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Word from the Directors

Dear Delegates,

It is our pleasure to welcome you to the United Nations Development Programme Committee at LIMUN 2015.

We are particularly delighted to see that you are drawn to the intellectual challenge of tackling the problems of the international community. This goes without saying that we are excited about the exceptional pleasure of meeting all of you. We are convinced that this committee will offer you a rewarding and enjoyable experience.

We chose these topics because both of them are very crucial for global advancement. While the first topic can be seen as more popular and generally easy to relate to, the second topic is highly technical, and has no easy solutions. Please do not limit yourself to reading just this study guide, we highly recommend that you do further research, as you prepare for this conference.

The Directors expect you to carry out detailed and insightful analysis, as you also improve your negotiation and oratory skills. These abilities will be essential during our sessions.

We are looking forward to meeting all of you in February.

Joseph Mensah
Director

Yu Xu
Assistant Director

Orçun Doğmazer
Assistant Director
Introduction to UNDP

The United Nations Development Programme serves as the global development network of the UN. The main goal of this body is to forge change and advancement across the globe, and to improve the lives of many people all around the world. UNDP offers expert advice, training and monetary aid to developing countries, with particular focus on Least Developed Countries. Right from 1966, UNDP has served as a partner to people from all walks of life, in building nations that are capable of resisting crisis. Today, on the ground, and in more than one hundred and seventy countries and territories, it continues to offer global perspective and local insight to help countries rise from poverty into prosperity. Under the leadership of Kofi Annan, world leaders vowed to work together to achieve the Millennium Development Goals, which includes a crucial task of reducing poverty by fifty percent by the end of this year. It is therefore the responsibility of the United Nations Development Programme, to bridge global and national efforts, with the aim of achieving these eight major goals set.

UNDP's mandate is to help countries build and share solutions in four main areas: Poverty Reduction and Achievement of the MDG's, Democratic Governance, Crisis Prevention and Recovery, Environment and Energy for Sustainable Development. While carrying out all its activities, UNDP protects human rights, empowers women, minorities, and the poorest, most vulnerable people in society.

Voluntary contributions from member states are used to fund all the activities of the UNDP in 177 countries. Just like other UN agencies, UNDP has enlisted the voluntary services of quite a few prominent individuals as Goodwill Ambassadors to highlight its causes. They use their fame to amplify the urgent and universal message of human development and the need for countries to cooperate in solving global matters. Their activities have also been extremely helpful in the quest to achieve the Millennium Development Goals.

It is believed that the perspectives of the UNDP in the future are incredibly great. UNDP will continue to work towards making this planet a better place, as it continues to propagate its principles. It believes that collaboration should be at the heart of the climate change question, breaking the corruption chain is a collective responsibility, meaningful reduction in disaster risk requires borderless efforts, and inspiring innovation to meet development challenge is crucial.
Introduction

In the year 2000, 189 countries as well as other major international organisations met at the United Nations to share a global vision and a common responsibility to ensure worldwide economic and social development, human dignity and equality. The Millennium Summit in September that year witnessed the largest meeting of world leaders in history to draw up and accept the United Nations Millennium Declaration, committing their countries to a global partnership at a higher level of cooperation to eliminate extreme poverty and formulating a variety of time-bound objectives, known as the Millennium Development Goals (MDGs), to be achieved by 2015.

The eight agreed MDGs are as follows:

• To eradicate extreme poverty and hunger
• To achieve universal primary education
• To promote gender equality and empower women
• To reduce child mortality
• To improve maternal health
• To combat HIV/AIDS, malaria, and other diseases
• To ensure environmental sustainability
• To develop a global partnership for development

The Millennium Development Goals are quantified targets for resolving extreme poverty, including income poverty, hunger, disease, lack of adequate shelter in the least and less developing areas, and promoting gender equality, education, and environmental sustainability. Meanwhile,
these targets also embrace respecting and assuring basic human rights, the rights of each person on the planet to health, education, shelter, and security.

Although MDGs set out specific development targets for global society, there are a series of critics concerning these objectives, complaining of a lack of comprehensive analysis and convincing justification behind the chosen goals, and difficulty or infeasibility of measurements for some goals and uneven progress. In spite of the fact that the challenge period saw a significant increase of aid from developed countries to accelerate the achievement of the MDGs, over half of assistance went for waiver of debts, with the majority of remainder targeted at natural disaster relief and military aid, neither of which further development.

