actors who can impact the decision-making process. According to Sagan there are three kinds of actors playing important roles in connection with a state's decision to pursue the nuclear bomb: the state's nuclear energy establishment, the professional military as bureaucratic actors, and politicians. In Iran



case these institutions and individuals were chosen: The AEOI, the IRGC, the President, the Supreme Leader, the Supreme National Security Council and the Parliament.

Individuals and institutions working in the field of nuclear technology support the continuation of the nuclear program. The Atomic Energy Organization of Iran (AEOI), technical universities and scientists working in the field of nuclear researches gained extensive amenities and prestige with the investments of Iran to its nuclear program. These institutions and individuals support the maintenance and development of the nuclear program, and they want to direct negotiation process in accordance with this objective. Also scientists who work in the field of nuclear technology and students of technical universities are strong-willed supporters of Iran's nuclear program, because according to them, nuclear technology is a high level of science and it illustrates the scientific progress of Iran.

The President's approach to the nuclear program is important in determining the general policy because the president is the person who can use it as a foreign policy tool. The President, the head of the execution, is responsible for the implementation of the national policy. Therefore, can be said that the President have an effect on the way the implementation of the nuclear program. Also the resurgence of military institutions is also a condition related to the presidency. Therefore, the president plays an important role in creating the structure of the cabinet and the High National Security Council.

The IRGC offers an important contribution to sustaining the program because it has many companies operating under the nuclear and ballistic missile programs of Iran. Therefore to being the target of sanctions for the IRGC is not surprising. The IRGC determines its position in accordance with the directives of the Supreme Leader (also commander-in-chief) because protection of the revolutionary values is the most important priority of the IRGC.

The Supreme Leader Ali Khamanei, who is at the top of the state's political structure, is the most important political figure encouraging Iran's nuclear activities. Seyyed Ali Khamanei has the authority to determine the general policies of the country. Also, being the approval authority provides an effective tool in the management of the policies. The Supreme Leader is able to influence on the masses because it represents the highest religious authority. According to Velayet-e Faqih theory his fatwas are perceived as the order of the religion.

The Islamic Parliament of Iran may accelerate or decelerate implementation of policies. The problems faced by Hassan Rouhani in creating the cabinet are the most vivid example of this statement. The Parliament has the authority of ratification of the treaties and the approval of the cabinet. Therefore, importance of the Parliament should not be underestimated. But there is a point to keep in mind that all laws arising from the parliament must be submitted for approval of the Guardian Council of the Constitution.

The Supreme National Security Council is the institution which determines the state policy. After the approval of the Supreme Leader determined policies are applied by all establishments. Iran's nuclear program is carried out in cooperation between the institutions so it is possible to say that the nuclear program adopted as a national project.

The Norms Model was helpful in terms of developing our understanding of the symbolic meaning of the nuclear program. Using this model, the symbolic functions of nuclear weapons have come to the fore. In Iran case, the nuclear program is perceived as an indicator of technological development and is supported by the majority of Iranians. This public support is one of the most significant propulsive forces for Iran's nuclear program because there will be political consequences of sustaining a "national project" which continued for many years. The social, cultural and religious structures of Iran are influential, at least partly, over its nuclear program. According to the Norms Model, there are several positive perceptions, which strengthen the nuclear myth, among the Iranians about the nuclear program. Particularly symbolic meanings of the Iran's nuclear program draw the attention.

Common history, geography, language, and religion are the elements that constitute the Iran national identity. Persian nationalism has increased, especially during the Shah era, and nationalist conservative politicians argue that nuclear technology is necessary for the promotion of Iran's regional leadership. After the Islamic Revolution, Persian nationalist discourse was replaced with Revolutionary political discourse. Iran was the first and only country under the leadership of the faqih (Imam). This situation gave him the duty of being a pioneer of the Ummah. Being the leader of the Islamic world from every corner is one of the objectives of the Iranian regime. Iran, heir of a great civilization, aims to achieve a respectable position in the international community

so nuclear technology, indicating the high level of development, is willing to achieve. Therefore nuclear program is perceived as an element of national pride and prestige.

Also Iranian political elites consider the nuclear program as one of the Islamic Regime's sources of legitimacy and a great achievement of the Islamic Republic of Iran. After the Islamic Revolution new regime constantly faced with conflict and sanctions. Therefore new regime could not provide a high welfare to the Iranians. The nuclear program that requires high technological knowledge is a significant contribution of the Islamic regime to the development level of Iran. The continuation of the nuclear program despite all prevention initiatives makes use of it as a success story. This "glorious achievement" of the regime indicates that the capacity of development of the Islamic Republic. This is one of the elements that makes nuclear program indispensable for Iran.

Also Iran and the world's leading powers (P5+1) sat down together at the negotiating table because of this program. Iran isolated, at least partially, in the international arena and encountered problems in its relations with the West. Today, Iran carries out negotiations as equal status with the world's leading countries. This condition provides a significant symbol of prestige for Iran in the international arena.

Additionally, the nuclear program was defined as a national right and became one of the sources of national pride. In short, the symbolic meaning of this program made it impossible to completely abandon its nuclear activities. Therefore, Iran' entirely renouncing nuclear energy/technology does not seem to be a possible scenario.

Iran's rivals (Turkey and Egypt) in the race for the regional leadership (at the same time leadership of the Islamic world) do not have nuclear technology yet. This situation shows that Iran is more advantageous in a specific area but it alone is not enough to regional leadership. Iran is the only Muslim country in the Middle East with nuclear reactors (assuming that Pakistan is not a Middle East country). However, in 2013, United Arab Emirates began the construction of three nuclear reactors. Iran, which can produce nuclear technology, is the second state in the Islamic world with this accomplishment (Pakistan is the first).

The Supreme Leader Ali Khamanei's fatwa imparts a religious dimension to this program. This fatwa declared nuclear weapons *haram*. According to the theory of the Velayat-e Faqih, the Imam's (God's representative on earth) ijtihad must be followed.

This fatwa may be represented as the most important development that supporting the nuclear taboo approach. Iranian authorities often indicate that they intend to produce peaceful nuclear energy. A statement affirming the nuclear weapons should not be expected from the Iranian officials while they are aiming a prestigious position in the international arena.

