

Role of scientific workers on constructing world peace: Their social responsibility

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Abstract

The US Bush administration and its alliance, addicted to war, have recklessly been attacking Iraq and killing innocent citizens. They are even seeking its preemptive attack with use of nuclear weapons as an option. Who can raise "No to Bush" calls? We believe the UN's power to solve the ongoing question. Not only that, but we also place high value on a scientific workers' movement for a total ban of nuclear and other arsenal. The Constitution of the World Federation of Scientific Workers (WFSW) states "With their professional training and outlook, scientific, engineering and technical workers understand the nature of the problems facing humanity and the best methods of solving them. The WFSW appealed to scientists to transcend political, religious and other differences and form a united front for the total abolition of the greatest threat to humanity and for solutions to global social economic and ecological problems." Accordingly, all the scientific workers must realize the thinking "the absolute view of life" (all human beings have the rights for equal opportunity to exist without discrimination in political, economical or social relations because of race, creed, sex, social status or family origin). Therefore, we urge warlike nations to immediately stop conducting an imperialistic invasion by using heavy arsenal, depleted uranium bombs and handy nuclear weapons, and we then urge so-called death-merchants not to produce arsenal to kill people and not to sell them to the poor. Next, we ask all the scientific workers not to study, help and plan arsenal's development and war operations, and ask all the governments and the people not to conduct a military education, especially in "war academy". Also, we urge all the governments to decrease their military expenditures and transfer them to people's development.

All the disputes could absolutely be solved on the dialog basis. We must stress the presence of science and scientific workers which could contribute to the world peace construction by wisely and cooperatively solving such tough problems. Japan's scientific workers are letting "war-renouncing constitution" (*Article 9* of the Constitution of Japan) know to the world, and developing a grass-roots movement against military base and war, especially nuclear war, which is a new beginning of the movement towards a world peace march free of nuclear weapons or war.

1. Distribution of "war-renunciation constitution" to the world

Let's think of what is the most scientific approach to contribute to the peaceful world construction. It is to develop a peaceful mind on the basis of "the absolute view of life", which leads to the thought of

war-renunciation. The most urgent task is therefore to distribute “war-renouncing constitution” to the world in cooperation with citizens.

In World War II, weapons of mass destruction, including atomic bombs dropped on Hiroshima and Nagasaki, left more than 50 million people dead, from which we have learned that the use of force must not be an option to settle any international dispute, which has recently been proven in Afghanistan and Iraq. Accepting the great responsibility for its war aggression, Japan established the Constitution with *Article 9* providing that Japan renounces war and will not maintain war potential, and resolved to realize the desire for peace of the people of the world. Costa Rica followed Japan. In order to strongly progress the world cultural resources in the 21st century based on the lessons from the previous century, the importance of *Article 9* as the foundation of the peoples’ diplomacy becomes clear than ever. We stand firmly for *Article 9* of the Constitution, develop friendship and cooperation with the nations in Asia and the rest of the world, and change away from a foreign policy that gives the military alliance with the US priority in order that Japan will become more independent in actually taking part in making a new world history. We have to remember that only in the presence of *Article 9* we can carry out a peaceful diplomacy and economic, cultural, scientific and technical cooperation by respecting the others’ position.

On the other hand, arguing the need to change Japan’s basic status, the Liberal Democratic Party (LDP) in its election platform (for the House of Counselors’ election on July 11) called for eliminating *Article 9* from the Constitution. On June 8, the JDP General Council reconfirmed that the ruling party will draft a new constitution in 2005, defining that the Self-Defense Forces are a national force to be able to make international contributions and that Japan may exercise the right of collective self-defense. Their intention is to really make Japan a war-fighting nation. As one of two countries that firmly describe “war renunciation” in the Constitution, we must practically defend the word and soon distribute it to the world. Moving towards a peaceful Japan and world in the very near future, we call on everyone to unite to defend the Constitution and begin now to make every effort to stop the attempt to eliminate *Article 9* and to revise the Constitution. The important phrase for “war renunciation” in Japan and Costa Rica are as follows.

