Islamic countries stretch from the South East Asia to West Asia and Central Asia in the Asian Continent and from East to West Africa and North Africa in the African Continent and parts of Europe. The Climate of most of Asian Countries is arid and semi arid and land area is experiencing desertification in most of the cases. Agricultural and livestock potential is therefore highly vulnerable to climate change. In addition Islamic countries located along the coastal areas and Small Island states like Maldives are threatened by the sea level rise due to melting of glaciers. Depending primarily on agricultural and livestock related livelihoods activities, Islamic countries are highly vulnerable to fluctuations in rainfall and droughts induced by the climate change.

Islamic world is broadly categorized into humid, arid and semi arid zones. Some countries like Malaysia, Indonesia and Bangladesh receives rainfall more than 3000 mm/annum fall in the tropical humid zone. Other like Pakistan, Iran, Turkey, Egypt, Iraq, Ghana, Guinea, Malawi, Morocco and Tunisia lies in the semi arid zone with rainfall in between 500 to 1500 mm/annum. Whereas, other countries like Oman, Saudi Arabia, UAE (Abu Dhabi), Libya, Sudan, Syria, Bahrain and Yemen lies in arid zone receiving less than 500 mm annual precipitation and therefore these countries do not possess sufficient water even for drinking.

Water is the major vulnerability in the Middle East and North Africa, the world's driest region, where per capita water availability is predicted to halve by 2050 even without the effects of climate change. The region has few practical options for increasing water storage capacities, since almost 90 percent of its freshwater resources are already stored in reservoirs. The increased water scarcity combined with greater variability in precipitation will threaten agriculture, which accounts for about 85 percent of the region's water use. Vulnerability is compounded by a heavy concentration of population and economic activity in food- prone coastal zones and by social and political tensions that resource scarcity could heighten. (World Development Report 2010).

Sub- Saharan Africa suffers from natural fragility (two- thirds of its surface area is desert or dry land) and high exposure to droughts and foods, which are forecasted to increase with further climate change. The region's economies are highly dependent on natural resources and biomass provides 80 percent of the domestic primary energy supply. Rain-fed agriculture contributes up to 30 percent of GDP and employs about 70 percent of the population. Inadequate infrastructure could hamper adaptation efforts, with limited water storage despite abundant resources. However, it has already been assessed that trees serve as mini tanks for storing thousands of cusecs of water and regulate its release in the atmosphere through transpiration.

Islamic countries of South Asia suffers from an already stressed and largely degraded natural resource base resulting from geography coupled with high levels of poverty and population density. Water resources are likely to be affected by climate change, through its effect on the monsoon, which provides 70 percent of annual precipitation in a four- month period, and on the melting of Himalayan glaciers. Rising sea levels are a dire concern in the region, which has long and densely populated coastlines, agricultural plains threatened by saltwater intrusion, and many low-lying islands.

The world disasters statistics show that floods caused 50% of the world disasters during 1990-2001. Asia and Africa faced 35% and 29% of these disasters respectively, where almost half of the world's Muslim population lives. This shows increased exposure of the Muslim world to natural disasters. It has been observed during the past couple of years that the frequency of natural disasters like floods, droughts and cyclones has greatly increased. It is argued that global warming is the primary underlying cause of these disasters.

The OIC members have a combined GDP of US $ 4378.2 billion (for the year 2008), however only 10 member countries accounts for 74% of the total GDP and 76% of the total exports. The highest GDP in OIC belongs to Turkey with a GDP exceeding USD 900 billion. The average per capita GDP was US $ 3019 during 2008. The richest country on the basis of GDP per capita is Qatar at USD62, 181 per capita. Most of the Islamic countries do not possess major industrial base, however the Oil Producing and Exporting Countries (OPEC) do possess crude oil and refinery industries. Analysis of the economic indicators show that on an average for six years (2002-2007), services sector constituted 49.7%, manufacturing (Industry) 38.4% and Agriculture only 11.6% of the GDP in OIC countries. Growth in developing countries stood at 6.7% in 2008. Mixed nature of economies of OIC member states reflects high level of heterogeneity and divergence in economic structure and performance. Out of the total 50 least developed countries of the world 22 are OIC member States. On the other hand economies, development and prosperity of 17 OIC member states are primarily dependent on oil and gas export.

During 2007, the average merchandize export of OIC countries stood at US $ 1356 billion, which accounted for 21.8 % of the total merchandize exports of the developing countries. The total imports of OIC countries stood at US $ 1207 billion during 2007, which accounted for 20.3% of the total import by the developing countries. The World Bank Report (2008) has classified 26 OIC member states as low income countries and 25 are middle income countries, whereas only six OIC member states are classified as high income countries. According to the IMF classification, 11 OIC countries are classified as non-oil exporting primary production economies and 17 are classified as oil exporting economies. Thus compared to the developed countries and the fact that the Islamic Countries do not possess high industrial base, the share of Islamic countries in global warming is negligible.

On the basis of per capita electricity consumption, the economies of Islamic countries could be divided into three main gases; Poor, Moderate and Stable economies. The optimum level of per capita/annum electricity consumption is 500Wh/capita/year. Islamic countries with less than 300 Wh/capita/year; like Somalia, Afghanistan, Bangladesh, etc. have poor economies. Those falling in between 400 to 1200 Wh/capita/year like Algeria, Morocco, Pakistan, Tunisia, Kyrgyzstan and Egypt are moderate economies. Saudi Arabia, Libya, Albania, Turkey, Kazakhstan, Tajikistan and Iran are stable economies as they consume above 1200 Wh/capita/year and close to the world average of 2100 Wh/capita/annum.