## CONCLUSION

Nuclear technology is an issue that should be addressed in a sensitive manner because it can be used both as a weapon with high destructive power and a significant energy source. Thus, it must be ensured that nuclear technology is used for peaceful purposes. There is an increasing effort of the international community to ensure the realization of this objective. Nevertheless it is impossible to claim that the danger of nuclear proliferation is completely eliminated. Iran's failure to inform the IAEA about its nuclear activities can be seen as an example of the inadequacy of control mechanisms over nuclear activities. After it was revealed that Iran failed to report some of its' nuclear activities to the International Atomic Energy Agency, Iran's nuclear program has become an international concern. The International community concerned about Iran's nuclear program imposed sanctions to discourage Iran's nuclear activities. Although Iran harmed by sanction resolutions, continued its nuclear activities. The aim of this thesis is answering the following question about Iran's Nuclear Program.

*What are the motivations of Iran for having and maintaining Iranian its nuclear program?*

This thesis is structured as follows to find the answer to this question: The first chapter of this thesis aims to establish a background on nuclear proliferation/nonproliferation, nuclear energy and nuclear weapons. Therefore, theories on nuclear proliferation were introduced briefly to provide theoretical background. Then, basic information about nuclear physics has been presented to make it easier to understand nuclear weapons production and nuclear energy generating. The role of nuclear technology is critical in nuclear proliferation because it is double-sided and nuclear weapons production and power generation are emerging after a similar process. In the last part of the first chapter Nuclear Nonproliferation regime was described briefly and key elements of the this regime was introduced. In the second chapter firstly, very brief information about Iran's history and socio-economic structure was given because it is useful to understand the Iranian national identity. In the next part of the chapter the

origin of Iran's nuclear program and negotiation process were discussed. The third chapter of this thesis aims to implement Scott Sagan's three model approach to Iran's nuclear program in order to understand motivations of Iran for having and maintaining its nuclear program. As results of this implementation the following findings were reached.

The "Security model", which argues that states tend to acquire nuclear weapons due to security concerns, does not provide an adequate explanation to interpret Iran's threat perception because threat perception of states may change over time. Iran's security, especially regional security, concerns has changed since the early years of the Islamic Revolution. Military bases of the United States became primary regional security threat for Iran after the invasion of Afghanistan and Iraq by the United States. Israel's nuclear capability is another serious source of concern in Iran's threat perception. There must be a certain nuclear balance (M.A.D.) between the adversaries for the operation of deterrence of nuclear weapons. It is unlikely for Iran that balancing the United States in terms of nuclear capability in a short or medium term.

The Domestic Politics model which argues that domestic actors playing significant role in state's decision to acquire the nuclear bomb, contributed to the understanding of Iran's motivations. According to Sagan these important domestic actors are: the state's nuclear energy establishment, the professional military as bureaucratic actors, and politicians. In Iran case these institutions and individuals were chosen as actors who influence the decision-making process: The AEOI, the IRGC, the President, the Supreme Leader, the Supreme National Security Council and the Parliament.

In Iran case state's nuclear energy establishment, the Atomic Energy Organization of Iran (AEOI), and individuals and institutions working in the field of nuclear technology favors the continuation of Iran's nuclear activities. These institutions and scientists gained broad amenities and esteem with the investments of Iran to its nuclear program and they do not want to lose these opportunities. Also they believe that nuclear technology is a high level of science and it illustrates the scientific progress of Iran and it should not be interrupted.

The President, the head of the execution, who is responsible for the implementation of the national policy, plays an important role in determining the

general policy of the state. Therefore, can be said that the President have an effect on the way the implementation of the nuclear program. The president plays an important role in creating the structure of the cabinet and the High National Security Council but he is not completely free in the implementation of the policies because his candidates for ministries must receive vote of confidence from the parliament. Thus importance of the parliament should be taken into account in the continuation of Iran's nuclear program because it may accelerate or decelerate implementation of policies. Iran's nuclear program is frequently used by Iranian political elites in political discourse and they stated that sustaining the nuclear program is a necessity for Iran. In sum, Iranian politicians support the continuation of Iran's nuclear program because this idea is adopted by the majority of the Iranian people.

The IRGC holds an important place in the Iranian economy and operates in many different areas, including some of Iran's nuclear activities. It has many companies operating under the nuclear and ballistic missile programs of Iran, so being the target of sanctions is not surprising for the IRGC. The most important priority of the IRGC protection of the Islamic Revolution and its values, that's why directives of the Supreme Leader (also commander-in-chief) are decisive for the IRGC officials. The IRGC determines its position in accordance with the Supreme Leader so its officials take strong stand in favor of the continuation of Iran's nuclear program.

It is undeniable that the Supreme Leader Ali Khamanei is the most influential political figure in Iran's political structure. According to constitution of Iran the Supreme Leader has the authority to determine the general policies of the country and he is the approval authority which provides an effective tool in the management of the policies. Policies which are determined by the Supreme National Security Council may carry out after the approval of the Supreme Leader. Also, according to Velayet-e Faqih theory the Supreme Leader is the highest religious authority and this feature gives ability to influence on the masses and his fatwas are considered as the order of the religion. The Supreme Leader argues that Iran's nuclear program should not be conceded, and should not be stopped because it is a national right and national project.

The Norms Model was helpful to understand a different aspect of a nuclear program: symbolic meanings of nuclear weapons. According to this model, the symbolic functions of nuclear weapons can be a significant motivator in obtaining

nuclear weapons. In Iran case, symbolic meanings of its nuclear program draw the attention.

The nuclear program of Iran is considered as an indicator of technological progress. Iran's nuclear program is supported by the majority of Iranians because it is seen as a "national project" and this public support is one of the most significant propulsive forces for the program. As a natural result of this situation there will be political consequences of sustaining a "national project" which continued for many years.

The socio-economic and religious structures of Iran and its historical background are influential, at least partly, over its nuclear program because these are effective in the formation of national identity. National identity of Iran is important because certain symbolic meanings are attached to its nuclear program and this program is perceived as reflection of its technological progress and prestigious position in the international arena. In sum, Iran's nuclear program reflects its self image (leadership of the Islamic World) and its desired position (a respectable position) in the international community. According to nationalist-conservative politicians Iran's nuclear program is a necessity for the promotion of Iran's regional leadership.

After the Islamic Revolution, nationalist policies of the Shah were replaced with Revolutionary foreign policies. According to new regime Iran must be pioneer of the Ummah because it was the first and only country under the leadership of the faqih (Imam). Achieving the leadership of the Ummah (Islamic World) in every area is one of the destinations of the Islamic regime of Iran. Iran, as heir of a great civilization, must achieve a respectable position in the international arena and nuclear technology is a way of achieving this position because it is indicating the high level of development. Therefore Iran's nuclear program is perceived as an element of national pride and prestige in the Islamic world.