The uneven progress towards the goals was another serious issue. By the end of 2014, there had been huge gaps among countries to achieve MGDs. Some countries accomplished many goals, while others were not on the right track to realise any. In September 2010, a UN conference reviewed progress of MGDs accomplishment, arrived at a conclusion and adopted a strategic worldwide plan to ensure the feasibility of meeting the deadline for the eight goals. At the beginning of 2015, the global society is eager to see the final outcome of the largest collective developmental project in human history. Meanwhile, beyond 2015, our common development agenda should embrace discussions concerning the definition and promotion of sustainable development.

History of the topic

Millennium Summit and Declaration

According to Resolution 53/202 of 17 December 1998, the UN General Assembly decided to designate the fifty-fifth session of the General Assembly as “The Millennium Assembly of the United Nations”, and to convene a Millennium Summit of the United Nations. The Millennium Summit was held in September 2000 at United Nations Headquarters in New York. About 149 Heads of State
and Government and high-ranking officials from over 40 other countries participated in the summit. The approval of the Millennium Declaration was the main outcome of the Millennium Summit. It affirmed Member States' confidence and faith in the United Nations and its Charter as indispensable for a more peaceful, prosperous and just world. The collective responsibility of the governments of the world to uphold human dignity, equality and equity is recognized, as is the duty of world leaders to all people, and especially children and the most vulnerable.

The MDGs originated from the United Nations Millennium Declaration. A statement of values, principles and objectives for the international agenda for the twenty-first century was highlighted in the declaration. It also set deadlines for numerous global collective plans. The Declaration declared that each individual living in different parts of the world inherently has dignity, including the right to freedom, equality, and a basic standard of living that consists of freedom from hunger and violence and encourages tolerance and solidarity. The MDGs set concrete targets and indicators for poverty reduction in order to achieve the rights set forth in the Declaration.

To strengthen the United Nations, Summit leaders resolved to reaffirm the central position of the United Nations General Assembly; intensify efforts for a comprehensive reform of the Security Council in all its aspects; further strengthen the Economic and Social Council and the International Court of Justice; encourage regular consultations and coordination among the Organization’s principal organs; ensure greater policy coherence and urge the Secretariat to make the best use of resources, which should be provided on a timely and predictable basis.¹

*Millennium Development Goals Reports*

The annual MDGs reports (2005-2014) present the most comprehensive global assessment of progress to date, based on data provided by a large number of international organisations within and outside the United Nations system. The following extracts come from Millennium Development Goals Reports 2006-2014.
2006: Developed countries have confirmed their commitment to the Goals through increased aid and enhanced debt relief.

2007: So far, our collective record is mixed. The results presented in this report suggest that there have been some gains, and that success is still possible in most parts of the world. But they also point to how much remains to be done.

2008: We have made important progress towards all eight goals, but we are not on track to fulfil our commitments.

2009: We have made important progress in this effort, and have many successes on which to build. But we have been moving too slowly to meet our goals. And today, we face a global economic crisis whose full repercussions have yet to be felt.

2010: Many countries are moving forward, including some of the poorest, demonstrating that setting bold, collective goals in the fight against poverty yields results. But unmet commitments, inadequate resources, lack of focus and accountability, and insufficient dedication to sustainable development have created shortfalls in many areas.

2011: Lives have been saved or changed for the better. Despite real progress, we are failing to reach the most vulnerable. Continued progress requires an active commitment to peace, equity, equality and sustainability.

2012: The world has met some important targets—ahead of the deadline.

2013: Progress in many areas is far from sufficient. Redoubled efforts are urgently needed, particularly in regions most behind to jumpstart advancement and achieve maximum gains.