The need to protect environment and other basic resources on which our civilization depends is the most urgent imperative. Climate change, deforestation,

air and water pollution, loss of bio-diversity and habitat, land degradation, water scarcity of fresh water resources and other environmental problems are mainly a result of unsound human behaviours and practices. Increase in population and economic activities continuously add new threats to environment in the absence of sound policies for sustainable development and due to inadequate capacities. In view of the major challenges being faced by the Islamic world in the field of sustainable development, a General Framework of Islamic Agenda for Sustainable Development was adopted by the First Islamic Conference of Environment Ministers held in Jeddah in 2002. This agenda was subsequently adopted by the World Summit for Sustainable Development held in Johannesburg in August 2002 as a background document, keeping in view the Islamic countries point of view. In view of the emergence of new challenges as well as aggravating condition for environment degradation and enhanced needs to step up efforts for sustainable development, each Session of the Islamic Ministerial Conference updated its commitments for sustainable development under the Agenda.

This General Framework of Islamic Agenda for Sustainable Development serves as a beacon for action by the Islamic Ummah, comprising actions in view of Islamic approach which calls for maintaining man's dignity and fulfilling lieutenancy on earth through good deeds, which are corner stone for sustainable development and preservation of natural resources. The Islamic Agenda adopts comprehensive approaches towards its commitment to sustainable development, fostering the efforts for peace and security, combating illiteracy, poverty and unemployment, improving the level of health, developing education services, supporting participation of women and youth in sustainable development, enlarging scope of democracy, preserving and rationalizing water resources, preserving biodiversity, controlling desertification, updating and enforcing special legislation.

Threat to human life is increasing day by day due to aggravating environment situation and climate change resulting from increased economic activities and new requirements of increasing population. Increase of green emissions at current rates will soon expose the whole planet to extreme temperatures never witnessed in the past. The Islamic countries, most of which never contributed to such deteriorating environmental conditions, but are already suffering of its impact and climate change repercussions, will be exposed to further dangers if appropriate actions are not taken and sound policies are not adopted collectively by the Islamic countries to protect the future generations. From scarcity of fresh water to increased vulnerability to natural disasters, from degrading ecological conditions to loss of biodiversity, from increase in hunger to new threat to agriculture and live stocks, etc pose major threats to economies as well as to human life. Protection of human life is collective responsibility.

Islamic Executive Bureau for Environment, entrusted with responsibilities to propose Islamic strategies and urgent plans as well as follow up actions in the light of Islamic Agenda, various recommendations and resolutions of the Conference, promotes sustainable development and preserve both living and non-living resources for the coming generations, ensuring environmental

complementarities without deteriorating the component of ecosystem and undermining their equilibrium. A comprehensive Islamic Environment Action Programme is, therefore, proposed here addressing various compelling problems being faced by the Islamic countries. The Action programme will come in force upon its approval of the Executive Board and a report on its implementation will be submitted at each session of the Islamic Conference of Environment Ministers.

Under the Islamic Environment Action Programme efforts will be done to improve scientific knowledge and understanding of sustainable management of the environment aiming to develop appropriate institutional mechanisms and infrastructure, well-trained human resources as well as easy access to the relevant information. Various forums of scientists, resource managers and conservationists will be organized to devote special attention to the pressing problems. Networks among universities, environmental institutions will also be established to exchange experiences. By the same token, cooperation with international organizations will be fostered to ensure follow-up action on international conventions on sustainable management of the environment. Continuous training of the staff concerned with the environment management in the utilization of new techniques and methodologies will be provided through organization of training courses and workshops.

In view of the Resolution-ICEM-3/2008/R2.2 of the Third Session of the Islamic Conference of Environment Ministers, focus will remain on raising awareness on environmental issues and stimulate the local community organizations and bodies active in the field of environment protection to collectively work towards preservation of environment. Industries will be encouraged to improve the environment performance through publicizing their voluntary initiatives. The international agenda for sustainable environment management will be implemented through joint collaboration. The objective will be to promote the conservation and management of the ecosystem through promoting training of the relevant manpower and exchanging knowledge and information on various important issues. Awareness-raising through national programmes will be encouraged by facilitating access to the required information. Awareness-raising will continue among all segments of society to maintain healthy natural surroundings through preparation and dissemination of high quality publications on sustainable environment, media campaigns, lectures, exhibitions, scientific camps and museums, etc. Digital and on-line means will be utilized to raise awareness of environmental concerns among all segments of society.

Nature has bestowed Islamic countries with rich resources but most of this potential is still unexploited due to the lack of management and institutional policies, adequate expertise and necessary technical know-how. Sustainable utilization of natural resources will be encouraged to derive long term economic benefits for their peoples without compromising the ability of future generations to meet their own needs and enjoy the same quality of living in a sound environment. National policies and legislations in support of ecotourism activities in biosphere reserves and natural parks will be enhanced by providing the required support for their implementation.

Biodiversity, which plays a critical role in overall sustainable development, is essential to our planet as well as to the well-being of peoples. In order to minimize the loss in biodiversity due to human activity, efforts will be made to promote "the Convention of Biological Diversity" and encourage collaborate with international organizations with a view to achieving the goals of significant reduction. Loss of biodiversity will be minimized through capacity building measures focusing on research and awareness-raising.

Measures to control land, water and air pollution will be taken under the Islamic Environment Action Programme to ensure a cleaner environment. Attention will be devoted to the environment problems such as deforestation, desertification, degradation of coastal areas, land degradation, dumping of wastes, environmentally harmful products and obsolete technologies, etc. Degradation of air, water and soil which affect all aspects of life, resulting in soil erosion, climatic changes and the degradation of the eco-systems, constitutes an ever-increasing threat. Cross-cutting actions will be introduced through providing technologies for affordable sanitation and industrial and domestic wastewater treatment, mitigating the effects of ground water contamination and supporting the setting-up of monitoring systems at the national level.