According to Iranian political elites nuclear program is a great achievement of the Islamic regime, thus development of nuclear program should not be prevented. Iran's nuclear program provides a source of legitimacy to the Islamic regime because nuclear technology symbolizes high advanced technological level and shows that the Islamic regime is not an obstacle to development. The new regime of Iran constantly faced with conflict and sanctions after the Islamic Revolution and it could not provide a



high prosperity and happiness to the Iranians. Despite all prevention attempts Iran continued its nuclear program and these prevention efforts make use of it as a success story. Iran describes its nuclear program as a “glorious achievement” of the regime which indicates that the capacity of development of the Islamic Republic. Evolution of nuclear program in this way provides the use political discourse as a source of motivation.

After the Islamic Revolution Iran has followed a foreign policy which isolates itself but later partly changed its foreign policy and tried to be a little integrated with the international system because it desired a respectable position. In recent years, Iran performs negotiations as equal status with the world's leading countries (P5+1) by means of its nuclear program. For Iran, this situation provides an important status in the international community to Iran.

Iran wants to take advantage of the benefits of having nuclear technology in the race for the regional leadership with Egypt and Turkey (at the same time for the leadership of the Islamic world). Although the United Arab Emirates began the construction of three nuclear reactors in 2013, Iran is the only Muslim country in the Middle East with nuclear reactors and it is also the second state in the Islamic world with this achievement. In sum, obtaining nuclear technology is seen as a significant step in the race for regional leadership, so taking advantage in this race is an important motivational factor for Iran.

As mentioned above, the Supreme Leader Ali Khamanei represents an important religious authority that's why his fatwas imparts a religious dimension to this program. According to Khamanei nuclear weapons *haram* this type of weapon and all weapons of mass destruction are contradicts with the Islamic faith and ethical values. According to the theory of the Velayat-e Faqih, Khamanei's fatwa has a sanction power from a religious point because the Imam's (God's representative on earth) *ijtihad* must be followed in this theory. This fatwa is used frequently by the Iranian authorities to support the claim that Iran's peaceful nuclear program.

In sum, nuclear program of Iran and its motivations cannot be fully understood from only security or energy based points of views so the domestic political structure of Iran should be taken into account because it plays a significant role in the implementation of Iran's nuclear program. Also symbolic meanings of nuclear

technology should not be ignored because it constitutes a suitable ground for motivating factors. In Iran case, symbolic meanings of nuclear program which attributed to it, makes it impracticable to entirely abandon Iran's nuclear activities. Therefore the negotiation process should be carried out without ignoring this condition

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<<http://disarmament.un.org>>  
<<http://www.aeoi.org.ir>>  
<<http://ec.europa.eu>>  
<<http://www.energybc.ca>>  
<<http://www.api.org>>  
<<http://www.world-nuclear.org/>>  
<<http://oxfordresearchgroup.org.uk>>  
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<<http://www.state.gov>>  
<<http://president.ir/en/>>  
<<http://en.parliran.ir/>>  
<<http://khamenei.ir/>>  
<<http://www.unidir.org/>>  
<<http://www.nuclearsuppliersgroup.org>>  
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<<http://www.heritage.org>>  
<<http://www.nukleer.web.tr/>>  
<[www.ctbto.org](http://www.ctbto.org)>  
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## APPENDICES

### APPENDIX 1

Map of the Middle East showing US military locations in the region and the sites of Iranian nuclear facilities.



Source: Rogers, Paul. "IRAN:Consequences of a War", Oxford Research Group, 2006

**APPENDIX 2**

**U.S. and UN Sanctions Targeting Iran**

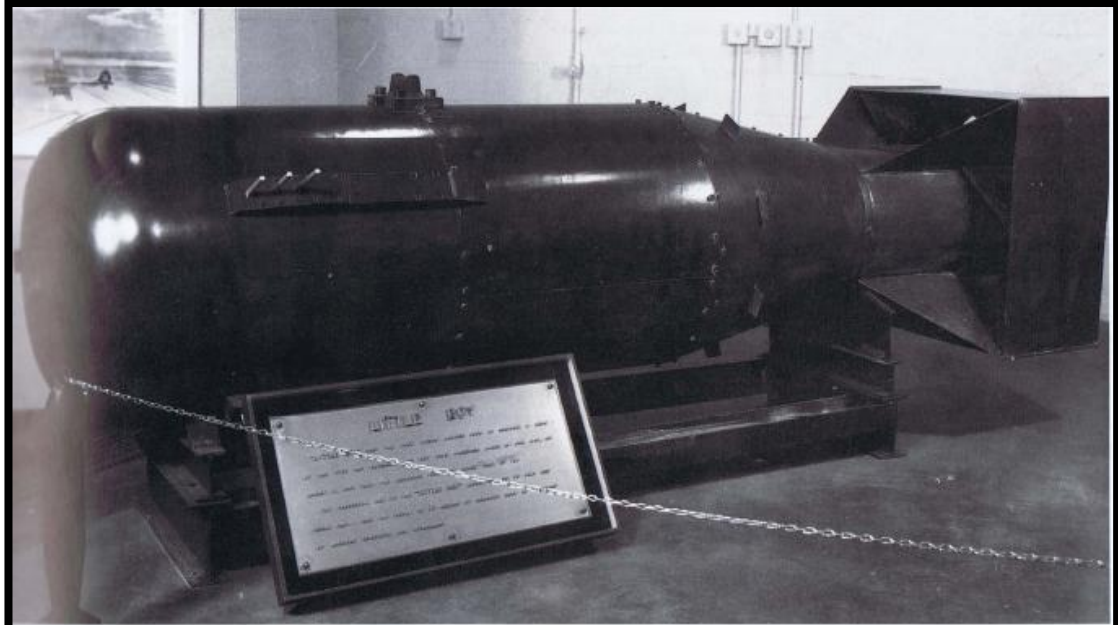
U.S. government sanctions	International Atomic Energy Agency (IAEA) and U.N. Security Council (UNSC) actions
• Iran designated "state sponsor of terrorism."	1984
	1985 1986
• Executive Order 12613 – U.S. imports of Iranian goods banned.	1987
	1988 1989 1990 1991
• Iran - Iraq Arms Nonproliferation Act of 1992 – sanctions against foreign parties engaging in proliferation activities (advanced conventional weapons) that contribute to Iran's efforts in this area.	1992
	1993 1994
• Executive Order 12957 – restrictions on U.S. involvement with the development of Iran's petroleum resources.	1995
• Executive Order 12959 – ban on U.S. imports of Iranian goods, U.S. exports to Iran, and U.S. investment in Iran.	
• Iran-Libya Sanctions Act of 1996 (ILSA) – sanctions against parties that invest \$40 million or more in the development of Iran's petroleum resources. After the first year, sanctions shall be applied to nationals of nonwaiver countries who invest \$20 million or more.	1996
• Executive Order 13069 – consolidation of prior executive orders, prohibition on trade and investment activities with Iran.	1997
	1998 1999
• Iran Nonproliferation Act of 2000 – sanctions against foreign persons transferring controlled goods (nuclear, biological, or chemical weapons, or ballistic or cruise missile systems) to Iran.	2000
• Lifting of restrictions on certain (1) U.S. imports of Iranian goods such as carpets, dried fruits, and nuts; and (2) U.S. exports to Iran such as food, agricultural commodities and medical products.	
	2001 2002
	2003
	2004
• Iran Nonproliferation Amendments Act of 2005 – amended Iran Nonproliferation Act of 2000 to include Syria (renamed Iran and Syria Nonproliferation Act).	2005
• Iran Freedom Support Act – amended ILSA to (1) add nuclear, chemical, biological, advanced conventional weapons as sanctionable, (2) remove Libya from ILSA (renamed Iran Sanctions Act).	2006
• North Korea Nonproliferation Act of 2006 – amended Iran and Syria Nonproliferation Act to include North Korea (renamed Iran, North Korea, Syria Nonproliferation Act).	
	2007