2014: There has been important progress across all goals, with some targets already having been met well ahead of the 2015 deadline. All stakeholders will have to intensify and focus their efforts on the areas where advancement has been too slow and has not reached all.²

Millennium Development Goals Acceleration Framework

In 2010, UNDP introduced the Millennium Development Goals Acceleration Framework as a systematic, workable approach for helping accelerate progress towards MDG targets, which were at risk of being missed. This framework allows for the identification of priority bottlenecks which are holding back progress towards a specific goal, and the creation of effective, pragmatic solutions
which bring implementing partners together from across sectors and mandates in a joint push for success.³

Current Situation

Fifteen years ago, global leaders gathered together and made the official commencement of MDGs. This year, the whole world will witness the final results of these concrete targets for improving the existence of many and for saving the lives of those threatened by disease and hunger. Currently, member States are fully engaged in discussions to define Sustainable Development Goals (SDGs), which will serve as the core of a universal post-2015 development agenda. Our efforts to achieve the MDGs are a critical building block towards establishing a stable foundation for our development efforts beyond 2015.

• To Eradicate Extreme Poverty and Hunger

There are three individual targets within this goal, i.e. Target 1.A (Halve, between 1990 and 2015, the proportion of people living on less than $1.25 a day), Target 1.B (Achieve Decent Employment for Women, Men, and Young People) and Target 1.C (Halve, between 1990 and 2015, the proportion of people who suffer from hunger). For Target 1.A, it is encouraging to see that the extreme poverty rate has been halved, but major challenges remain. From the latter part of the twentieth century, global society has made continuous and remarkable progress in reducing extreme poverty. Despite this overall achievement, the main challenge lies in the uneven progress on poverty reduction. Regions, including Eastern Asia and South Eastern Asia, have met the target of halving the extreme poverty rate, whereas other places, such as sub-Saharan Africa and Southern Asia, still lag behind. According to World Bank projections, sub-Saharan Africa will be unlikely to meet the target by 2015.

For Target 1.B, limited progress in the reduction of low-quality employment, which has been widespread in most developing countries, was triggered by the low global economic growth rate
and uneven recovery. This poor situation of economic performance continued to take its toll on labour markets, particularly in the developing areas.

For Target 1.C, hunger continues to decline, but major efforts are needed to achieve the hunger target globally by the end of 2015. It is estimated that a total of 842 million people, an equivalent to one in eight people in the world, were suffering from chronic hunger in the period of 2011 to 2013. Equally important, is the issue of large amounts of children still suffering from hunger and related diseases. One in seven children under age five in the world is underweight, and one in four children around the world remains stunted, despite steady gains. Moreover, the number of newly displaced persons has tripled from 11,400 people per day to 32,000, since 2010.

- **To Achieve Universal Primary Education**

  The main aim for primary education is Target 2.A: Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling. Despite impressive strides forward at the start of the decade, progress in reducing the number of children out of school has slowed down considerably. The current situation is that, half of the 58-million out-of-school children of primary school age live in conflict-affected areas. Meanwhile, one in four children in developing areas entering primary school is likely to drop out. Another striking fact is that, 781 million adults and 126 million youth worldwide lack basic literacy skills, and more than 60 per cent of them are women.

  Children in conflict-affected areas, girls from poor rural households and children with disabilities: these three categories of children are more likely to be out of school. Poverty, gender and location are the most popular factors linked to disparities in school attendance in children of primary school and lower-secondary school age.

- **To Promote Gender Equality and Empower Women**
Target 3.A, that is, the elimination of gender disparity in primary and secondary education, preferably by 2005, and at all levels of education no later than 2015, is the primary task for gender equality.

There are three main observations related to this goal:

- Gender disparities become more popular at higher levels of education, with greater variances among developing regions.
- A lot of improvement of women’s status in the labour market has been seen, but gender disparity still exists.
- More family-friendly policies are needed to support greater women’s participation in the job market.
- In terms of women’s involvement in politics, their participation continues to increase, but glass ceilings remain.

- To Reduce Child Mortality

Since 1990, child mortality rate has almost been halved; meanwhile, six million fewer children died in 2012 than in 1990. These facts indicate that we are on the right track to achieve Target 4.A, that is, reduce by two-thirds, between 1990 and 2015, the under-five mortality rate. Despite substantial progress, the world is still falling short of the MDGs child mortality target. Currently, the global annual rate of reduction in under five mortality has accelerated steadily from 1.2% between 1990 and 1995 to 3.9% between 2005 and 2012. However, regions such as Oceania, sub-Saharan Africa, Caucasus and Central Asia, and Southern Asia still fall short of the 2015 target. It is noticeable that preventable diseases occurring during the neonatal period are the main causes of under-five deaths. Moreover, we should give higher priority to reduce the number of child deaths in sub-Saharan Africa and Southern Asia where the target continues to confront a tremendous challenge.

