

JORDAN NGO SHADOW REPORT

NON GOVERNMENTAL REPORT
ON THE WAY TO SUSTAINABILITY

PRESENTED AT:

THE WORLD SUMMIT FOR SUSTAINABLE DEVELOPMENT

JULY 2002

Friends of the Earth

Middle East

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Abbreviations

AMO	Agricultural Marketing Organization
ASE	Amman Stock Exchange
ASEZA	Aqaba Special Economic Zone Authority
COD\BOD	Chemical/ Biological Oxygen Demand
EIA	Environmental Impact Assessment
EU	European Union
FoEME	Friends of the Earth Middle East
FTA	Free Trade Agreement
GAFTA	Greater Arab Free Trade Agreement
GCEP	General Corporation for Environmental Protection
GDP	Gross Domestic Product
GNP	Gross National Product
GOJ	Government of Jordan
GR	Governmental Report
IFC	International Finance Corporation
IMF	International Monetary Fund
JD	Jordanian Dinar
JV	Jordan Valley
JVA	Jordan Valley Authority
KAC	King Abdullah Canal
LUC	Land Use Code
NGOs	Non Governmental Organizations
QIZs	Qualified Industrial Zones
SR	Shadow Report
USAID	United States Agency for International Development
WSSD	World Summit for Sustainable Development

Executive Summary

Jordan occupies a strategic location in the Middle East. It is located to the east of the West Bank and Israel. From the North, it borders Syria and from the east, Iraq and Saudi Arabia. Jordan has a small window to the Red Sea in the Gulf of Aqaba. Jordan plays an important role in connecting Africa, the Arabian Peninsula and Asia.

Jordan is considered as a country in a transitional zone with four biological areas that include the Mediterranean zone, Irano- Turanian zone, Sudanian zone and desert habitat. In addition, Jordan has a unique geology and topography. Along its western border is located the Dead Sea the lowest point on earth at -417 meter below sea level.

Jordan's population is increasing at a high rate. The current population is around 5.2 million people with two million people living in Amman, the capital, and a growth rate of 3.4%. Moreover, Jordan received numerous fluxes of refugees as a result of the Middle East crises especially those related to the Palestinian-Israeli conflict and the second Gulf War.

Water is a scarce resource in Jordan. Jordan is considered to be arid and a semiarid country. Water resources do not meet existing demands. Most of Jordan's groundwater aquifers are being utilized beyond their safe yields.

Jordan faces huge challenges to build its economy. After several years of slow growth, Jordan's economy is beginning to stage a recovery. Growth in real gross domestic product (GDP) in 2001 was 4.2%, up from only 1.6% in 1999. While Jordan had hoped for a surge in growth as a result of its peace treaty with Israel in 1994, the recent collapse of Arab-Israeli peace negotiations in late 2000 has dampened hopes for regional economic cooperation in the near future.

Jordan was admitted to membership in the World Trade Organization in April 2000, after agreeing to a package of trade and investment liberalization measures. The United States and Jordan concluded a bilateral free trade treaty signed in December 2001. Moreover, Jordan is engaging in the Greater Arab Free Trade Zone and the Euro-Mediterranean Partnership. A privatization program has been undertaken to reduce the Jordanian government's stake in sectors of the economy previously dominated by state-controlled firms. This was a prerequisite for restructuring Jordan's debt to the IMF and the World Bank. Sustainability implications of recent economic liberalization measures were not fully assessed. In fact apart from a fast track environmental assessment undertaken before the signing of the US-Jordan FTA, no long term implications of the changes made, on water resources for instance, were never assessed.

Over the last decade Jordan has declared itself committed to achieving sustainable development. Besides signing the 1992 Rio Declaration, Jordan signed and ratified several conventions to protect the environment. Jordan National Agenda 21 was produced late 2001, as was the biodiversity strategy and action plan. However, the sustainability process is thought by Friends of the Earth Middle East (FoEME) to be very sluggish. Jordan has to overcome considerable financial, institutional, political, and social challenges that are currently impediments to sustainable development.

The following Shadow Report critiques the sustainable development process in Jordan pinpointing gaps, policies, programs and activities needed to be undertaking.

The Shadow Report concludes that the sustainable development process in Jordan requires stronger political commitment. The Governmental Report and the National Agenda 21 reports are correctly self-critical and recognize that there are many gaps. All reports show that the process could be much more

effective if financial resources were allocated, a strong environmental body - Ministry of the Environment were created, and a comprehensive legal framework established.