Source: GAO analysis of U.S. laws and executive orders, as well as UN documents, including UN Security Council resolutions.

**Source:** GAO, US. Government Accountability Office, GAO-08-58

### APPENDIX 3

#### The first nuclear bombs: “Little Boy” and “Fat Man”



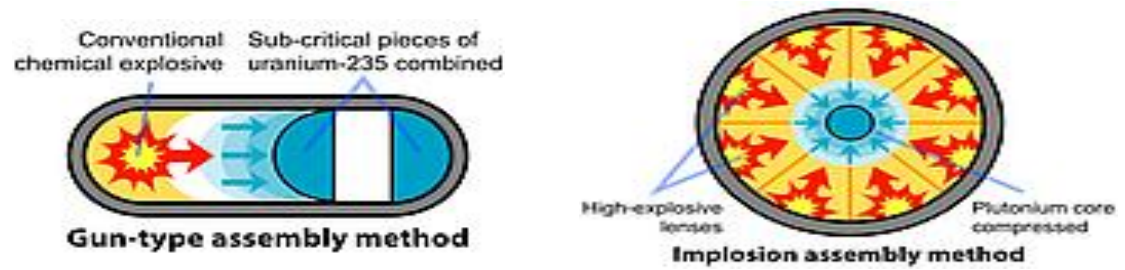
The Little Boy (Mk-1) bomb casing. This was the first nuclear weapon to be used in combat.  
Photo by: National Atomic Museum



The Fat Man, or Mk-III casing. The Fat Man type was the nuclear free-fall bomb of the United States for four years after Nagasaki. It was used primarily because plutonium was easier to purify than Uranium.  
Photo by: National Atomic Museum

## APPENDIX 4 – Types of Nuclear Fission Weapons

Figure 13: Types of Nuclear Fission Weapons



Source: <<http://www.ctbto.org/nuclear-testing/types-of-nuclear-weapons/>>

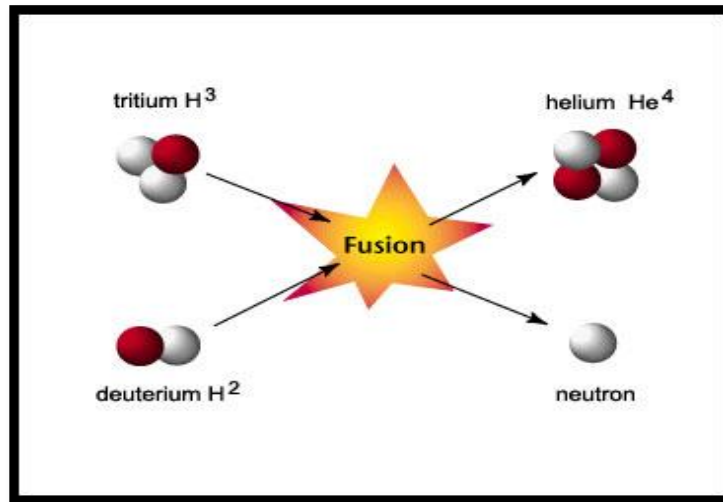


## APPENDIX 5 - Nuclear Fusion and Nuclear Fusion-Based Weapons

### Nuclear Fusion

Nuclear energy can also be generated by “nuclear fusion”. As defined above, in nuclear fusion two light elements (elements with low atomic numbers) turn into a heavier atom by combining.<sup>620</sup>

Figure 14: Nuclear Fusion



Source: <<http://www.atomicarchive.com/Fusion/Fusion1.shtml>>

The sun and the stars get their energy from nuclear fusion. Hydrogen turns into Helium constantly. Hydrogen bombs (also called thermonuclear weapons) yield explosions more powerful than fission bombs.<sup>621</sup> Hydrogen bombs and neutron bombs (small hydrogen bomb) function with the principle of nuclear fusion, but the fusion requires extremely high temperatures and radiation which are derived from a fission bomb (primary).<sup>622</sup> Thus, fusion bombs are sometimes called “**boosted weapons**”. Thermonuclear weapons consist of two parts: a Primary (Fission Bomb) and a Secondary (Lithium Deuteride).<sup>623</sup> Radiation released by a fission bomb will react with

<sup>620</sup> Haluk Gerger, op. cit. pp.49-50

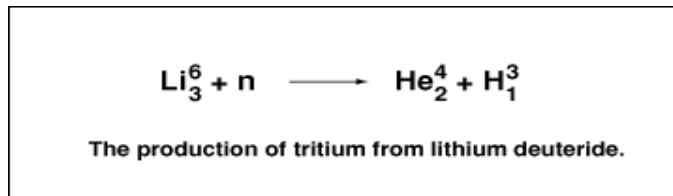
<sup>621</sup> The atomic bombs which were dropped on Hiroshima (Little Boy) and Nagasaki (Fat Man) yielded 13 Kt (kiloton) and 21 Kt (Kiloton) respectively. The Largest nuclear test, Tsar Bomb (a thermonuclear bomb), yielded an estimated 50-58 Mt (Megaton) and was carried out by the Soviet Union in 1961. <[www.ctbto.org](http://www.ctbto.org)>

<sup>622</sup> “Boosted weapons are typically implosion devices with deuterium and tritium gas introduced into the hollow pit in the centre of the fissile pit. As fission begins, the high temperature causes fusion, and the high-energy neutrons released by fusion accelerate the fission chain reaction.” Ibid.