<Preamble of the Constitution of Japan (1946)>

We, the Japanese people, desire peace for all time and are deeply conscious of the high ideas controlling human relationship, and we have determined to preserve our security and existence, trusting in justice and faith of the peace-loving peoples of the world. We desire to occupy an honored place in an international society striving for the preservation of peace, and the banishment of tyranny and slavery, oppression and intolerance for all time from the earth. We recognize that all people of the world have the right to live in peace, free from fear and want.

<Article 9 (Chapter II: Renunciation of war) of the Constitution of Japan (1946)>

1) Aspiring sincerely to an international peace based on justice and order, the Japanese people forever renounce war as a sovereign right of the nation and the threat or use of force as means of settling international disputes. 2) In order accomplish the aim of the preceding paragraph, land, sea, and air forces, as well as other war potential, will never be maintained. The right of belligerency of the state will not be recognized.

<Article 12 of the Constitution of Costa Rica (1948)>

The army as a permanent institution is abolished. There shall be the necessary police forces for surveillance and the preservation of the public order. Military forces may only be organized under a continental agreement or for the national defense; in either case, they shall always be subordinate to the civil power: they may not deliberate or make statement or representations individually or collectively.

The contents in the above Articles are strongly supported by the following constitutional phrases. We must at first understand what they want to say at this moment to the world as well as to the own country. Realizing all the phrases, every dispute national and international could become solved on the dialog basis. The related descriptions are shown as follows.

<Preamble to the Constitution of France (1946)>

- The French Republic, faithful to its traditions, shall conform to the rules of international public law. It shall undertake no war aimed at conquest, nor shall it ever employ force against the freedom of any people.
- Subject to reciprocity, France shall consent to the limitation upon its sovereignty necessary to the organization and preservation of peace.

<Article 12 of the Declaration of the Human Rights of France (1789)>

To guarantee the Rights of Man and of the Citizen a public force is necessary; this force is therefore established for the benefit of all, and not for the particular use of those to whom it is entrusted.

<Article 26 (Ban on preparing a war of aggression) of the Constitution of Germany (1949)>

- (1) Acts tending to and undertaken with intent to disturb the peaceful relations between nations, especially to prepare war or aggression, are unconstitutional. They have to be made a criminal offence.
- (2) Weapons designed for warfare may not be manufactures, transported, or marketed except with the permission of the Government. Details are regulated by a federal statute.

<Article 7 (International Relation) of the Constitution of Portugal (1976)>

- (1) In its international relations, Portugal is governed by the principles of national independence, respect for human rights, the right of peoples to self-determination and independence, equality among States, the peaceful settlement of international disputes, non-interference in the internal affairs of other States, and co-operation with all other peoples for the emancipation and progress of mankind.
- (2) Portugal advocates the abolition of all forms of imperialism, colonialism, and aggression, simultaneous and controlled general disarmament, the dissolution of politico-military blocs, and the setting up of a collective security system, with a view to the creation of an international order capable of safeguarding peace and justice in the relations among peoples.
- (3) Portugal recognizes the right of peoples to revolt against all forms of oppression, in particular colonialism and imperialism.

<Article 11 (Repudiation of War) of the Constitution of Italy (1948)>

Italy repudiates war as an instrument offending the liberty of the peoples and as a means for settling international disputes; it agrees to limitations of sovereignty where they are necessary to allow for a legal system of peace and justice between nations, provided the principle of reciprocity is guaranteed; it promotes and encourages international organizations furthering such ends.

<Article II (Declaration of Principles and States Policy) of the Philippine Constitution (1987)>

Section 2. The Philippines renounces war as an instrument of national policy, adopts a generally accepted principle of the international law as part of the law of the land and adheres to the policy of peace, equality, justice, freedom, cooperation and amenity with all the nations.

<Article 5 (War, Armed Forces) of the Constitution of the Republic of Korea (1948)>

- (1) The Republic of Korea endeavors to maintain international peace and renounces all aggressive wars.
- (2) The Armed Forces are charged with the sacred mission of national security and the defense of the land and their political neutrality must be maintained.