Various areas, which needs separate attention in the Islamic countries, will be dealt in separate categories and special attention will be accorded to ameliorate situation. These areas and actions therein are defined in the following sections:

Section One:

Climate Change and its Impact on Islamic Countries

Human-induced climate change is one of the preoccupying problems being faced by the international community at present. The speed of change in climate is unprecedented which is threatening social, economic and environmental systems that cannot adjust at the same pace. Change in hydrological cycle and scarcity of water resources is likely to induce forced mass migration and make many parts of this world uninhabitable. Affect on agriculture due to further drying of arid and sub humid areas will deepen the food crises for many of the world's poorest and most vulnerable people. A small fraction of global temperature rise can lead to enormous loss of biodiversity resulting in extinction of 20% to 30% plant and animal species. Tropical forests are continuing to disappear at an alarming rate. During the last decade, the rate of deforestation averaged about 13 million hectares a year, of which some 6 million hectares were primary forest. A small rise of sea levels could wreak havoc for tens or even hundreds of millions of people. Islamic countries, with less technical, economic and institutional capacity to adapt, are likely to find it hardest to cope. The citizens of the Islamic countries from Sudan to Bangladesh have done virtually nothing to pollute the environment, but are bearing the worst impacts of floods and droughts.

Measures to reduce the extent of global warming are crucial. Various resolutions adopted at the United Nations Climate Change Conference which took place in Copenhagen, Denmark, between 7 December and 18 December 2009, to mitigate the impact of climate change, as well as other international resolutions adopted at various Islamic Summits and conferences, Earth Summit, held in Rio de Janerio, Brazil, 1992, the Kyoto Protocol to the UN Framework Convention on Climate Change, Agenda 21 of World Summit on Sustainable Development, UN Climate Change Conference held in Bali, Indonesia in December 2007, Tunis Declaration on Climate Change etc. as well as various international reports, projects and programmes are crucial for implementation and mitigating the impact of human activity on environment. However, as being observed there is much to do in order to prepare us to take this challenge seriously and adapt ourselves to changes. There is need to promote further knowledge on climate change and its economic and social impacts, to accord priority for fulfilment of international commitments, to trace financial resources, to promote adequate technical knowledge and skill along with suitable technologies, to strengthen national institutional capacity, to enhance networking and collaboration for joint activities at regional and sub regional levels.

Adoption of appropriate means to face up the Climatic Changes has become an emergency for all the countries and requires setting up of an adequate

institutional framework to boost scientific research, prevention and awareness in addition to the intervention on the national and regional levels to guarantee an efficient participation of all the components of the civil society.

The United Nations Climate Change Conference held in Copenhagen in December 2009 recognizes the scientific view that an increase in global temperature below 2 degrees is required to stave off the worst effects of climate change. The Conference concluded with an agreement by countries to cap the global temperature rise by committing to significant emission reductions, and to raise finance to initiate action in the developing world to deal with climate change. The developed countries were being urged to keep warming below the dangerous 2C mark, by cutting of 23-40% by 2020, relative to 1990 levels, leading to 80-95% by 2050. The accord specified that industrialised countries will commit to implement, individually or jointly, quantified economy-wide emissions targets from 2020, to be listed in the accord before 31 January 2010. A number of developing countries, including major emerging economies, agreed to communicate their efforts to limit greenhouse gas emissions every two years, also listing their voluntary pledges before the 31 January 2010. Heads of State and Government also intend to unleash prompt action on mitigation, adaptation, finance, technology, reducing emissions from deforestation in developing countries and capacity-building. To this effect, they intend to establish the .Copenhagen Green Climate Fund. to support immediate action on climate change. The collective commitment towards the fund by developed countries over the next three years will approach 30 billion US dollars. For long-term finance, developed countries agreed to support a goal of jointly mobilizing 100 billion dollars a year by 2020 to address the needs of developing countries. In order to step up action on the development and transfer of technology, governments intend to establish a new technology mechanism to accelerate development and transfer in support of action on adaptation and mitigation

Though, the failure of world leaders in Copenhagen to come to terms with the climate change crisis as per expectation will have its repercussions, binding pressures built on various categories of countries, or relaxations granted in other cases were more defended then mutual to work together seriously to mitigate the impact of climate change. Developed countries were required to pay the price specially to build the global clean technology infrastructure essential to staunching carbon emission, from power plants, buildings and transport. Developing countries wanted to continue the Kyoto Protocol, the first international agreement on tackling climate change, stipulates that developed countries, due to heavy industrialization, contributes to most green house gases emissions, must act first to curb emissions, giving time for developing countries to grow their economies and raise their peoples' living standards, a top down approach which also places clear responsibilities for its own emissions, whereas industrialized countries were keen on new approach where each nation takes responsibility for its own emissions. Developing countries wanted money to be distributed by the UN where they are better represented. Developed countries preferred the World Bank and other institutions where they wield more power. In the convention Islamic countries, individually tried to protect their stakes, but

faced extreme difficulties to voice their approaches or get adequate support in favour of their explanations. The member states of the Organization of the Islamic Conference constitute the world's largest grouping, second to the United Nations. They consist of all developing countries dependent on either agricultural activities or extracting oil and natural gas. International binding protocols will place a big burden on them and affect their economic performances. The citizens of the Islamic countries from Sudan to Bangladesh have done virtually nothing to pollute the environment, but are bearing the worst impacts of floods and droughts and are bounded by same terms as specified for other countries contributing high to green house gases emissions. Islamic countries may be allowed emissions in order to allow their citizen out of poverty to improve their lives before limiting their emission. Developing consensus among the Islamic countries on such international agenda is collective responsibility and the Islamic Executive Bureau for Environment may recommend to the Islamic countries to work towards developing consensus on such international issues so as to have combined voice at such international forum. A joint Islamic action mechanism will help to muster support and strengthen negotiation stance in relation to climate change.