- To Improve Maternal Health
The first target to improve maternal health lies in reducing by three quarters, between 1990 and 2015, the maternal mortality ratio (Target 5.A). In 2013, pregnancy and childbirth caused the death of almost 300,000 women globally. Therefore, we need much more still efforts to reduce maternal mortality. Meanwhile, the poor performance in rural areas still remains a challenging factor. It is reported that more than two thirds of babies in developing regions are delivered by skilled health personnel, but rural areas fall behind.

Another specific aim, Target 5.B, which has to be achieved by the end of this year: universal access to reproductive health, is still confronted with three main challenges:

- Although the large majority of pregnant women in developing regions see a skilled health provider at least once, only half of them get the recommended four antenatal check-ups;
- Adolescent childbearing remains at an extremely high level in some regions;
- The use of contraceptives has increased but gaps persist in meeting the demand for family planning.

- To Combat HIV/AIDS, Malaria, and Other Diseases

Although humanity has made progress in HIV/AIDS treatment, we are still failing to find the best solution to this disease. Hence, Target 6.A focuses on halting and beginning to reverse the spread of HIV/AIDS by the end of 2015. In past years, we have succeeded in reducing the spread of HIV/AIDS, but there are still too many new cases of HIV infection. These cases are more commonly seen in African regions. Another pathetic fact is that almost 18 million children have lost either one parent or both to AIDS. Apart from immature children, many young people do not know enough about HIV and continue with risky behaviour.

The second sub-mission is Target 6.B, which states “achieve, by 2010, universal access to treatment for HIV/AIDS for all those who need it”. Antiretroviral therapy (ART) has saved 6.6 million lives since 1995 and expanding coverage can save many more. If the current positive momentum could continue, the world would hopefully reach its objective of having 15 million people on ART by the end of 2015.
Apart from HIV/AIDS, MGDs also cover the treatment of other major diseases; hence Target 6. C is having halted by 2015 and begun to reverse the incidence of malaria and other major diseases. Malaria and tuberculosis are two major diseases that deprive huge numbers of people their rights to healthy living. With more than three million lives saved in the past decade, the world is on track to achieving the malaria target, but great challenges remain. The fight against malaria requires sustained political and financial commitment from both the international community and affected countries. In terms of tuberculosis, the implementation of successful treatment strategies against it has saved millions of lives and the number of new cases and deaths is falling, bringing the target within reach. However, more efforts, including the assurance of sustainable financial supply, sufficient proper treatment to newly diagnosed patients and extra medical care to HIV-positive tuberculosis patients, need to be put in.

- **To Ensure Environmental Sustainability**

Environmental sustainability is a broad and integrated goal that covers four aspects. The first sub-mission is Target 7.A, to integrate the principles of sustainable development into country policies and programs and reverse loss of environmental resources. Deforestation, greenhouse gas emission and scare renewable water resources are three main key concerns for country policies and programmes. It is reflected in the MDGs reports that millions of hectares of forest are lost every year, threatening this valuable asset. Meanwhile, global greenhouse gas emissions continue their upward trend and the current situation for renewable water resources are becoming even scarcer.

**Target 7.B**, the second sub-mission, has been focused on reducing biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss. According to the latest estimation, the areas under protection in different regions have seen a substantial and encouraging trend. Protected areas are increasing, thus helping to safeguard natural resources. However, we must keep a clear mind of the serious fact that many species are being driven closer to extinction through declines in population and distribution.

The third specific goal is **Target 7.C**, which is concerned with halving, by 2015, the proportion of the world’s population without sustainable access to safe drinking water and basic
sanitation. According to estimation, access to an improved drinking water source has become a reality for 2.3 billion people since 1990. Nevertheless, there are large amounts of people still relying on unsafe water sources. In terms of improved sanitation, more than a quarter of the world’s population has gained access to it since 1990, yet about a billion people still resort to open defecation. The most serious case is that the poor and minorities in rural areas, may still lack access to both improved water and sanitation.