The Shadow Report concludes that the Government of Jordan must take further immediate actions to overcome its development challenges. The government is called upon to launch a sustainability strategy to advance the principles of sustainable development.

The strategy should define targets and place strict deadlines to achieve them. Action plans should be developed and the whole process of putting strategies and projects forward should be dynamic and flexible in order to overcome technical and financial challenges.

I. Introduction

Preparations all over the world at all levels are taking place to identify activities, achievements and future measures required to ensure sustainable development.

FoEME, an environmental Non Governmental Organization in Jordan values the Jordanian efforts to protect the environment and ensure sustainable development. FoEME recognizes the progress done on almost every field to improve efficiency and to put Jordan on the right track for sustainable development. However, this Shadow Report will not pinpoint to all positive progresses done so far, it will try to highlight what is needed to integrate these achievements in a comprehensive manner.

We hope that the Government of Jordan welcomes this initiative on the basis of self-criticism. We believe that a democratic process that includes wide participation of all sectors and grassroots organizations is one of the most essential elements required to promote long term prosperity.

A summary of this Shadow Report was presented during the PrepCom IV in Bali Indonesia in late May 2002 and the final full report will be presented during the Earth Summit in Johannesburg in August 2002.

Objectives of the Shadow Report

The objectives of the shadow report are to:

- Highlight and provide a constructive critique regarding the sustainable development process and achievements of different sectors since Rio 1992.
- Recommend changes to policies, programs and action to fulfill the Jordanian process towards sustainable development.
- Propose targets and timetables needed to achieve sustainable development objectives.

The Governmental Report

The Government of Jordan Participated in the Rio Earth Summit in 1992 and committed to ensure sustainable development. Numerous events, workshops and activities were carried out to introduce sustainable concepts on many governmental, NGO, academic, etc levels. Financial support was made available by the EU, UNDP, USAID, and other donors to strengthen this process.

The General Corporation for the Environmental Protection[1] (GCEP) through a financial grant from UNDP, produced “[Jordan’s Report about Sustainable Development To Johannesburg Summit 2002](#)“. GCEP invited business and non governmental environmental organizations, women associations, media and youth in seven separate workshops to get their feedback on the sustainable development process in Jordan. Most of the NGOs, especially the environmental NGOs expressed their un-satisfaction on the way the feedback was collected and interpreted. FoEME Amman office considers that the produced report did not sufficiently include all of the NGOs’ concerns and points raised during the workshops.

Overall the Governmental Report (GR), produced last October 2001[2], is very general and brief. The GR is supposed to show progress achieved and challenges still ahead, however its lack of detail prevents it from being a useful document to mobilize change. The report does not use indicators to measure changes per sector and it did not include sufficient statistical analysis. Notably the GR recommendations for action were left very general, not detailed and in some sections there was no recommendations at all. The use of language such as “*Encourage the principle of cleaner production..*”, “*Concentrate on the economic Arab integration in the fields of food security..*”, reflects the inability of the authors of the report to set actual targets to promote sustainable development in Jordan.

This shadow report represents a genuine determination to ensure sustainable development. The shadow report production constitutes the start of a robust process of self-assessment and enhancement. It aims at deepening the public participation and ensure higher level of democratic involvement in the decision making process. Follow up on this report will help and add to the newly yearly produced “[State of the Environmental report\[3\]](#)”. The shadow report follows the format of Jordan governmental report to be submitted in Johannesburg.

Major constraints identified as impeding sustainable development in Jordan include:

- High political instability in the region that has created an unfavorable development environment, especially the Second Gulf War and the ongoing conflict between Palestinians and Israelis.
- Limited natural, financial and human resources available.
- Poor bureaucratic and institutional performance by those responsible to promote sustainable development.
- Lack of political will by decision makers to implement sustainable development policies.

Jordan’s National Agenda 21 Report was also recently launched, in July 2001[4]. The National Agenda to its credit is a comprehensive document. It reviews many of the required steps and programs needed to move Jordan in line with sustainable development. However the National Agenda document did not touch on the following important issues:

- The impact of trade agreements on sustainability.
- Little emphasis was given to regional environmental and economic cooperation, apart from the call to establish a “[Regional Environmental Center](#)”[5].

- The Agenda did not include measures to implement the signed International Environmental Conventions, especially since in some instances there is no working mechanism to enforce these conventions.
- There is no clear funding mechanism created to support the sustainability process.
- The impact of globalization on socio-economical and environmental sectors was not sufficiently considered.
- The Agenda did not address Jordan's financial situation and possibilities to overcome the current debt challenges in a sustainable way.