2. Elimination of nuclear weapons

Actual approach to construct a peace world is to extensively develop a grass-roots movement against war, especially nuclear war. In Japan, for instance, Bikini Day, every March 1, provides a new beginning of the movement toward a world free of nuclear weapons or war. The last March 1 marked the 50th anniversary of a Japanese fishing boat along with many islanders being showered with radioactive fall-out from a US hydrogen bomb test explosion at Bikini Atoll in 1954. The Japan Council against A and H Bombs (*Gensui-kyo*) together with trade unions and various peace organizations held rallies to commemorate Bikini Day from which the Japanese Movement against Atomic and Hydrogen Bombs started 50 years ago. The US hydrogen bomb tests caused serious radioactive contamination to residents of the Marshall Islands as well as Japanese fishing boats in the seas which were supposed to be outside danger zone. Mr. Kuboyama, crew member of the “Dai-go Fukuryu-maru” (Lucky Dragon No. 5), died, fish disappeared from people’s meals, and threats of nuclear weapons increased, which gave rise to a major signature campaign throughout the country calling for atomic and hydrogen bombs to be prohibited. In 1955, the first World Conference against A and H Bombs was held, which was followed by the establishment of *Gensui-kyo*. Its movement has since contributed to heightening public awareness of the need to abolish nuclear weapons and to making the demand a steady mainstream in international politics. Thus the March 1 Bikini Day has become a day of special importance for the peace movement of Japan, only A-bombed country, and for the world.

The US Bush administration is recklessly carrying out its preemptive attack strategy with the use of nuclear weapons as an option, and the Japanese government is more subservient than ever to the US. It therefore be determined to make the 50th anniversary of the Bikini tragedy a new beginning toward building a peaceful 21st century without wars or nuclear weapons. In the war of aggression against Iraq, the US

used many Tomahawk missiles, depleted uranium and cluster bombs to overpower the Iraqi regime and gain a so-called victory. However, Mr. Bush now finds himself in a difficult position, unable to convincingly explain how it can justify the Iraq war in the first place. In January's address, Mr. Bush tried to justify the war by stating that Iraq's weapons of mass destruction program had been thwarted by the military action, but the US investigators revealed that it had not existed in Iraq, showing that the US maintains its policy of preemptively attacking another country on the pretext of preventing the proliferation of mass destruction weapons by piling up lie after lie, while it maintains its own enormous nuclear weapons. This is nothing less than a lawless act that destroys the peaceful world order.

In the face of increasing danger of the imminent use of nuclear weapons; "No to Bush" calls are spreading more extensively than ever. In the world, some 30,000 nuclear warheads are stockpiled in 2002, many of which belong to the USA and Russia (Table 1). Moreover, the USA deploys own nuclear weapons in Europe in the name of the military alliance (Table 2). The UN General Assembly in December 2003 therefore adopted nuclear disarmament resolutions, including one calling for the elimination of nuclear weapons by 133-6, and another calling for a reduction of non-strategic nuclear arsenal, by 128-4. Given the fact that NATO has 19 member countries, these numbers suggest how isolated the US Bush administration is, although they still accept the US's nuclear arsenal in some member countries.

Just 50 years ago, the 1st World Conference against A and H Bombs called for a ban on nuclear weapons and warned of the danger that Japan might be involved in a nuclear war. Nevertheless, the present Koizumi cabinet has dispatched the Self-Defense Forces to a war zone for the first time since the end of World War II, and promised an mutual cooperation with the US (its alliance: multinational force) in its war of aggression in Iraq. It also allows the US military bases in Japan to be fortifies as stepping stones for the US preemptive attack strategy that involves the possible use of nuclear weapons. As the people of A-bombed Japan which has its war-renouncing *Article 9* of the Constitution, we must give full play to our movement against nuclear weapons and for peace, which has great international importance.

Next year marks the 60th anniversary of the Atomic bombings of Hiroshima and Nagasaki. In May next year, signatories to the Nuclear Non-Proliferation Treaty will hold a review conference. Many of them are urging nuclear weapons' countries to fulfill their promise to eliminate their nuclear arsenal. The World Conference against A and H Bombs last year launched a major worldwide signature collection campaign to eliminate nuclear weapons now in order to make the year 2005 a turning point for this goal. In preparation for the NPT review conference, mayors of Hiroshima and Nagasaki, and other cities participating in the World Conference of Mayors for Peace through Inter-City Solidarity are calling for a start of talks aimed at totally banning nuclear weapons.