Under the Islamic Environment Action Programme capacity of the Islamic countries to adapt to climate change will be examined through discussing the current environment situation and future prospective. Actions will be taken to develop institutional and administrative structures for climate change institutions, particularly in the field of adaptation at the national, regional and Islamic levels. Manners to preserve surface and underground water resources, essential for continuity of social and economic activity, from adverse effects of climate change is necessary to be evaluated. Impact of climate change on biodiversity, desertification and deterioration of lands, impact on marine and coastal environment as well as on general health needs more attention. Countering and responding to the effects of this serious phenomenon, particularly in the economic and social fields, requires taking further interest in all dimensions of sustainable development, to ensure the development of necessary measures to counter such effects in the Islamic countries.

In order to focus attention on the mitigation and response techniques to climate change effective ways will be designed under the Islamic Environment Action Programme to benefit actively from the KP's and the Clean Development Mechanism. Social and economic impacts of climate change on the Islamic Countries will be elaborated in order to device actions on how to benefit from the clauses of financial support specified in Kyoto Protocol and CDM. Assistance from the developed countries and aid organizations, at both bilateral and multilateral levels, will be sought through adopting effective police to allow them to extend generous support both technical and financial, to vulnerable countries in drafting sustainable strategies to cope with impeding dangers and allowing them to implement concrete mitigation and adjustment projects and plans. Vulnerability of the economies of Islamic Countries and financial policies to climate-related changes will be discussed and a joint action mechanism will be adopted in order to consolidate climate change negotiations. Sustainable development solutions will address the problems of poverty, hunger and under

development as these problems intensify the impact of and vulnerabilities to environmental risks for many under developed Islamic countries mainly due to lack of their adaptive capacities.

Islam gives message of peace and sane use of all the resources bestowed to the human beings. In the Holy Quran , various verses clearly stated "And do no mischief on the earth after it has been set in order" (A'raf : 56), and on another place it is stated "And make not your hands contribute to your own destruction" (Buqara : 195). The Bureau may encourage measures to propagate Islamic teaching in the Islamic countries and provide people with knowledge and insights to enable them to make responsible choices when it comes to behaviour and lifestyles in consistence with sustainable development.

Under the Islamic Environment Action Programme climate change impact on Islamic countries will be addressed and a joint action strategy will be adopted to influence international actors, national authorities and civil society, to facilitate follow-up actions and implementation of the resolution adopted in previous Islamic Conferences on climate change as well as in the light of international commitments. The Bureau may call for more accurate modelling scenarios at a regional and national level, particularly for the predicted hydrological impacts to better estimate and monitor the scale and timing of climate change impacts. Member States will be called for to accord priority to international commitments as well as those emanated from various Conferences and Summits, design effective, measurable, and internationally verifiable national mitigation and adaptation policies, strengthen institutional capacities, adapt appropriate knowledge and skills to absorb advance technologies through training and capacity building to adequately deal with adverse effects associated with climate change. The developed countries will be urged to undertake and meet their mitigation commitments in accordance with the principle of Common but differentiated Responsibilities, and phasing out of substances that deplete the ozone layer and institute deeper cuts in such emissions. Joint action will be taken to involve developed countries to establish new mechanisms to materialise the principles of international solidarity, and contribute in financing development, pointing out the commitment of international organisations, governments, NGOs and research institutions to support developing countries in carrying out adaptation and mitigation measures, in order to counter the effects of climate change. Technical cooperation will be developed and promoted through generalising specialized technical programmes aiming to exchange knowledge and expertise on the new technologies to asses impeding catastrophes and early warning systems. Development of the carbon market will be supported in both developing and least developed countries; and clear policies may be adopted to improve land use, and reduce deforestation and forest degradation as a source of greenhouse gas emissions.

Under the Islamic Environment Action Programme measures will be taken to counter the increasing risks, particularly in the fields of water resources, desertification, drought, marine and coastal environment and health. Islamic countries will be asked to enhance their efforts for improving water resources

knowledge by continuous observations and measurements in order to assess water resources and their evolution under physical and climate changes using the most developed information technologies. Technical materials may be prepared to introduce new techniques and ideas about international programs used to adapt and mitigate the problem of green house gases and its impacts on rainfall and its seasonal and geographical distributions. Efforts will be enhanced in order to build efficient institutional capacities, qualitatively and quantitatively, at all levels (national, regional and international) through strengthen existing specialized national climate change research and study centers, establishing regional network and implementing research, management and technology capability building programmes.

The Bureau may recommend establishing a High Level Working Group of the climate change experts from the Islamic countries to follow up the latest developments and international negotiation in the fields of climate change, working closely on various approaches under the United Nations Framework Convention on Climate Change, to enhance action on mitigation, benefiting from the collective commitment by the developed countries, and especially Copenhagen Green Climate Fund, and to prepare for adequate presentation of Islamic countries collective vision in the upcoming Climate Change Conference in n Mexico in November-December 2010.