The National Agenda 21 is the first required document in a series of other documents. The second step is to produce the National Action Plan (NAP). The NAP should determine how the government is going to do the required development activities and under what timetable. The production of the NAP will facilitate the monitoring of the development progresses and is a welcomed process.

Notable progress was achieved in several fields including the preparation and launching of the Biodiversity Country Study, Strategy, Action Plan, and Annexes. Also there were many environmental education and public awareness activities carried out by both government and NGOs that achieved very good progress.

The Shadow Report

Issues discussed in the Shadow Report were divided into the following four sections:

- **Social Aspects** including poverty, population growth, health, housing, land use, economy, trade and transportation,
- **Economical Aspects** including Jordan borrowing policies, trade and transportation,
- **Natural Resources** including agriculture, energy, water resources and coastal zones -Red Sea and the Dead Sea, and
- **Institutional Aspects.**

FoEME believes that sustainable development is the only way for a real development. The environmental NGOs participated in the Governmental workshop on WSSD report expressed their dissatisfaction with the GR and the process as a whole. Therefore, FoEME decided will to produce an independent report clarifying its understanding of sustainable development, especially that the Governmental report did not reflect a clear picture on sustainability. FoEME has decided and committed itself to effectively participate in the Preparatory Conferences (Prepcoms) and the coming Earth Summit in Johannesburg.

All environmental NGOs were invited to participate at two workshops^[6] in April 2002 conducted in Amman – Jordan to examine the factors that should included in the Shadow Report (SR). Participants at earlier Prepcoms made a presentation of the previous Prepcoms that took place in New York. They have presented and shared effective participation options in the Prepcom IV (Bali- Indonesia) and the Earth Summit in Johannesburg and means to disseminate and share information with all other NGOs.

The following sections are based on a critique of the government report. Each section is divided in two subsections. The first subsection includes a description of the issue, problems and a critique of the Governmental Report (GR). In the other subsection NGO recommendations are proposed. The Shadow Report does not attempt to address all problems in Jordan. It only focuses on issues considered by the authors as priority and where the NGO experience is available.



II. Social Aspects:

Poverty

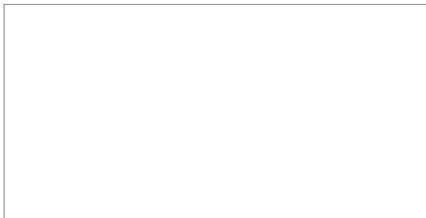
Poverty in Jordan is a major issue. Poverty is concentrated mainly in two major areas: the Palestinian refugee camps and rural areas[7]. Poverty impacts go beyond social and economical dimensions.

Increased poverty impacts natural resources and significantly affects the environmental and health conditions. The figures in the box show that there was indeed a reduction in the percentage of poor people during 1992-1997 under the poverty line, but on the other hand the actual numbers did not change significantly. There is less than 2.9% reduction in the numbers of poor people. This shows that the problem is persistent and measures taken to address this issue were not effective enough.

The Governmental Report mentioned very briefly the establishment of the Work and Development Fund, activation the role of the National Aid Fund, and the launching of the Social Security Program and several training and rehabilitation programs for workers as measures to combat poverty[8]. This issue was not adequately addressed and the mentioned measures and activities did not solve the problem. In the recommendation chapter, the GR called for the adoption of policies that include unrealistic suggestions such as the redistribution of fortunes and Zakat funds. The later are personal voluntary donations given out by Muslims.

The following concerns were not addressed in the governmental report:

- The linkages between the impacts of globalization, open markets, transnational companies, etc. on employment and increased economical pressure leading to the release of high numbers of employees, especially on the small and medium scaled businesses.
- The impacts of increased poverty on the limited natural resources in marginal areas and vice-versa were not addressed, for instance, significant deforestation, degradation of rangeland, biodiversity loss, etc. Furthermore, poverty issues in the Palestinian refugees camps, which put huge pressure and increase the social, economical and health problems were not discussed.
- Minimum wage: this factor should be re-addressed and corrected in Jordan to exceed the minimum basic decent human needs. The official minimum wage amounts to JD 80 (\$ 113) per month. However wages can go far below this figure especially with women and foreigner workers. Income per capita per year[9] is predicted to jump to JD1,259 in 2002 from

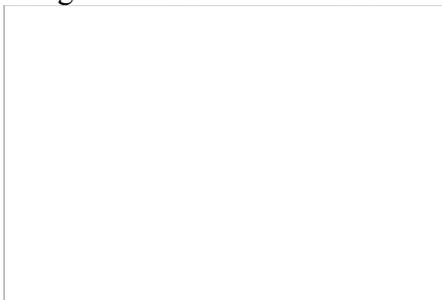


around JD1,218 in 2001. These numbers still show that significant number of people still receiving less than \$110 per month. Most of them are women and unskilled workers.