This year's Bikini Day surely provided a starting point for the effort to develop our movement toward the 2004 World Conference against A and H Bombs, the JSA (Japan Scientists' Association) scientists' meeting against A and H bombs, and the 60th anniversary of the A-bombing of Hiroshima and Nagasaki in 2005. It gave people throughout Japan an opportunity to bring their anti-nuclear and anti-SDF dispatch activities from their communities, place of work, and schools, and to discuss and interact with each other.

3. Activation of the international scientific workers' movement

In this sense, we must thoroughly review our international activity, in which how much we have contributed to the action for a total ban of nuclear and other arsenal. For instance, the New Constitution of the World Federation of Scientific Workers (WFSW) (adopted on October 7, 1989) states in the preamble as follows.

“With their professional training and outlook, scientific, engineering and technical workers understand the nature of the problems facing humanity and the best methods of solving them. This is why the World Federation of Scientific Workers, with the outstanding scientists and public figures J.D. Bernal and F. Joliot-Curie as its creators and first leaders, advocated from its very foundation in 1946 that scientists should recognize their social responsibilities. It called on the scientific community to wage an active struggle at a national and international level for science to be used only for peaceful purposes, for humanity's benefit.

The WFSW appealed to scientists to transcend political, religious and other differences and form a united front for the total abolition of the greatest threat to humanity and solutions to global social economic and ecological problems.

The WFSW considers that the only way to prevent the annihilation of human civilization resulting from the abuse of science is first of all to totally abolish nuclear weapons and to reject war as a tool of national politics. Therefore, the WFSW favors collaboration with all organizations working for peace and disarmament. Its task is not just to encourage scientists, engineers and technicians to oppose the treat of war. It seeks to inform the world of the possible consequences of using nuclear weapons, and of the danger of extending the arms race into space. It also supplies information on possible ways of solving the problems which arise in connection with disarmament and arms conversion. Scientists and technologists have to work towards the inescapable social obligation of non-violence in a world free of nuclear weapons.

The WFSW considers that for the scientific community to fulfill the obligations stemming from an appreciation of its social responsibilities, it needs the best conditions for the free development of science. Elaboration, planning and implementation of science policies on national and international levels should be carried out in the interests of the people and with the full participation of scientists through their trade union, social and professional organizations.”

All the scientific workers must actually realize the WFSW's Constitution so that we can contribute to constructing a peaceful world. We must note that although the anti-nuclear movements have extensively been conducted for 50 years, we could not accomplish our purpose and we could not press the nuclear weapons' study and production by a number of scientific workers all of the world. Our effort therefore continues to the last.

4. Extreme cut down of military expenditures

We have to realize a large quantity of military expenditures, under which countless lives are thrown away every day. Since the origination of human history, a number of wars have repeatedly been recorded. Even the moment, a so-called US-allied force has occupied Iraq and pressed the public. It is however said

that any war inevitably exists in the world, only where one can develop different science and scientific technology necessary for the public, and finally any war gives stabilization to the public. This consideration, that is that of the exploiting class, is absolutely wrong. As far as the exploiting class continues to conduct a war, innocent people belonging to the exploited class must always be killed. We here realize that the worldwide class struggle can solve this question.

We must overcome the existence of “class”, where the public at one side (the exploited: more than 99.99 % of the world population) should inevitably be discriminated and the other side (the exploiting class) be made alive. Under the concept “Absolute View of Life” (all the public are absolutely and equally made alive), we develop a new frontier for constructing a peace world; any war and battle can not produce permanent stabilization of the world, and only mutual understanding by using enthusiastic discussion and dialog result in a total satisfaction over sex, history, locality and property. Here we confirm that all people in the world can live safe and peace is basic for “richness”; it is not obtained only by having large amount of property, living in a convenient zone, keeping a certain rank in a office, and/or developing a new technology and creating science. Primarily necessary is to construct a peace world. It has been pointed out that the world environment is in crisis. We must recognize that the most destructive is to conduct a war. All science and scientific technology should focus on a war to end in the presence of scientific workers’ movement in cooperation with citizens, which necessarily realizes the world in the absence of any war.