Section Two:

Water Issues Facing the Islamic Countries

Water is one of the most vital commodities which nature has bestowed upon mankind for its survival, continuity and progress. Islam clearly emphasizes the importance of water as a source of live on the planet. Integrated Management of water resources in Islamic countries is full of challenges. Depletion of fresh water resources and other issues related to water like pollution, disease, aquatic life, poverty and hunger require immediate attention of the relevant authorities as it is affecting the well-being of millions of the poor people. Rapidly growing populations, urbanization, agricultural intensification and climate change all contribute to greater competition and scarcity of water resources. Despite massively increased provision of water facilities over the past few decades and the development of low cost, sustainable technical solutions to many aspects of water provision, millions still suffer from water-related diseases and the physical, social and economic burdens associated with scarcity. Water scarcity and deterioration of water quality in most of the Islamic countries is not only hampering their socio-economic development process but also threatening their very existence especially due to its relations with other critical factors like poverty, food and nutrition and health. This water deficit in Islamic countries is expected to enhance many times in the next decade. Increase in water pollution is causing a lethal threat to human as well as aquatic life and it is a major cause of concern for the Islamic countries especially in the African region. Water tables have already dropped dramatically and readily available water resources will be exhausted within the next 20 years unless consumption of fresh water is economized. It is necessary that we develop sustainable solutions through the promotion of integrated management of water resources and take all precautionary measures to protect the biosphere A number of international initiatives aim to tackle this global problem through improving the governance of water and setting targets for provision of supplies to increased numbers of people within the general context of poverty alleviation and environmental sustainability. New initiatives may be considered by the Islamic Environment Bureau Effective in the light of recommendations adopted in different session of the Islamic Conference of Environment Minister to enhance water management in the Islamic countries.

A Strategy for Management of Water Resources was prepared in consultation with the representative water experts from the Member States, which was endorsed by the Islamic Summit held in Malaysia. Under the Islamic Environment Action Programme most of the programmes will be implemented in the light of the Implementation Mechanism of the approved Strategy for Management of Water Resources to strengthen institutional capacities, and

enhancing knowledge and skills, to identify key methodologies, processes, and actions that are necessary to the implementation of a large number of efficient and environmentally sound water management activities. Vital water issues like water pollution, poverty and diseases, flood control, threat to aquatic life, water conflicts among Member States will also be addressed. Management practices and tools will be promoted in such a way as to manage water resources more effectively and to address water scarcity issues.

In the light of the Resolution ICEM-3/2008/R2.3 of the Third Islamic Conference of Environment Ministers, attention will be focused under the Islamic Environment Action Programme on enhancing cooperation with water institutions, centres, researchers and authorities through joint actions and share experiences in order to improve sustainable and integrated management of water resources. Knowledge and skills will be enhanced through water education, training and vast dissemination of water resource management informative material. Promotion of effective practices and new technologies in water purification will be promoted through the use of online services. Conservation practices and control of the water losses will remain a part of the action scheduled. Attention will be focused on the rural communities as well. Vital water issues like water pollution, poverty and diseases, flood control, threat to aquatic life, water conflicts among Member States will be also addressed through interdisciplinary approaches.

The capacities of the Member States will be build through strengthening knowledge base of decision makers and practitioners in water resource management, and organizing conferences, seminars and symposiums on the policies used in this field. Institutional capacities will be built up through provision of technical help and supporting research activities. Policy guidelines on better management will be prepared and disseminated. Use of new technologies in water management like desalination and purification of water will be promoted through organization of training programmes and workshops and publication of manuals. Data on the conservation of ground water resources will be collected, compiled and made available to water management community. Effective practices and new technologies in water purification will be promoted through establishing on-line information. Establishment of networks of the relevant water institutes in the Member States will be supported to better benefit from each other experiences. Under this programme attention will also focus on both of groundwater and surface water basins and scientists and researches will be supported by providing new technologies used to monitor water budget in shared water basins. Applications of the Islamic legislation about water use, rights and obligations between shared countries. Using new mathematical models under this program will help in clarifying the future visions and scenarios for optimize water management between shared countries. This program will give the guide for new projects can carried out by cooperation between shared countries to added contribution to the water budget.

Under the Islamic Environment Action Programme scientists and researches may also be encourages to improve technologies used to mitigate the problem of climate changes. Research may be promoted to observe adverse

impacts on water resources especially changes of flood regime, salt water intrusion through groundwater aquifer in coastal areas due to the rise in sea level. New technologies will be introduced to improve water efficiency in irrigation and cleaner production in industry. Desertification will be combated and the effect of drought will be mitigate through such measures as improved use of climate and weather information and forecasts, early warning systems, land and natural resource management, agricultural practices and ecosystem conservation to minimize land degradation. State-of-the-art studies will be prepared and published on water issues and technologies. Multimedia material on new water technologies will also be prepared and disseminated widely to promote the use of new and economic technologies. Action under cross-cutting thematic areas like poverty, desertification control, water related diseases, conservation of aquatic life, biodiversity, which are inter-related with under other relevant programmes will be utilized to develop synergy under these actions.

The surge in water demand, especially for agricultural purposes, has fuelled tension among communities, countries and regions. Joint meetings of water experts and concerned authorities will be organized to promote understanding and harmony on water issues to reduce and solve such conflicts through better management of water resources. Action will be launched to create a sound environment through networking among water experts and launching joint programmes at regional and international levels to enable them to work together and share wise practices in sustainable development and to exchange knowledge, experience and human resources to build local capacities. Effective Management of water resources is an intricate process, which requires comprehensive joint initiatives from various sources. Cooperation and collaboration will, therefore, be further strengthened through networking among water institutes and bodies in the Member States

Recognizing the serious threat to water resources in the Islamic World and necessity to initiate effective measures, the Thirty-Sixth Session of the Islamic Council of Foreign Ministers, held in Damascus, Arab Syrian Republic in May 2009, recommended establishment of the "Islamic Council for Water Resources" within the framework of the Islamic Conference of Environment Ministers (Resolution No.4/36-S&T on Environment Matters). The Islamic Bureau may consider its formal establishment to be announced in the upcoming Fourth Session of the Islamic Conference of Environment Ministers (ICEM-4).