Compared to better-off individuals, slum dwellers have more concerns and are of a higher priority. Hence, Target 7.D proposes that by 2020, a significant improvement in the lives of at least 100 million slum dwellers will be achieved. Currently, it must be admitted that with a growing number of MGDs on their way to achievement, the number of people living in slum conditions is also growing. Basically, one possible way to stop slums from spreading is to build more streets. Meanwhile, new geospatial data can also be helpful with addressing the slum problem better.

• To Develop a Global Partnership for Development

The last goal of MDGs, which highlights global partnership for development, consists of six specific sub-missions. Sustainable development is the common goal for both developing and developed countries. According to estimation, net official development assistance from developed countries to developing countries in 2013 rose by 6.1% in real terms compared to 2012, after two years of falling volumes. Meanwhile, official development assistance stood at $134.8 billion in 2013, the highest level ever recorded.

Target 8.A, that is aimed at developing further an open, rule-based, predictable, non-discriminatory trading and financial system, helps to build a platform for international trade which gives preferential treatment to Least Developed Countries (LDCs). Based on the most recent MDGs report, the world has seen trade liberalization slow down, yet LDCs truly benefit from preferential treatment.

Target 8.B and Target 8.C both place emphasis on addressing the special needs of LDCs, landlocked developing countries and small island developing States. The current problem is that,
Aid is been shifted away from the poorest countries. In 2012, aid from the Development Assistance Committee donors to LDCs amounted to 0.09% of their combined gross national income, its lowest ratio since 2008.

A country’s external debt burden affects its creditworthiness and vulnerability to economic shocks. So Target 8.D is concerned with dealing comprehensively with the debt problems of developing countries. The current situation is that the debt burden of developing countries is much lower than in 2000, but is not declining further.

Target 8.E, in co-operation with pharmaceutical companies, ensures the provision of access to affordable, essential drugs in developing countries. It also acknowledges the need to improve the availability of affordable medicines for the world’s poorest people. Several countries have made substantial progress towards increasing access to essential medicines and treatments to fight HIV/AIDS, malaria and tuberculosis, but access to essential medicines in developing countries is not adequate.

Target 8.F is devoted to information and communication. Specifically, the target is to, in co-operation with the private sector, make available the benefits of new technologies, especially information and communication. In MDGs Report 2014, it was stated that there are almost three billion people using the internet and several billion mobile-cellular subscriptions. These figures confirm that the use of modern information and communication technology is growing. In terms of access to high-speed Internet, the falling price of broadband and the expanding mobile-broadband networks are the main reasons why access is soaring.  

Case Study

Investing in people-centred innovation and technology essential to Africa's development.

Since 2006, the African Economic Conference (AEC) has been jointly organized by the AfDB, ECA and UNDP with the mandate to foster dialogue and the exchange of knowledge on economic
issues and challenges facing Africa. Innovation and technology can serve as a springboard for economic transformation provided they are driven by people. This was the message put forward by partners and participants at the closing of the 9th Annual AEC, which ran from November 1-3 in Addis Ababa. Decision-makers and business leaders, economists and academics from across the globe met for the AEC to discuss how to harness knowledge and innovation to boost youth employment, foster the adoption of new technologies, and enhance Africa’s economic transformation.

Beyond technology and technology transfer, the role of innovation was discussed at the conference as a trigger for behaviour and social change. “Innovation is a key determinant of the ability of economies to sustain growth, and is critical to improving socio-economic conditions. Socio-economic transformation in Africa requires both adaption of existing technologies, and the development of home-grown innovations,” said Abdoulaye Mar Dieye, Director, UNDP Regional Bureau for Africa, UN Assistant Secretary General.

*Bosnia and Herzegovina: A step to end stigma over HIV.*

Bosnia and Herzegovina passed a milestone in its effort to end HIV-related stigma and discrimination when a baby was born via C-section in January to HIV-positive parents in Sarajevo. The baby’s mother was only 21 years old when she found out that she was HIV positive, according to Hadžiosmanović. Through support, counselling and effective treatment, her condition stabilized. The woman eventually married her boyfriend, graduated from college, found a job and decided to have a child. At 245, the number of people living with HIV in Bosnia and Herzegovina is small. But the stigma that surrounds HIV/AIDS is enormous. In an age of advanced medicine, including antiretroviral therapy, people living with HIV face greater difficulty coping with stigma and discrimination than they do maintaining their health, according to health experts in Bosnia and Herzegovina. Stigmatization is particularly entrenched in the health sector.