Therefore a disarmament discussion should immediately be carried out in the presence of the public. Table 3 shows the military expenditures, GDP and budget (mostly in 2002) in 170 countries including regions. The world GDP is calculated to roughly be \$49,000 billion and the sum of the military expenditures listed in Table is estimated to be \$980 billion, showing that about 2% of the world GDP was thrown away. The amount of \$980 billion corresponds roughly to the total amount of revenues from (027) Poland to (169) Sao Tome and Principe (131 countries/170 countries), the total amount of expenditures from (029) Norway to (169) Sao Tome and Principe (129/170), and the total amount of GDP from (095) Estonia to (169) Sao Tome and Principe (75/170), respectively. The amount of the military expenditures listed in Table also corresponds to that of the ordinary expenditures of China and Japan.

A large amount of the military expenditures to be meaninglessly thrown away must not be treated lightly, which is necessarily accompanied by inevitably conducting a war. We should not conduct such a stupid policy anymore from the viewpoint of realizing social justice basing on the absolute view of life.

5. Challenge for constructing a lasting peace

Through the worldwide scientific movements, using real scientific power, we have solve two types of crisis (acute crisis: war, and chronic is environment). Both are the target for the class struggle. In the present article, the author touches upon the acute crisis, while the chronic crisis will be discussed elsewhere. Urging all the governments to widely cut down the military expenditures is really scientific approach to constructing peace. We must realize our enormous power to decrease them and then eliminate all the arsenal from the world. We promptly adopt the thought of the absolute view of life to political and

economical determination: all human beings have the rights for equal opportunity to exist without discrimination in political, economical or social relations because of race, creed, sex, social status or family origin, under which they can enjoy democratic and security life.

The most important and urgent demands are the followings:

- 1) To urge the US and its alliances to stop conducting the imperialistic invasion by using heavy arsenal, depleted uranium bombs and handy nuclear weapons,
- 2) To urge so-called death-merchant supported by the exploiting class not to produce arsenals to kill people and not to sell them to developing countries,
- 3) To ask all the scientific workers not to study, help and plan arsenal's development and war operations, and
- 4) To ask all the governments and the peoples not to conduct military education especially in "war academy", in which they teach how to discriminate and kill people.

Since all the disputes could absolutely be solved on the dialog basis, we should not welcome any violent devices to settle in the future, no more. No matter what one claims, this is principally scientific for constructing a peace world, which is only one option we should choose now and in the future.

The WFSW, for instance, should organize a world peace movement at first, which is quite responsible for carrying out own business according to the WFSW Constitution. We must realize that any scientific research and education do not exist under the war threat. Accordingly only one thing we can tackle with other organizations is to prevent the annihilation of humanization resulting from the abuse of scientific technology, and therefore to totally abolish nuclear and other heavy arsenal, and to reject war as a tool of national politics. When we could not realize the WFSW Constitution to say the least of it, the "reason of being (la raison d'être)" of scientific workers' organization such as the WFSW would extremely be decreased. However, it is clear that we can make the future world stabilize through scientific movement-directing policy in respective country. Should we have any difficulty right now, we must soon construct a new front for a worldwide scientific movement to necessarily contribute to making a peace world in the future.

Next year, we meet the 60th anniversary of A-bombing of Hiroshima and Nagasaki and the 60th anniversary of the termination of world war. As scientific workers, we have to construct a new front for peace movement to show our social responsibility. At first we have to make a front against 1) any imperialistic invasion and colonization, 2) arms' research and development, international trade, and usage, and 3) most importantly nuclear weapons' development and usage. Let us realize a peaceful world as fast as possible.

Table 1. Nuclear Warheads Stockpiled (2002)¹⁾

Country	Intact ²⁾	Operational ³⁾	Strategic ⁴⁾	Tactic ⁵⁾
Russia	17,800 ⁶⁾ 18,600	7,800 ⁶⁾	4,400 ⁶⁾	3,400 ⁶⁾
USA	10,000 ⁶⁾ 10,800	7,000 ⁶⁾	5,886 ⁶⁾	1,120 ⁶⁾
China	400			
France	350			
United Kingdom	200			
Israel	(200) ⁷⁾			
Pakistan	24-48			
India	30-35			

1) Bulletin of the Atomic Scientists: NRDC Nuclear Notebook

2) Total intact warheads

3) Operational (ready to use) warheads

4) Strategic warheads

5) Non-strategic (tactic) warheads

6) Data (2004)