Section Three:

Protecting Marine Resources

Oceans, seas, islands and coastal zones are critical for sustainable economic prosperity. Most of the Islamic countries lie on shores and, therefore, sustainable use of ocean resources and exploitation offers immense economic benefits especially to the off-shore communities. The situation at present is not in favour of sustainable development. On one hand the potential which oceans have, are not utilized properly, whereas on the other hand, mismanaged economic activities due to lack of coordination, data, planning and management expertise have resulted in spoiling its resources. Further such miss use of the ocean and shores is continuously adding polluting to the marine environment. At the same time, concerns about the environment consequences of over exploitations of marine resources are being reported highly dangerous. Polluted water and sediment quality are by far the most threatening pollution issues affecting our marine and coastal environments. Land-based pollution is affecting ecological processes public health and social and commercial use of marine resources. Some pollutants, like Oil and litter are highly visible, but others such as toxic chemicals and radioactive materials are invisible. Among the sources of pollution are the discharge of untreated and partially treated sewage to the sea and beaches. These discharges contain human waste, domestic cleaning products, industrial effluents, oil and run off from road system. Oil pollution, from every day use, which enters the marine environment via storm drains, is a far greater contribution than accidents involving oil tankers. The amount of plastic washed up on our beaches indicates that large amounts of rubbish are being illegally dumped in the sea and on the beach. Plastic does not degrade easily and can float great distance, and are particularly dangerous to marine species, killing sharks, dolphins, whales and turtles. The effect of radioactive waste on the environment is an issue of great concern. The radioactive substances bio-accumulate in marine food chains with potentially harmful effects on marine and human life. Marine pollution is a wide spread problem especially in Islamic countries and cannot be tackled through piecemeal legislation on a country to country base. There is necessity to adopt a collective approach, by involvement of all governments to take appropriate actions to protect our marine resources.

Under the guidance of the Islamic Environment Bureau, the Islamic Environment Action Programme will adopt policies and programmes for sustainable use of marine resources. Efforts will be done to support the sustainable development and assessment of oceans resources by improving the scientific knowledge and understanding and promoting the use of new tools. Measures will be taken to develop knowledge on physical, chemical, biological, geological, geophysical and engineering aspects of the sustainable development of ocean resources and protection of marine environment. Conservation and

management of fisheries resources, shore monitoring and use of sea for economic benefits will be strengthened. Information and knowledge will be enhanced through training activities, workshops and wide dissemination of useful material like reports, studies, proceedings and provision of information-based websites. Capacities will be built to tackle ocean disaster and shore pollution problems. Assistance will be provided in ocean data and information collection, information networking and exchange of experiences.

Marine institution capacities will be strengthened under the Islamic Environment Action Programme through the provision of support to marine resource exploration, utilization and sustainable development of living marine resources like conventional and non-conventional fisheries resources, mangrove forests, coral reefs, aquaculture etc. Capacities of the Member States will be built in management of oceans and coastal environment through provision of training in data, GIS application and processing. Marine resource appraisal will be promoted through publication of useful material like reports, studies, proceedings and disseminating them among the Member States.

Lack of coordination, data, planning and management expertise are some of the major weaknesses. Further the miss use of the ocean and shores has continuously polluted the marine environment. Efforts will be exerted in management of marine environment and safeguarding ocean resources of the Islamic world under its Natural Resource Development Programme to improve the situation. Joint work will be initiated in close coordination with other international organizations and bodies to address a wide range of marine issues. Introduction of new techniques to the off-shore communities offer new benefits to the shore communities and thus help in the alleviation of poverty. Policies and actions promoting the beneficial and long-term sustainable use of ocean resources management will be supported through promotion of latest knowledge and integrating skill and expertise in the management stadd.

Marine pollution is one of the great concerns due to the deterioration of conditions in mostly commercial coastal regions. Action will be taken to tackle shore pollution problems through the provision of scientific and technical guides to the Member States to enable them to devise appropriate policies and management projects. Investigation into the causes and impact of marine pollution and development of appropriate management methods and practices will be executed by bringing together leading international experts to develop internationally agreed-on strategies. Vital concerns on marine pollution, the problems and real risks involved will be projected through organization of conferences, seminars and other events. Bio-toxins and anthropogenic contaminants, chemical of emerging concern in the marine environment, will be examines and detected thorough scientific evaluation of their toxicity and ecological risks to marine environment. Collaboration and interaction among marine institute scientists, researchers and resources managers, will be strengthened through expanding the virtual thematic groups.

The unprecedented impacts likely to occur from climate change represent serious concern that will increase the challenge of sustainable management of marine resources as well. Establishing a dynamic system at both national and

regional levels for assessment of coastal vulnerability to climate change will be needed. Under the framework of its Agenda for Sustainable Development studies and surveys will be conducted on likely impacts of climate change on coastal and marine environment and the risks imposed on infrastructures, natural resources, biodiversity, and other socioeconomic aspects. Trainings programmes will be conducted on approaches and methodologies currently used in vulnerability assessment of coastal and marine environment.

In view of the urgent need for sustainable management of marine resources and protection of marine environment, the Islamic Bureau may consider preparation of "Marine Resources Protection and Management Plan" for the Islamic Countries. This plan may be drafted by the leading marine scientists and researchers in the light of existing successful model in other regions, adopted by the general consensus of all Islamic countries and enforces under the direct supervision of the Islamic Bureau and the Islamic Conference of Environment Ministers.

Section Four:

Combating Natural Disasters in the Islamic Countries

Natural Disasters, like floods, landslides, drought, windstorms, hurricanes, volcanic eruptions, earth quacks, etc. cause million of deaths, destroying important infrastructure, displacement of huge population, and gross economic loses each year. Developing countries, especially those in the African regions, with their weak economies and with inadequately infrastructure, lack of information, skills and capabilities, remain more vulnerable to such losses which aggravate their already depilating survival.