<sup>623</sup> Lithium Deuteride is used to obtain tritium.

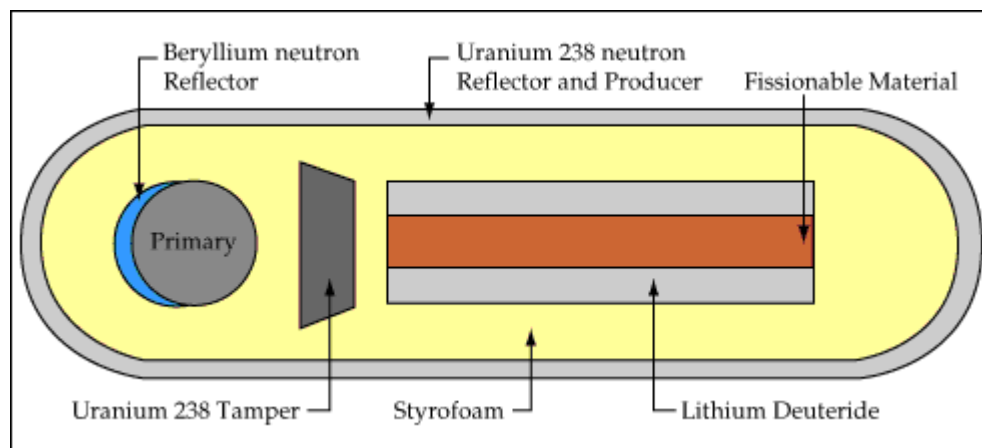
lithium deuteride, and as a result of the chemical reaction, tritium and helium will be released.

**Figure 15:** The Production of Tritium from Lithium Deuteride



Source: <<http://www.atomicarchive.com/Fusion/Fusion2.shtml>>

**Figure 16:** The Hydrogen Bomb: Schematic



Source: <<http://www.atomicarchive.com/Fusion/Fusion4.shtml>>

There is another type of nuclear weapon: **neutron bomb** (also called **Enhanced Radiation Weapons-ERW**). An effective and deadly feature of these weapons is the radiation damage.<sup>624</sup> Although the nuclear explosion is a remaining secondary effect of neutron bombs, it can lead to mass casualties. The advantages of this bomb are, from a military standpoint, that it cause less damage to infrastructure (thereby reduces the cost of reconstruction) and leaves short-lived radioactive fallout (purification of radioactive material is less costly). This weapon was desired by NATO forces, but there is no definite information related to having such weapons by any country. Nevertheless, “*the United States, Russia, France, and China are all believed to have developed and tested neutron bombs.*”<sup>625</sup>

<sup>624</sup> <<http://www.atomicarchive.com/Fusion/Fusion5.shtml>>, [Access Date: 17/09/2014]

<sup>625</sup> <[http://www.ctbto.org/index.php?id=280&no\\_cache=1&letter=n#neutron-bombs](http://www.ctbto.org/index.php?id=280&no_cache=1&letter=n#neutron-bombs)>, [Access Date: 17/09/2014]



## APPENDIX 6 - International Initiatives Supporting the Nonproliferation Regime

### Comprehensive Test Ban Treaty (CTBT) and CTBTO

In 1963, the Limited Test Ban Treaty that banned nuclear testing in outer space, the atmosphere and under water, excluding underground, was signed in Moscow.<sup>626</sup> This treaty prohibits not only nuclear weapons tests but also “any other nuclear explosion” which includes explosions for peaceful purposes.<sup>627</sup> To fill the space left by this treaty, in 1974 The Treaty on the Limitation of Underground Nuclear Weapon Tests (Threshold Test Ban Treaty-TTBT) was signed between the United States and the Soviet Union,<sup>628</sup> because these two countries had almost all the nuclear weapons in the world. According to this treaty, the upper limit of underground nuclear tests is 150 kilotons. The Threshold Test Ban Treaty did not completely eliminate the possibility of nuclear testing, but it prevented vertical proliferation.<sup>629</sup>

In 1996, the Comprehensive Test Ban Treaty was opened to signatures in New York. This treaty prohibits all nuclear tests and constitutes an efficient verification system<sup>630</sup>. Seismic monitoring and on-site inspections are the main audit tools proposed by this agreement<sup>631</sup>. The treaty has been widely accepted in the U.N. General Assembly, but it has not entered into force yet, because the treaty’s entry-into-force provision<sup>632</sup> could not be achieved.

The CTBT’s entry-into-force provision requires the ratification of the 44 “nuclear-capable” nations that possess either nuclear power or nuclear research reactors. Of those nations, 3-India, North Korea, and Pakistan-have not signed the treaty; and 8-including China, Israel, and the United States-have yet to ratify it<sup>633</sup>

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<sup>626</sup> <<http://www.state.gov/t/isn/4797.htm>>, [Access Date:16/10/2014], Maj Gen R.S. Mehta(ed.),”Encyclopedia of Nuclear Arms Control & Non-Proliferation”, Pentagon Press, Volume 1, New Delhi, 2007, pp.8-9

<sup>627</sup> Ibid. For text of the treaty, See Ibid. pp.10-16

<sup>628</sup> Maj Gen R.S. Mehta, Ibid. pp.17

<sup>629</sup> Ibid.

<sup>630</sup> Joseph Cirincione et. al. op. cit. pp.33

<sup>631</sup> Ibid.

<sup>632</sup> According to the treaty, all 44 countries (Annex 2) which have nuclear capability have to ratify the treaty in order for the agreement to enter into force.