7) *de facto*

Table 2. US nuclear weapons deployed in Europe¹⁾

Location	Warheads
Kleine Brogel Airbase, Belgium	20
Buchel Airbase, Germany	20
Ramstein Airbase, Germany	130
Aviano Airbase, Italy	50
Ghedi Airbase, Italy	40
Volkel Airbase, Netherlands	20
Incirlik Airbase, Turkey	90
RAF Lakenheath, Britain	110
Total	480

¹⁾ Bulletin of the Atomic Scientists: NRDC Nuclear Notebook (2004)

Table 3. Military expenditures, GDP and budget in 170 countries and regions in 2004

Country/Region	ME ¹⁾	GDP ²⁾	Revenues ³⁾	Expenditures ³⁾
001 USA	267.700000	10,450.0000	1,946.0000	2,052.0000
002 China	55.910000	5,989.0000	224.8000	267.1000
003 France	46.500000	1,558.0000	286.0000	330.0000
004 Japan	39.520000	3,651.0000	441.0000	718.0000
005 Germany	38.800000	2,160.0000	802.0000	825.0000
006 UK	31.700000	1,528.0000	565.0000	540.0000
007 Italy	20.200000	1,455.0000	504.0000	517.0000
008 Saudi Arabia	18.300000	268.9000	46.0000	56.5000
009 Brazil	13.408000	1,376.0000	100.6000	91.6000
010 South Korea	13.094000	941.5000	118.1000	95.7000
011 India	11.520000	2,664.0000	48.3000	78.2000
012 Australia	11.390000	525.5000	86.8000	84.1000
013 Iran	9.700000	458.3000	29.0000	31.6000
014 Israel	8.970000	117.4000	38.5000	45.1000
015 Spain	8.600000	850.7000	105.0000	109.0000
016 Turkey	8.100000	489.7000	42,4000	69.1000
017 Canada	7.861000	934.1000	178.6000	161.4000
018 (Taiwan)	7.574000	406.0000	36.0000	36.1000
019 Netherlands	6.500000	437.8000	134.0000	134.0000
020 Greece	6.120000	203.3000	45.0000	47.6000
021 North Korea	5.217400	22.2600		
022 Singapore	4.470000	112.4000	27.9000	19.5000
023 Sweden	4.395000	230.7000	119.0000	110.0000
024 Argentina	4.300000	403.8000	44.0000	48.0000
025 Egypt	4.040000	289.8000	21.5000	26.2000
026 Mexico	4.000000	924.4000	136.8000	140.0000
027 Poland	3.500000	373.2000	49.6000	52.3000
028 Colombia	3.300000	251.6000	24.0000	25.6000
029 Norway	3.113000	149.1000	71.7000	57.6000
030 Belgium	3.077000	299.7000	113.4000	106.0000
031 Pakistan	2.964000	295.3000	12.6000	14.8000
032 Switzerland	2.548000	233.4000	30.0000	30.0000
033 Chile	2.500000	156.1000	17.0000	17.0000
034 Denmark	2.470000	155.3000	52.9000	51.3000