Natural disasters are unavoidable, but their consequences-which turn a hazard into a disaster-need not be. The governments in the Islamic countries, due to their vulnerabilities to such natural catastrophes, must pay high attention to their shortcomings and prepare themselves to avoid natural disasters leading to humanitarian crises. Must develop systems integrating new technologies adequately in the management of natural catastrophes and disasters programmes and facilitate rapid transfer and access to information through their communication systems. A small group of experts, who can asses the risks and advice on advance planning procedures, the effects of many potential disasters can be mitigated. Regions and nations may also not be left in isolation to deal with such crises. At the Islamic Ummah level it is necessary to develop an Islamic Disaster Response System to manage natural disaster mitigation, relief and prevention efforts. Such a system should come immediately in force and extend the best expertise, help and assistance to deal with any natural disaster occurring in any part of Ummah. Common monitoring facilities may be developed through adequately utilization of earth observation, communications and other space technologies and early warning systems. Space-based technologies such as earth observation satellites, meteorological satellites, telecommunication satellites and global navigation satellite systems play an important role in dealing with urgencies, risk reduction and disaster management. Space technologies provide important and useful early warning information to communities that are highly vulnerable to natural disasters. Better utilization of such technologies help to build capacities.

Due to colossal incidents and inabilities of the affected countries to cope with natural disaster, the Islamic Conference of Environment Ministers approved an action plan on "Disaster Management in Islamic Countries" to enhance the capacities of the Member States to better cope with natural disaster. Under the Islamic Environment Action Programme this programme will be strengthened to promote a coherent and holistic approach to disaster management, with an increased emphasis on risk-reduction and management. Early warning capabilities will be promoted through the provision of technical information,

supporting establishment of early warning systems, and strengthening and upgrading national systems. Cross-cutting action will be taken between disaster reduction activities as well as socio-economic and humanitarian fields. Knowledge, innovation and education on disaster management will be promoted to build a culture of safety and resilience at all levels. Capacity building in disaster management may be further strengthened through focusing on training aspects and effective use of advanced scientific knowledge and techniques to promote prevention actions and encourage disaster preparedness. Regional and national networking will be strengthened to support disaster prevention and preparedness measures. The enhancement and use of scientific and indigenous knowledge for protecting the population habitat, livelihood and culture heritage from natural disasters will be pursued through education and public awareness-raising campaigns on disaster reduction. Formal and non-formal education will also be encouraged to make it an instrument for disaster prevention. Information and public awareness-raising on measures plays an important role to reduce risks from natural hazards, As such integration and better utilization of ICTs for such purposes will be promoted.

Under the Islamic Environment Action Programme necessary initiatives will be taken to review national mechanisms, arrangements and current project initiatives for disaster management and risk reduction. Gaps will be identify in current national measures for disaster planning, and preparedness at the national level to better prepare for disaster risk management and to provide necessary tools and methodologies for building disaster risk management capacities, and clearer articulation of competence and qualification standards. facilitating policies and projects on disaster risk management The concept of the disaster management will be integrated more firmly into sustainable human development at national and international levels;

It is necessary to draft a strategy for management of disaster in the Islamic countries so as to adopt a coherent approach to mitigate risks and damages. Appropriate guidelines and policy advice will be given to the Member States to enforce their commitment to disaster management, integrate into national policies and programme, and allocate sufficient resources in order to safe lives and livelihood threaten by natural disasters.

Models for a national disaster management structure, preparedness, plan and supporting legislation will also be promoted through publication of the relevant material. Technical advice will be provided to national institutions for post-disaster recovery and for disaster risk mitigation planning. An emergency relief fund may be established to support preparedness, response and recovery facilities to cope with environmental, technological and biological disasters in the Member States. Strong partnership will be facilitated between government agencies, the private sector, civil societies and organizations in order to establish effective preparedness plans to better cope with disaster management.

Adequate measures will be taken to build resilience to disaster by protecting ecosystems, stopping all action vulnerable to natural disaster, harnessing the capacity to withstand hazards like destroying forests and wetlands, building

public facilities and housing unable to withstand the impact of hazards, locating communities to highly hazard-prone areas.

Under the Islamic Environment Action Programme measures will be taken to further strengthen and upgrade the national early warning facilities and will provide the training necessary to enhance early warning capabilities and technical know-how to build national and regional warning systems through increased information. Technical assistance and equipment support to Member States will be provided to enable them to cope with natural disasters such as cyclones, floods, storms, earthquakes, soil erosion, landslides, drought, etc. Knowledge and understanding of the latest precautionary measure and technologies will be enhanced through publication of the relevant material. Focus will be laid on technologies like computer-based emergency warning and disaster damage reporting system, GIS based-information system of disaster management and relief data, web-based public information system. Synergy will be developed with international agencies to enhance collaboration in disaster prevention and reduction to allow an adequate response to disaster challenges.

Most of the casualties are results of unpreparedness of countries, unawareness of general public on precautionary measures and absence of expertise and facilities at the National and Islamic Ummah level to cope with such natural disasters. Training programmes will be launched to strengthen the capacities of the Member States to better manage and reduce disaster risk through effective preparedness, response, and post-disaster recovery, including linking disaster reduction to the process of sustainable development. Training courses and workshops will be offered to better evaluate and predict the natural hazards. The means required to reduce human loss and damage in various regions of the Islamic world will also be provided. Efforts will focus on enhancing the competencies and skills of relief workers and staff, as well as concerned government authorities. Awareness raising campaigns will be launched to improve local knowledge as well as on disaster management measures, and to conduct regular disaster preparedness exercises, including evacuation drills to enable people to become more resilient to natural disasters and to ensure rapid and effective disaster response. Focus will also be devoted to strengthen disaster risk reduction formal and non-formal education and community based disaster risk management programmes in order to develop a culture of prevention through changing attitudes and behaviours.

Recognizing that huge number of causalities occurs each time due to unexpected natural disasters and the unpreparedness or incapacities of a single country to deal sufficiently with catastrophic disaster, the Bureau may consider proposing a combined Emergency Force of the Islamic countries well equipped, adequately skilled and sufficiently funded to deal with any such human emergency situations in any part of the Islamic Ummah.