<sup>633</sup> Joseph Cirincione et. al. op. cit. pp.33

6 of 8 countries that have not ratified the CTBT have nuclear weapons<sup>634</sup>. This situation is both remarkable and worrying.

The Preparatory Commission for the Comprehensive Test Ban Treaty Organization (CTBTO) was assembled on November 19, 1996. The headquarters of this commission is in Vienna.<sup>635</sup>

Article II of the Comprehensive Nuclear-Test-Ban Treaty (CTBT) provides for the establishment of a Comprehensive Nuclear-Test-Ban Treaty Organization to achieve the aims of the Treaty, ensure its implementation and to serve as a forum for its members<sup>636</sup>

### **Nuclear Suppliers Group (NSG)**

There is a need to acquire nuclear (fissile) materials and nuclear related technologies in order to develop a nuclear weapon. These opportunities are in the hands of a limited number of countries. Therefore nuclear-related exports must be regulated to prevent the misuse of these materials. In 1974, the Nuclear Suppliers Group (NSG) was created as a reaction to a nuclear test by India.<sup>637</sup> The NSG implemented guidelines for nuclear and nuclear-related exports, and in 1978, these guidelines were published by the IAEA (INFCIRC/254).<sup>638</sup> The aim of the NSG is to prevent the misuse of nuclear transfers. Thus, the supplier should be satisfied that the transfer will not contribute to proliferation, and nuclear-related exports to NNWS should be under the supervision of IAEA's safeguards.<sup>639</sup> The NSG states that:

In 1992, the NSG decided to establish Guidelines for transfers of nuclear-related dual-use equipment, material and technology (items which have both nuclear and non-nuclear applications), which could make a significant contribution to an unsafeguarded nuclear fuel cycle or nuclear explosive activity.<sup>640</sup>

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<sup>634</sup> Status of Signature and Ratification, <<http://www.ctbto.org/the-treaty/status-of-signature-and-ratification/>>, [Access Date:15/10/2014]

<sup>635</sup> Establishment, Purpose and Activities, <<http://www.ctbto.org/the-organization/ctbto-preparatory-commission/establishment-purpose-and-activities/>>, [Access Date:15/09/2014]

<sup>636</sup> Ibid.

<sup>637</sup> Nuclear Suppliers Group Website, <<http://www.nuclearsuppliersgroup.org/en/history1>>, [Accessed Date:16/10/2014]

<sup>638</sup> Ibid.

<sup>639</sup> Guidelines for Nuclear Transfers, NSG Part 1, June 2013, pp.1-2, <[http://www.nuclearsuppliersgroup.org/images/Files/Updated\\_control\\_lists/Prague\\_2013/NSG\\_Part\\_1\\_R ev.12\\_clean.pdf](http://www.nuclearsuppliersgroup.org/images/Files/Updated_control_lists/Prague_2013/NSG_Part_1_R ev.12_clean.pdf)>, [Access Date:15/10/2014]

<sup>640</sup> Nuclear Suppliers Group Website, <<http://www.nuclearsuppliersgroup.org/en/history1>>, [Accessed Date:16/10/2014]

Currently, 48 countries are participants of the NSG, and also there are two observers (the European Commission and the chair of the Zangger Committee).<sup>641</sup>

### **Zangger Committee (ZAC)**

The Zangger Committee was formed in 1971 in order to provide export controls on nuclear-related strategic goods.<sup>642</sup> In September 1974, ZAC published its first “trigger list”<sup>643</sup> as an IAEA document (INFCIRC/209).<sup>644</sup> There are three conditions of supply: giving a guarantee that goods will be used for peaceful purposes, being subject to IAEA safeguards, and not to re-exporting goods to a NNWS without safeguards applicable to the state.<sup>645</sup> The Trigger List has been updated, reviewed and amended several times from 1974 to the present.

There are 38 states member to the Zangger Committee plus the European Commission as the permanent observer.<sup>646</sup>

The Fissile Material Cut-Off Treaty (FMCT)<sup>647</sup> is entitled thusly, because this treaty prohibits the production of fissile materials, except for peaceful purposes, for all countries.<sup>648</sup>

### **Nuclear Weapon Free Zones (NWFZ)**

Nuclear weapon free zones can be considered as a part of the nuclear non-proliferation regime. Although these NWFZs have resulted from regional efforts, these attempts reinforce the nonproliferation regime and constitute a step towards reaching

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<sup>641</sup> Nuclear Suppliers Group Website, <<http://www.nuclearsuppliersgroup.org/en/participants1>>, [Accessed Date:15/10/2014]

<sup>642</sup> Zangger Committee (ZAC), The Nuclear Threat Initiative Website, <<http://www.nti.org/treaties-and-regimes/zangger-committee-zac/>>, [Accessed Date: 15/10/2014]

<sup>643</sup> “Trigger List”, is triggering safeguards as a condition of supply of nuclear related goods to identify equipment and materials subject to controls. Ibid.

<sup>644</sup> Ibid.

<sup>645</sup> Ibid.

<sup>646</sup> Ibid.

<sup>647</sup> FMCT is a proposal for an international treaty that aims to ban the production of fissile materials for nuclear explosives. Jor-Shan Choi, “Fissile Material Cut-Off Treaty(FMCT)”, Berkeley Nuclear Research Center, June 2013, Philippines (presentation)

<sup>648</sup> Although FMCT is not an international agreement that entered into force, it is an important attempt to nuclear arms control and nuclear threat reduction. Annette Schaper and Morten Bremer Mærli, “The Fissile Material Cut-Off Treaty as a Nuclear Security Policy Driver”, pp.248 in, Nuclear Proliferation and International Security,(Ed. by). Morten Bremer Mærli and Sverre Lodgaard, Routledge, the United States and Canada, 2007

“*global zero*”.<sup>649</sup> These zones are established through multilateral international agreements, and these treaties remain valid indefinitely.<sup>650</sup>

There are several existing NWFZs. Although attempts to ban nuclear activities in Africa started earlier, initiatives in Latin America have come to a conclusion more quickly. For instance, the Tlatelolco Treaty (Treaty for the Prohibition of Nuclear Weapons in Latin America and the Caribbean) can be shown as the first fruitful regional initiative in order to create a NWFZ. This treaty aims to forbid and block the using, testing, producing and obtaining of nuclear weapons by parties. In short, the Tlatelolco Treaty prohibits all activities related to nuclear weapons in the Latin American and Caribbean region.<sup>651</sup> This treaty was signed and ratified by 33 countries and entered into force in 1969.<sup>652</sup>

The Treaty of Rarotonga which constitutes the South Pacific Nuclear-Free Zone (SPNFZ) entered into force in 1986. This treaty was signed and ratified by 13 parties, in a very short time after date it was opened for signature. Parties of the Treaty of Rarotonga are obliged to act in accordance with the NPT and the IAEA safeguards system.<sup>653</sup> All activities and cooperations on nuclear weapons (production, acquisition, manufacturing, handling, et cetera), in the areas where the agreement is valid, are prohibited in accordance with the provisions of this agreement.