One of the objectives of **the Qualified Industrial Zones**, in addition to its economical benefit on the macro level, should provide a significant number of jobs and reduce poverty, however continuous employment of non Jordanian in these QIZs does not positively affect local poverty. Hundreds of Jordanian employees lose their income for months because of irresponsible corporate behavior. Most recently, Manhattan Company for Clothing Industries did not pay the salaries of 357 Jordanians, 65 per cent of whom are women.

- The introduction of short and long term unemployment assistance. This has a very serious impact on poverty in Jordan especially when it is associated with high dependency rate.

- The government's occasional social assistance, which is not effective due to its small scale and random distribution. Moreover, these financial supports are not designed to address and solve specific poverty issue and they are not expected to have long-term benefits. In addition, they do not contribute to other governmental objectives such as infrastructure development.



Recommendations:

The Government of Jordan should give a priority to solve poverty issues in a sustainable manner. The followings are suggestions recommended to address poverty alleviation:

- Ensure protection and development of small and medium scale businesses to increase its capabilities to resist and overcome negative globalization impacts and thus alleviate poverty.
- A new higher minimum wage must be approved and enforced. In addition, women must have the rights to get equal and full wages.
- Priority of employment should be given to Jordanians especially within the QIZs.
- Unemployment assistance should be introduced through syndicates and national security systems. These aids should be designed to create temporary jobs within the governmental establishments, the private sector or unions.
- Social assistance should be replaced by small-size projects that aim at creating extensive employment plans to benefit other sectors. Social assistance aid system should attempt to encourage people to work rather than depending on social welfare. This would reduce the governmental expenditures and increase productivities.

Population

High population growth rate is a very important issue that is related directly to natural resources depletion, poverty and sustainability. Water in Jordan, an arid and semiarid country, is very scarce and

does not satisfy the current domestic demands. Water crises will become more severe in the coming years, especially if the number of population keeps on increasing. The increase of population number has severe impacts on the consumption of agricultural areas, forests, open spaces and archeological sites in the suburbs of main cities. .

The Government took several measures to reduce the population growth rate. These measures included the production of Jordan National Population Strategy. The fertility rate was successfully reduced. The number of children per family (big families 7 persons or more) was reduced from 5.6 in 1990 to 3.5 in 2001, however the total number of small families (1-3 persons) increased[10]. The following table shows that population growth rate ranged around 4.8% since early fifties till late Seventies, and indeed the reduction in the population growth was achieved starting in the eighties with increased acceleration in the nineties. Therefore, sociologists and officials agree that there is a need to exert more efforts to organize the population growth.

Period	Growth rate %		
	Females	Males	Total
1952-1961	4.6	4.9	4.8
1961-1979	5.3	4.3	4.8
1979-1994	3.8	5.0	4,4
1994-2000	3.5	3.4	3.4

The GR mentioned that the government produced The National Population Strategy and as a result the population growth was reduced from (3.1%) in 1992 to (2.8%) in 2000. An Action Plan was not yet produced. The GR does not include any suggestions or recommendations to control the population growth. It seems from the report that the growth rate of 2.8% is acceptable and there is no need to reduce that rate, since there was no mentioning of targets to be reached.

The following issues need to be addressed in order to have sound development in the future.

- Although the previous figures of the reduction in the population growth rate are encouraging, it is not clear how much each of the current governmental activities including awareness, women education and participation in the working forces, etc. affected the growth rate. It is not known which one of these factors has the major contribution and by what percentage. Thus it is not known which field, i.e. awareness, women education, changes of lifestyle or any other factor, should get future focus to bring down the population growth rate. Knowing that would help future allocation of financial resources in an effective manner and would have more impact.
- Lack of information for younger people concerning family



planning may hamper efforts to control population growth. Currently, most awareness campaigns target the public as a whole[11].

· The impacts of poverty on population increase need to be researched. In many cases awareness campaigns do not consider the economical conditions of the target groups.