A US $40 million Global Fund grant administered by UNDP in Bosnia and Herzegovina has been focusing on preventing and treating HIV/AIDS since 2006. The country has organized educational programmes to reduce HIV-related stigma, particularly in the health sector. HIV
prevalence among the general population is now below 1% and is less than 5% in any higher-risk population for HIV infection. Through UNDP support, 22 centres were established across the country, which provide free, confidential HIV testing for all. Awareness and advocacy campaigns helped place HIV/AIDS at the centre of national planning and budgets, and resulted in the adoption of a national strategy by the Council of Ministers in September 2011.

**Executive summaries of past actions taken**

- Rio Declaration on Environment and Development
- Agenda 21
- Programme for the Further Implementation of Agenda 21, Plan of Implementation of the World Summit on Sustainable Development (Johannesburg Plan of Implementation) and the Johannesburg Declaration on Sustainable Development of the World Summit on Sustainable Development
- Programme of Action for the Sustainable Development of Small Island Developing States (Barbados Programme of Action) and the Mauritius Strategy for the Further Implementation of the Programme of Action for the Sustainable Development of Small Island Developing States
- Programme of Action for the Least Developed Countries for the Decade 2011-2020 (Istanbul Programme of Action)
- Almaty Programme of Action: Addressing the Needs of Landlocked Developing Countries within a New Global Framework for Transit Transport Cooperation for Landlocked and Transit Developing Countries, the political declaration on Africa's development needs, and the New Partnership for Africa's Development
- United Nations Millennium Declaration, the 2005 World Summit Outcome
- Monterrey Consensus of the International Conference on Financing for Development
- Doha Declaration on Financing for Development
- Outcome document of the High-level Plenary Meeting of the General Assembly on the Millennium Development Goals
- Programme of Action of the International Conference on Population and Development
• Programme of Action of the International Conference on Population and Development
• Beijing Declaration and Platform for Action.

Further Research Suggestions/ Bibliography

1. Millennium Document from the Millennium Summit (6-8 September 2000)


3. Accelerating Progress, Sustaining Results: The MDGs to 2015 and Beyond


5. Investing in people-centred innovation and technology essential to Africa's development

6. Bosnia and Herzegovina: A step to end stigma over HIV
Topic B: Promoting the efficiency of traditional and renewable energy utilization for sustainable purposes

Introduction

Several countries have been taking actions and putting considerable efforts in order to set up a power generation systems that generate an independent energy resource. The need to receive power through accessing energy has an essential role in human life while ways preferred have also affected the environment. Generating power by not damaging the nature and its elements from renewable energy resources such as solar, wind, geothermal energy and biomass etc. is of great potential. However, usage of these energy resources is not widespread. Promoting the efficiency of traditional and renewable energy utilization for sustainable purposes is the question of the present, considering the actions previously taken by governments that have failed to create efficient result. Several techniques and technologies are available today to utilize biologic based energy sources; more production with fewer budgets is the need of the market.

![Figure 1 Contributions of renewable to energy supply in some countries in the Danube Region](image)
Energy prices are higher than the other parts of Europe in the Central European countries. Primary energy is imported, its transportation costs much, the markets are fragmented and energy infrastructures are not well interconnected. In addition, the Danube Region (the European Union’s longest, and the continents second longest river) is especially vulnerable regarding security of supply, as it was demonstrated in January 2009 when gas supplies were cut\(^1\). Energy production and consumption are also significant sources of pollution. Pollution can be reduced or decreased by covering the energy need through the utilized renewable energy production. Usage of biomass is highly important since it paves the way for solutions in order to eradicate the threats of climate change. On the other hand, renewable energy, not only eliminates the threats of climate change but also establishes new job opportunities, provides more secured option for supply and contributes to economic growth. The evaluation of the environmental and social effects of biologic based energy resources is very inconsistent. Annually seven thousand articles and papers are issued worldwide as regards biologic based energy resources with diverse perspectives.\(^2\)

Decentralized energy use is the most important reason for the reduction of problems caused by fossil energy use. Energy must be centralized and the fossil energy usage must be controlled to stabilize the affects of the usage. Even though renewable energy sources can be preferred to decrease the negative affects of the fossil energy usage, limitations have to be made. Researchers believe that the use of biomass should have a limit, because the renewable ability of natural resources is limited. It is widely accepted that biomass production (for energy purpose) is more favorable than the conventional production in terms of environmental aspects. The ‘revitalization’ of rural areas is one of the most frequently cited advantages.