In 1995, the Treaty of Bangkok (Treaty on the Southeast Asia Nuclear Weapon-Free Zone) (SEANWFZ) opened for signature and two years later entered into force. Ten countries in Southeast Asia became party to this treaty, which envisages working in accordance with the IAEA. A commission and a subsidiary organ of this commission

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<sup>649</sup> Global Zero refers to eliminating all nuclear weapons. “In April 2009, U.S. President Barack Obama and Russian President Dmitry Medvedev issued an historic joint statement committing their “two countries to achieving a nuclear free world” and subsequently announced a framework agreement for new reductions in U.S. and Russian arsenals. In September, the United Nations Security Council unanimously adopted a resolution calling for the elimination of all nuclear weapons. There is a growing international nonpartisan consensus among political leaders, security experts and publics in support of this goal. Today, the overwhelming majority of nations – 184 – do not have nuclear weapons.” Global Zero Commission, “Global Zero Action Plan”, February 2010, p.2, <[http://www.globalzero.org/files/gzap\\_6.0.pdf](http://www.globalzero.org/files/gzap_6.0.pdf)>, [Access Date:12/12/2014]

<sup>650</sup> <<http://www.nti.org/>>, [Access Date:12/12/2014]

<sup>651</sup> Treaty for the Prohibition of Nuclear Weapons in Latin America and the Caribbean (LANWFZ) (Tlatelolco Treaty) , <<http://www.nti.org/treaties-and-regimes/treaty-prohibition-nuclear-weapons-latin-america-and-caribbean-lanwfz-tlatelolco-treaty/>>, [Access Date:12/12/2014]

<sup>652</sup> Ibid.

<sup>653</sup> United Nations Office for Disarmament Affairs, “South Pacific Nuclear Free Zone Treaty”, Article 4, <<http://disarmament.un.org/treaties/t/rarotonga/text>>, [Access Date:12/12/2014]

(the Executive Committee) were established in order to ensure fulfillment of the obligations of this agreement.<sup>654</sup> Additionally, a control mechanism that coordinated with the IAEA Safeguard System was established to avoid violations.<sup>655</sup>

The Treaty of Pelindaba that constitutes the African Nuclear Weapon Free Zone (ANWFZ) was signed by 50 countries but 37 of them have not ratified it yet, and this treaty entered into force in 2009.<sup>656</sup> Pelindaba has similar conditions as the aforementioned treaties. The African Union is the depositary of this initiative.

After the collapse of the Soviet Union, newly founded Central Asian countries also established a NWFZ. This region closely witnessed the devastating effects of nuclear weapons. For instance, the Semipalatinsk site in Kazakhstan is a place where the harmful effects of nuclear testing can be clearly observed because the Soviet Union carried out its 459 nuclear tests in this area.<sup>657</sup>

In 1993, Uzbekistan proposed to be free of nuclear weapons from Central Asia. In 1997, countries of the region issued a declaration (Almaty Declaration) that announced their desire for the establishment of a NWFZ.<sup>658</sup> The Treaty on a Nuclear-Weapon-Free Zone in Central Asia (CANWFZ) opened for signature in September 2006, and came into force in March 2009. This treaty prohibits using, developing, manufacturing and testing of nuclear weapons or other nuclear explosives in the region. To meet the criteria set by the agency and to ensure cooperation with the IAEA, the agreement foresaw having other obligations.<sup>659</sup>

### **Other Proposals for Nuclear Weapon Free Zones**

There were several proposals for the creation of Nuclear Weapon Free Zones in the 1990s. Some of these proposals were carried out, such as the SEANWFZ, and

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<sup>654</sup> United Nations Office for Disarmament Affairs, "Treaty on the Southeast Asia Nuclear Weapon-Free Zone", <<http://disarmament.un.org/treaties/t/bangkok/text>>, [Access Date:12/12/2014]

<sup>655</sup> Ibid.

<sup>656</sup> United Nations Office for Disarmament Affairs, "African Nuclear Weapon Free Zone Treaty", <<http://disarmament.un.org/treaties/t/pelindaba>>, [Access Date:12/12/2014]

<sup>657</sup> Oluyemi Adeniji, "The Treaty of Pelindaba on the African Nuclear-Weapon-Free Zone", United Nations Institute for Disarmament Research, Geneva, Switzerland, 2002, p.24, <<http://www.unidir.org/files/publications/pdfs/the-treaty-of-pelindaba-on-the-african-nuclear-weapon-free-zone-297.pdf>>, [Access Date:12/12/2014]

<sup>658</sup> Ibid.

<sup>659</sup> United Nations Office for Disarmament Affairs, "Treaty on a Nuclear-Weapon-Free Zone in Central Asia", <<http://disarmament.un.org/treaties/t/canwfz/text>>, [Access Date:12/12/2014]

CANWFZ. In addition to these Mongolia's efforts had succeeded and Mongolia gained nuclear-weapon-free status in 1992.<sup>660</sup> The status of Mongolia was accepted by the nuclear weapons states in 2000.<sup>661</sup> Austria declared its nuclear weapon-free status through domestic laws in 1999.<sup>662</sup> There are also proposals for creating NWFZs that have not resulted in an agreement yet, such as one in the Korean Peninsula and another in the Middle East.

### **The Korean Peninsula**

In 1991, a joint declaration which aimed the denuclearization of the Korean Peninsula was signed by the North Korea and South Korea. This initiative which aimed to strengthen peace in the Korean Peninsula did not result in a permanent deal. North Korea's nuclear weapons are seen as obstacles to the strengthening of peace.<sup>663</sup>

As mentioned above, the Democratic People's Republic of Korea (North Korea) was officially withdrawn from the NPT in March 2003. Three years later, it announced its first nuclear test, and also, it does not exhibit a tendency to reduce its nuclear capacity. Therefore it is unarguable to say that the realization of this NWFZ proposal is impossible at least in the short term.