Section Five:

Promoting Energy Efficiency and Use of Renewable Energy Resources

Energy is a key factor in socio-economic development and in providing vital services that improve quality of life but uses of renewable sources of energy is the only way in achieving a sustainable and safe future for all. Large dependence on the use of fossil fuel and unsustainable practices have already caused major damages to environment as their combustion produce pollution, greenhouse gases, acid rain, global warming and climate change, resulting rise of sea level, an increase in the intensity of extreme weather events, and significant changes to the amount and pattern of precipitation. Other expected effects of climate change include changes in agricultural yields, modifications of trade routes, glacier retreat, species extinctions and increases in the ranges of disease vectors. To overcome these global effects, sustainable, clean and safe energy policies that would satisfy the energy demand needs to be implemented more seriously through sustainable management of the available sources of energy and promoting the use of new and renewable sources.

In order to support international agenda for sustainable development concerning renewable energy priority as well as to meet the burgeoning energy demands, Islamic Conference of Environment Ministers always placed emphasis on promotion of the utilization of renewable energy and recommended a number of programmes to enhance efficiency and increase reliance on new and renewable resources of energy. New policies, practices, trends, research and knowledge etc. were advised and an action plan to promote the utilization of renewable energy was adopted by the Third Session of Islamic Conference of Environment Ministers. This action plan needs to be pursued effectively and new programme should be recommended by the Environment Bureau from time to time to enhance efficiency and increase reliance on new and renewable resources of energy.

Solar energy is the only primary source that can be directly exploited at any place in the Islamic countries with zero carbon emission. One of the most attractive applications is the use of photovoltaic on buildings, which offers several advantages. When integrated into the fabric of a building, it can displace other material and replacing conventional building material, thus saving costs and energy consumption. Their uses need no extra land, and it generates at the point of use, thus reducing transmission losses. A huge potential in the Islamic countries is available to exploit wind energy for electricity generation in wind turbines. It is estimated that the total available wind resources globally and technically recoverable is 53,000 TWh/yr. Biomass fuel obtained

from purpose-grown energy crops as well as forests and agricultural waste can be used in power plants and it is very competitive in price and quality with fossil fuels.

Hydro energy has been used for electricity generation since long. Hydropower stations nowadays range from 1 MW capacity to 10,000 MW. Although small-scale plants exist in relatively large numbers, their overall contribution to the electricity supply is relatively low. Large hydropower plants have quite different characteristics to the pico and micro hydro schemes, despite similarities in the energy conversion scheme. The scale of the plant effects social, economic and environmental profile of the technology.

Other type of renewable energy resources including geothermal energy wave energy etc. have been tapped scarcely in the Islamic countries. The worldwide geothermal energy resource base is approximately 15,000 times greater that the thermal energy in all of the world's petroleum. Electricity generation is the option but it is generally tapped in the form of direct use of the heat. Wave energy generates electricity, heat or mechanical energy from ocean wave. Some other applications beside electricity generation include desalination, pumping of seawater for marine culture is potentially viable.

Under the Islamic Environment Action Programme appropriate, proactive and integrated plans and policies will be facilitated to develop environment conducive for business and commercial activities thus enhancing further cost reduction of the renewable technology. A good renewable energy policy needs comprehensive studies to formulate appropriate, effective and financial efficiency action plans.

Research activities are the foundation to understand the strengths and barriers of the technology from technical, financial, social and environment impacts point of views. Thus, through the research activities, a compilation of policy, legal, institutional, financial and fiscal measures could be proposed to the government. Studies such as potential of implementing the renewable energy in the country could be proposed as national targets to be achieved in a given period. Achievable targets are important to create confidence and hence encourage more renewable energy projects in the subsequent development plans.

One of the attempts could be made is to establish centres of excellence for a particular renewable technology to take up the leading responsibility to share the knowledge, provide training and consultancy services to the members. Database for energy data and statistics will be established to have better monitoring and assessment on the progress of renewable technology implementation. Renewable Energy Expert from Islamic countries will be established to meet regularly to review successful experiences in the application of renewable energy resources in different sectors in close cooperation with other major programmes of the international and regional organizations. Technical support needs to be provided to modernize power systems, as well as new and renewable energy systems. Renewable energy information and communication technologies may be utilized to provide online information, databases and renewable energy networking.

Educational programmes are able to provide the technical knowledge and improve the level of competency of service providers, engineers, architects, technicians and academia. Other capacity building programmes will be launched to raise the awareness level of the rationales for renewable energy technology among the public, policy makers, investors and financial institutions so that they can understand better the technologies, are aware of its true benefits and ecological significances, understand the purpose and appreciate the functions of the technology. Institutional collaboration in education, research and development and information services are important for human development, capacity building and data gathering. Such collaboration will be encourages under the Action programme.

One of the most immediate root hurdle in ameliorating the economic condition and alleviating poverty in the Islamic countries is unavailability of energy for their rural and remote areas, where most of the population lives. This unavailability of energy is also not only keeping the people cut off from new technology era but also hampering the economic development. As such mega renewable energy projects will be launched to promote large-scale use of low cost technologies like solar energy, biomass and wind energy in rural and remote areas

In view of the underlying potential of this field in the alleviation of poverty, a special attention may be given to the promotion of utilization of renewable energy resources, which are environmentally clean and technically simple, for the poor communities and localities.

An Action Programme on "Promotion of Renewable Energy in the Islamic Countries" was adopted by the Third Islamic Conference of Environment Ministers, held the, in Rabat, Kingdom of Morocco in October 2008, which is under implementation. In order to strengthen action in the areas of Renewable energy the Islamic Bureau may recommend a "Strategy for Promotion of Renewable Energy in the Islamic countries".