Furthermore, work place creation is also a blank that must be filled to examine the question of renewable energy. Considering the fact that majority of authors agree that environmental aspect of the question is most probably more important than the question of producing renewable energy. Some authors argue that in order to create centralized and well functioning renewable energy industry, work place creating without harming the environment and decreasing the size of the negative impacts on green is an element. All in all, each region must promote renewable energy
locally and all regions and settlements should find a way to use renewable energy that has more advantages to local budget. Economic and social perspectives are also subjects to consider if regions will adopt renewable energy to their development strategy. To conclude, with the use of locally produced biomass, the region will not lose money spent on the industry of the renewable energy and saving will enable the regions for further development on the issue.

Current Situation

Most of the European countries are in favor of the utilization of renewable energy considering the variety of aspects that one nation could benefit from turning their energy market and industry to renewable systems. Secondly, using local industries of renewable energy can also save considerable sum of money. Today, usage of renewable energy is considered one of the main steps to access regional development by harming less but producing more. Currently, renewable energy types starting with the solar, wind, hydroelectric and natural gas are highly supported by the international community and countries are taking actions to further develop their industries. Hungary, China and Finland can be examples for the important regional potentials however, most of the More Economically Developed Countries (MEDCs) are taking actions in order to turn to renewable energy.
Case Study

Hungary

Biogas production is one of the most important sectors when it comes to renewable energy. The largest biogas plant is located in Hungary with 4,17 MW³ of electrical power generation capacity.

The main parameters of a new biogas plant in Hungary

<table>
<thead>
<tr>
<th>Feedstock of current use</th>
<th>Slaughterhouse waste, turkey and cow manure, liquid pig manure, whey and process sludge, sweet sorghum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biomass consumption</td>
<td>Approximately 135,000 tons/year</td>
</tr>
<tr>
<td>Source</td>
<td>Surrounding animal breeding and food-processing facilities (max. 70 km), crop residues</td>
</tr>
<tr>
<td>Water consumption</td>
<td>10,000 m³/year</td>
</tr>
<tr>
<td>Waste production</td>
<td>Digestate (biogas residue) is categorized as waste: 116,000 tons/year Used engine oil cca. 1.5 tons/year</td>
</tr>
<tr>
<td>Waste recycling</td>
<td>Digestate is 100% recycled Engine oil is recycled by subcontractor</td>
</tr>
<tr>
<td>Waste utilisation</td>
<td>Digestate is used as fertilizer</td>
</tr>
<tr>
<td>Waste disposal</td>
<td>Minimal communal waste</td>
</tr>
<tr>
<td>Savings of CO₂</td>
<td>17,500 tons CO₂ e/year as electricity offset, plus cca. 15,000 tons CO₂ e/year from fertilizer offset</td>
</tr>
</tbody>
</table>

*Table 1.2*

As well as having the largest biomass sector, the region offers highly proper conditions for the cultivation of renewable raw materials.

Economic data of the new biogas plant

<table>
<thead>
<tr>
<th>Total budget</th>
<th>cca. 20 Million EUR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public support</td>
<td>A non-reimbursable support</td>
</tr>
<tr>
<td>Investors</td>
<td>BayWa AG, Munich, Germany</td>
</tr>
<tr>
<td>Incentive type</td>
<td>Feed-in tariff</td>
</tr>
<tr>
<td>Support policy framework</td>
<td>Hungarian Operative Program for Economical Development Government directive no. 389/2007 regulates</td>
</tr>
</tbody>
</table>

*Table 1.3*

Above given chart summarizes the economic data of the new biogas plant for Hungary; as showing the total budget of the investment cca. 20 Million Euro. Hungary plays a key role as being
regional investor of renewable energy by consuming approximately 135,000 tons/year as it was given in the first chart.

**China**

China is also one of the countries that should be highlighted regarding the usage and investment of the renewable energy. Prominent efforts are obviously directed to access energy without harming and by having the maximum efficiency in recent years. It becomes a common knowledge that Chinese government has strived in order to develop new policies, standards in consuming energy without harming the environment; considering the fact that buildings in China consume up to %25.5 energy consumed in the whole country.