035 Oman	2.424000	22.4000	6.2000	6.9000
036 Kuwait	1.967000	36.8500	11.0000	17.5000
037 Algeria	1.870000	173.8000	20.3000	18.8000
038 Finland	1.800000	133.8000	36.1000	31.0000
039 Thailand	1.775000	445.8000	19.0000	21.0000
040 South Africa	1.746000	427.7000	22.6000	24.7000
041 Malaysia	1.690000	198.4000	20.3000	27.2000
042 UAE	1.600000	53.9700	20.0000	22.0000
043 Austria	1.497000	227.7000	53.0000	54.0000
044 Morocco	1.400000	121.8000	13.8000	14.6000
045 Iraq	1.300000	58.0000		
046 Libya	1.300000	33.3600	13.7000	8.6000
047 Portugal	1.286000	195.2000	45.0000	48.0000
048 Czech Rep	1.190200	157.1000	16.7000	18.0000
049 Hungary	1.080000	134.0000	13.0000	14.4000
050 Indonesia	1.000000	714.2000	26.0000	30.0000
051 Peru	1.000000	138.8000	10.4000	10.4000
052 Philippines	0.995000	379.7000	10.9000	15.0000
053 Romania	0.985000	169.3000	11.7000	12.4000
054 Venezuela	0.934000	131.7000	21.5000	27.0000
055 Syria	0.858000	63.4800	6.0000	7.0000
056 Ethiopia	0.800000	48.5300	1.8000	1.9000
057 Jordan	0.757500	22.6300	2.7000	3.0000
058 Qatar	0.723000	15.9100	5.0000	5.5000
059 Ecuador	0.720000	42.6500	5.6000	5.6000
060 Sri Lanka	0.719000	73.7000	2.8000	4.1000
061 Ireland	0.700000	113.7000	30.7000	30.5000
062 Serbia & Montenegro	0.654000	23.1500	3.9000	4.3000
063 Vietnam	0.650000	183.8000	5.3000	5.6000
064 Zimbabwe	0.625100	26.0700	2.5000	2.6000
065 Ukraine	0.617900	218.0000	10.2000	11.1000
066 New Zealand	0.605700	78.4000	29.2000	31.2000
067 Sudan	0.581000	52.9000	1.6000	1.9000
068 Bangladesh	0.559000	238.2000	4.9000	6.8000
069 Lebanon	0.541000	17.6100	3.1000	5.9000
070 Bahrain	0.526200	9.9100	1.8000	2.2000
071 Afghanistan	0.525200	19.0000	0.2000	0.5000

072 Croatia	0.520000	43.1200	8.6000	9.0000
073 Yemen	0.482500	15.0700	3.0000	3.1000
074 Mali	0.419700	9.7750	0.7640	0.8280
075 Nigeria	0.417900	112.5000	3.4000	3.6000
076 Slovakia	0.406000	67.3400	5.2000	5.6000
077 Cyprus	0.384000	9.2970	4.4000	3.7000
078 Slovenia	0.370000	37.0000	8.1100	8.3200
079 Bulgaria	0.356000	49.2300	5.5700	5.6800
080 Tunisia	0.356000	67.1300	5.2000	5.7000
081 Brunei*	0.329700	6.5000	2.5000	2.6000
082 D. Rep. Congo	0.250000	34.0000	0.2690	0.2440
083 Uruguay	0.250000	26.8200	3.7000	4.6000
084 Bosnia & Herzegovia	0.234300	7.3000	1.9000	2.2000
085 Lithuania	0.230800	30.0800	1.5900	1.7700
086 Angola	0.222700	18.3600	0.9280	2.5000
087 Kazakhstan	0.221800	120.0000	4.2000	5.1000
088 Botswana	0.207300	13.4800	2.3000	2.4000
089 Macedonia*	0.200000	10.5700	1.1300	1.0200
090 Uzbekistan	0.200000	66.0600	4.0000	4.1000
091 New Caledonia	0.192300	3.0000	0.8613	0.7353
092 Kenya	0.185200	32.8900	2.9100	2.9700
093 Dominican Rep.	0.180000	53.7800	2.9000	3.2000
094 Belarus	0.176100	90.1900	4.0000	4.1000
095 Estonia	0.155000	15.5200	1.8900	1.8900
096 Guinea	0.154000	18.6900	0.3957	0.4724
097 Luxembourg	0.147800	21.9400	5.5000	5.5000
098 Bolivia	0.147000	21.1500	4.0000	4.0000
099 Cote d'Ivoire	0.143500	24.0300	1.7200	2.4000
100 Armenia	0.135000	12.1300	0.4020	0.4820
101 Panama	0.128000	18.0600	1.9000	2.0000
102 Paraguay	0.125000	25.1900	1.3000	2.0000
103 Uganda	0.124700	30.4900	0.9690	1.0400
104 Azerbaijan	0.121000	28.6100	0.7860	0.8070
105 Guatemala	0.120000	53.2000	2.3000	2.7000
106 Cameroon	0.118600	26.8400	2.2000	2.1000
107 Cambodia	0.112000	20.4200	0.3960	0.6070
108 El Salvador	0.112000	23.4100	2.1000	2.5000