### **The Middle East**

In 1974, Egypt and Iran launched the initiative for the creation of a Middle East without nuclear weapons. Although Israel has not clearly stated that it has nuclear weapons, there is a general belief that Israel has nuclear weapons. Israel was skeptical

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<sup>660</sup> Mongolia declared its territory as a NWFZ in accordance with the principles of the United Nations regarding the creation of a NWFZ. These principles provide the opportunity for individual countries to declare a NWFZ. "...obligations relating to the establishment of nuclear-weapon-free zones may be assumed not only by groups of States, including entire continents or large geographical regions, but also by smaller groups of States and even by individual countries". Oluyemi Adeniji, "The Treaty of Pelindaba on the African Nuclear-Weapon-Free Zone", United Nations Institute for Disarmament Research (UNIDIR), Geneva, Switzerland, 2002, p.22, <<http://www.unidir.org/files/publications/pdfs/the-treaty-of-pelindaba-on-the-african-nuclear-weapon-free-zone-297.pdf>>, [Access Date:12/12/2014]

<sup>661</sup> Ibid.

<sup>662</sup> Nuclear Weapons Free Zones (NWFZ), Eric A. Croddy and James J. Wirtz (Editors), "Weapons of Mass Destruction: An Encyclopedia of Worldwide Policy, Technology, and History", Volume II: Nuclear Weapons (James J. Wirtz, Editor), Oxford, England, 2005, p.265

<sup>663</sup> Ibid.

about this initiative and refrained from supporting it.<sup>664</sup> There are also several problems which complicate achieving an agreement; for instance, Israel is not a party to the NPT, and its nuclear ambiguity policy prevents the creation of a NWFZ.<sup>665</sup> Israel is skeptical about nuclear-related activities (especially Syria's and Iran's nuclear activities) in the region, but Israel argues that a more secure and peaceful Middle East is possible if it can have a successful process of dialogue between the countries of the region.<sup>666</sup> The League of Arab States expanded its studies on a NWFZ, and tried to reach a draft on a WMDFZ (Weapon of Mass Destruction Free Zone). In 2003, a conference was organized by the Arab League States in order to create a WMDFZ,<sup>667</sup> yet these activities have not reached a final agreement or a final proposal.

### **Nuclear Weapon Free Geographical Regions**

Some specific geographical regions were denuclearized by multilateral agreements. These agreements are as follows in chronological order.

#### **The Antarctic Treaty**

In 1959, The Antarctic Treaty which was the first treaty to prohibit nuclear weapons from a region, opened for signature. This treaty has aimed to protect all areas south of the latitude 60°S. According to the parties to this treaty *“Antarctica shall continue to be used exclusively for peaceful purposes and shall not become the scene or object of international discord.”*<sup>668</sup>

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<sup>664</sup> Ibid. p.23, For details about Nuclear Program of Israel, See: Yoel Cohen, “Whistleblowers and the Bomb: Vanunu, Israel and Nuclear Secrecy”, Pluto Press, London, 2005(Second Edition), and Yair Evron, “Israel’s Nuclear Dilemma”, Routledge, London, 1994.

<sup>665</sup> Ibid.

<sup>666</sup>, Response by the State of Israel, “The Secretary-General report: Establishment of a nuclear-weapon-free zone in the region of the Middle East”, Permanent Mission of Israel to the United States, United Nations Office for Disarmament Affairs, <[https://unoda-web.s3.amazonaws.com/wp-content/uploads/2013/10/Israel\\_Submission\\_Est\\_of\\_ME\\_NWFZ\\_3OCT2013.pdf](https://unoda-web.s3.amazonaws.com/wp-content/uploads/2013/10/Israel_Submission_Est_of_ME_NWFZ_3OCT2013.pdf)>, [Access Date:12/12/2014]

<sup>667</sup> Michael Hamel-Green, “Regional Initiatives on Nuclear-and WMD-Free Zones: Cooperative Approaches to Arms Control and Non-Proliferation”, United Nations Institute for Disarmament Research (UNIDIR), Geneva, Switzerland, 2005, p.17, <<http://www.unidir.org/files/publications/pdfs/regional-initiatives-on-nuclear-and-wmd-free-zones-cooperative-approaches-to-arms-control-and-non-proliferation-286.pdf>>, [Access Date:12/12/2014]

<sup>668</sup> Nuclear Weapons Free Zones (NWFZ), Eric A. Croddy and James J. Wirtz (Editors), “Weapons of Mass Destruction: An Encyclopedia of Worldwide Policy, Technology, and History”, Volume II: Nuclear Weapons (James J. Wirtz, Editor), Oxford, England, 2005, p.266

### **The Outer Space Treaty (1967)**

The Outer Space Treaty has limited people's space activities for peaceful purposes. According to this treaty, space is common the heritage of humanity, and it must be closed to military deployments.<sup>669</sup> The scope of this treaty includes the Moon and Other Celestial Bodies. The Outer Space Treaty “...prohibits placing nuclear weapons in orbit around Earth, installing or testing these weapons on the Moon and other celestial bodies as well as stationing these weapons in outer space in any other manner.”<sup>670</sup>

The 1979 Moon Treaty has constituted a further step in order to protect space, but the approval process of this treaty has not been completed.<sup>671</sup>

### **The Seabed Treaty**

The Seabed Treaty (the official name of this treaty is Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Seabed and the Ocean Floor and in the Subsoil Thereof) was signed in 1971 and entered into force in 1972. This treaty aims to prevent a nuclear arms race in the mentioned place. The first article of the treaty imposes these obligations to the parties:

... undertake not to emplant or emplace on the seabed and the ocean floor and in the subsoil thereof beyond the outer limit of a seabed zone, as defined in article II, any nuclear weapons or any other types of weapons of mass destruction as well as structures, launching installations or any other facilities specifically designed for storing, testing or using such weapons.<sup>672</sup>

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<sup>669</sup> Ibid. p.272

<sup>670</sup>United Nations Office for Disarmament Affairs, Nuclear-Weapon-Free Areas, <<http://www.un.org/disarmament/WMD/Nuclear/pdf/NWFZ-postcard-2010.pdf>>, [Access Date: 12/12/2014]

<sup>671</sup> Eric A. Croddy and James J. Wirtz, op. cit. p.272

<sup>672</sup> Ibid. p.497





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