![Energy use and supply in the village](image)

**Figure 1** Energy use and supply in the village

**Table 1.4**

Building industries are focused on developing new concepts and techniques to achieve their goals in building energy saving. Taking into account that China is the candidate for being the most powerful country in economics, the government of China chooses the cheapest and most effective way to produce energy. Therefore renewable energy is not likely to take place in the first rank in the agenda of prospective Chinese governments as well. The government does not wish to take
risks in installing several mechanisms for renewable energy considering unbalanced economic condition of the world.

All though there are diverse kinds of renewable energy sources existing in the world, considering the recently years. China mainly focused on the renewable energy types following;

- **Solar Energy;** in western China, there are more than 3000 sunshine hours per year (Lau et al., 2007). The accumulative area in 2006 was more than 100 million m\(^2\), and the new incremental area was about 20 million m\(^2\).

- **Biomass Energy;** It is estimated that China’s total exploitable biomass energy in 2020 is about 0.7 billion tons of coal equivalence (tce) and exploitable biomass energy that could be used as energy would reach to 0.45 billion tce.

- **Geothermal Energy;** Geothermal energy is the energy contained as heat in the Earth’s interior. Chinese geothermal energy is mainly located at the Circum-Pacific tropical zone and Himalaya-Mediterranean tropical zone. More than 3200 spots have been found, with a theoretic annual natural heat release of 104,000 PJ, of which around 1000 PJ can be exploited currently.

- **Wind Energy;** the technically exploitable wind energy resource in China is about 2548 GW which corresponds to around 7644 TWh power generation with assumption that the annual average number of windy hours is 3000.

**Finland**

Finland takes serious the issue of energy security and investing renewable energy resources as a solution for its need. Energy structure, supply and the consumption are on the table for a discussion on the Finnish government for a long time.
As it can be seen from the given chart: oil, coal, natural gas, and nuclear energy, net imports of electricity, hydro power, wind power, pind and biomass are the main types of energy accessed that Finnish government mainly focused on until 2011. It is being estimated that as being of the northernmost countries of the Europe, Finland will become more and more active in the industry of the renewable energy considering the fact that total energy consumption from the renewable energy rapidly increased more than %10.2 in total share between 1991-2011.

**Greater Mekong Sub-Region (GMS) Countries**

Greater Mekong Sub-Region is namely consisting of Cambodia, Laos, Thailand and Vietnam. All of these countries are crucial countries for the question of renewable energy, since all of them have abundant renewable energy resources. Taking a deep consideration on the statistics, there are huge hydro potentials of 55.2 GW, biomass power of 7.0 GW, wind power of 155.3 GW, and geothermal power of 472 MW. The average solar radiation is 5.0 kWh/m2/day.
Executive summaries of past actions taken:

- A/RES/62/197 - Promotion of new and renewable sources of energy
- A/RES/60/199 - Promotion of new and renewable sources of energy including the implementation of the World Solar Programme 1996-2005
- A/69/309 - Reliable and Stable Transit of Energy and its Role in Ensuring Sustainable Development and International Cooperation
- A/69/323 - Promotion of new and renewable sources of energy
- A/68/309 - United Nations Decade of Sustainable Energy for All
- A/67/314 - 2012 International Year of Sustainable Energy for All
- A/60/488/Add.6 - Sustainable development: promotion of new and renewable sources of energy, including the implementation of the World Solar Programme 1996-2005
- E/CN.17/2001/PC/20 - Energy and Transport
Further Research Suggestions/ Bibliography

1. The Impact of the Utilization of Renewable Energy Sources on Rural Development. Jozsef Horvath - University of Szeged Faculty of Agriculture.


4. Renewable Energy Utilization in Chinese Buildings: Technology Development and Demonstration Projects Xudong Yang, PhD, Tsinghua University, Beijing, China.

5. Renewable energy utilization and CO2 mitigation in the power sector: A case study in selected GMS countries Kong Pagnarith and Bundit Limmeechokchai* Sirindhorn International Institute of Technology, Thammasat University, Rangsit, Pathum Thani, 12121 Thailand.

6. Evaluation of renewable energy development in power generation in Finland Alireza Aslani, University of Vaasa, Vaasa, Finland