109 Eritrea	0.095750	3.3000	0.2064	0.6157
110 Trinidad & Tobago	0.090000	11.0700	1.5400	1.6000
111 Turkmenistan	0.090000	31.3400	0.5886	0.6582
112 Latvia	0.087000	20.9900	2.4000	2.6000
113 Rep. Congo	0.084000	2.5000	0.8700	0.9700
114 Gabon	0.081900	8.3540	1.8000	1.8000
115 Benin	0.080800	7.3800	0.3774	0.5618
116 Namibia	0.073100	13.1500	0.8830	0.9500
117 Costa Rica*	0.069000	32.0000	1.9100	2.3500
118 Senegal	0.068600	15.6400	1.3730	1.3730
119 Malta	0.060000	6.8180	1.5000	1.6000
120 Rwanda	0.059570	8.9200	0.1993	0.4450
121 Nepal	0.057220	37.3200	0.6650	1.1000
122 Albania	0.056500	15.6900	0.6970	1.5000
123 Laos	0.055000	10.4000	0.2110	0.4620
124 Madagascar	0.052300	12.5900	0.5530	0.7350
125 Haiti	0.050000	10.6000	0.2730	0.3610
126 Burkina Faso	0.045830	14.5100	0.3160	
127 Burundi	0.042130	3.1460	0.1250	0.1760
128 Chad	0.040740	9.2970	0.1980	0.2180
129 Papua New Guinea	0.040210	10.8600	0.8940	1.1000
130 Fiji	0.039210	4.8220	0.4279	0.5314
131 Burma	0.039000	73.6900	7.9000	12.200
132 Mauritania	0.037110	4.8910	0.4210	0.3780
133 Ghana	0.036010	41.2500	1.6030	1.9750
134 Tajikistan	0.035400	8.4760	0.5020	0.5200
135 Mozambique	0.035100	19.5200	0.3931	1.0250
136 Honduras	0.035000	16.2900	0.6070	0.4119
137 Maldives	0.034460	1.2500	0.2240	0.2820
138 Lesotho	0.034000	5.1060	0.0760	0.0800
139 Zambia	0.033460	8.2400	1.2000	1.2500
140 Equatorial Guinea	0.030000	1.2700	0.2000	0.1580
141 Jamaica	0.030000	10.0800	2.2300	2.5600
142 Djibouti	0.026530	0.6190	0.1350	0.1820
143 Nicaragua	0.026000	11.1600	0.7260	0.9080
144 Togo	0.023720	7.5940	0.2320	0.2520
145 Mongolia	0.023100	5.0600	0.2860	0.4270

146 Georgia	0.023000	16.0500	0.4990	0.5540
147 Niger	0.020540	8.7130	0.3200	0.3200
148 The Bahamas	0.020000	4.5900	0.9185	0.9565
149 Swaziland	0.020000	5.5420	0.4480	0.5069
150 Tanzania	0.019680	20.4200	1.0100	1.3800
151 Kyrgyzstan	0.019200	13.8800	0.2074	0.2387
152 Somalia	0.017100	4.2700		
153 Central African Rep.	0.013430	4.2960		
154 Malawi	0.013010	6.8110	0.4900	0.5230
155 Seychelles	0.012800	0.6260	0.2490	0.2620
156 Sierra Leone	0.010260	2.8260	0.0960	0.3510
157 Mauritius	0.009712	12.1500	1.1000	1.2000
158 Bhutan	0.009300	2.7000	0.1460	0.1530
159 Cape Verde	0.009300	0.6000	0.1120	0.1980
160 Liberia	0.007800	3.1160	0.0854	0.0905
161 Belize	0.007700	1.2800	0.2240	0.2090
162 Moldova	0.006400	11.5100	0.5360	0.5940
163 Comoros	0.006000	0.4410	0.0276	
164 Guinea-Bissau	0.005600	0.9014		
165 East Timor	0.004400	0.4400	0.0360	0.0970
166 Bermuda	0.004028	2.2500	0.6095	0.5746
167 The Gambia	0.001200	2.5280	0.0905	0.0809
168 San Marino	0.000700	0.9400	0.4000	0.4000
169 Sao Tome & Principe	0.000400	0.2000	0.0580	0.1140
170 <Russia>		1,409.0000	70.0000	

1) Military expenditures – billion dollar figure (mostly in 2002)

2) GDP – billion dollar figure in 2002

3) Budget – billion dollar figure (mostly in 2002)

4) Costa Rica* has no military, only domestic police forces including the coast guard and air station

Data: CIA – The World Factbook (on a website)