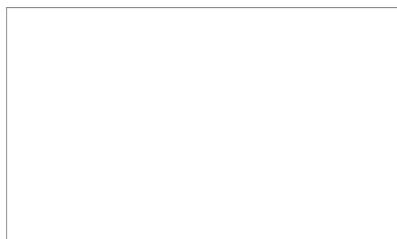
- Mal population distribution and increased rural –urban migration are important issues that impact urban centers’ population growth, which is a major factor on the unplanned growth of the cities on the surrounding agricultural areas.
- Increasing numbers of foreign unskilled workers in Jordan especially in the major cities have not been organized. This issue increases the problems of unemployment and pressure on natural resources. It also creates social problems since most of these workers are males who fall under certain age group (19-45).

Recommendations:

- Careful determination and evaluation of the significance of the current campaigns on population growth rate reduction must be made.
- The Government should address the issues of poverty and population increase in more details, and launch more specific campaigns to address special communities where high population growth combines with difficult economical situations.
- The Government should address the issue of population increase in the urban centers through redistribution of the working centers to different Governorates and cities. The government must limit issuing of working licenses to non-Jordanian workers.

Health

Jordan has witnessed major achievements in health sector. Women’s health-care has improved, where a considerable reduction in maternal mortality reached as low as 40 deaths per 100,000. Infant mortality numbers have been reduced to 26 cases per thousand. In addition, the total number of doctors, ambulances, health infrastructure, i.e. hospitals and health centers has increased.



The GR did not mention the challenge or problems concerning health issues other than the sentence shown in the box. It did not include any recommendations to improve health conditions. On the other hand, the GR just summarized some of the achievements like the increase of total population age, reduction of infant and mother mortality rates.

The followings are important issues that need to be addressed:

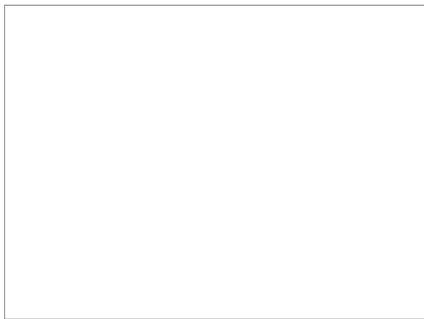
- Environmental health problems were not mentioned. There is no indication of the impacts of increased environmental pollution on the general health. This includes the deterioration of air quality as a result of increased air polluting sources and its impact on respiratory system. The impact of water quality, especially water hardness, on kidney maladies and failure cases, etc.
- The total number of cancer cases in Jordan during the years 1996, 1997 and 1998[12] increased from 3302, 3354 to 3380 case respectively. This shows that there is a tendency towards health

deterioration in the form of cancer maladies. For instance, the presence of alarming levels of DDT and other toxic compounds used mainly in agricultural activities in mothers' milk indicates a deterioration of the public health.

- Medical wastes still constitute a major environmental health problem. The disposal of the medical solid and liquid wastes into domestic solid waste dumping sites and sewer systems adds lots of contamination risks on communities in contact. The disposal of hazardous wastes including radioactive material is not known. Up until this report was produced, the hazardous waste dump site in Jordan is not ready to receive these wastes.
- The GR did not mention the increasing costs of health services and affordability.

Recommendations

- Health quality in Jordan needs to be re-evaluated in relation to the quality of food, air pollutants, water pollutants, pesticides residuals, etc. The output results should lead to planning a strategy to address causes of major environmental health problems. In addition, cancer causes should be determined and precautionary measures should be taken to avoid new cases.
- The medical waste must get immediate Governmental attention. Incineration of non-hazardous medical wastes should be done with adequate monitoring from GCPE especially for remote hospitals. The current production of hazardous wastes should be stored in safe places until the current infrastructure works end in the official dump site. These wastes must be monitored by GCEP.
- Health care should become obligatory for all working establishments in order to cover wider range of the population.



Housing and Land-Use

The rapid growth of the population number in Jordan requires huge expansion in the cities and urban areas. The Government of Jordan issued several laws regulating the land use and the housing system, however violations of these laws occur all over the country leading to massive mess of uncontrolled development. Violations consume considerable arable land. In many areas the expansion of cities affected the natural forests and agriculture,

archeological sites, etc.

The Governmental Report shows that the government was able to build infrastructure and provide housing to solve the increased numbers of population and migration fluxes problems. However, there is no mention of associated problems, and it does not include any recommendations concerning this issue.

The following issues need to be addressed and were not mentioned in the GR:

- Weak enforcement of land-use laws and regulations that control random expansion of cities over the productive agricultural land, natural areas, etc.
- The quality of housing and neighborhood environment, and associated services are inadequate and were not discussed in the GR. There is around 13,747 house made out of mud bricks and rubble asbestos, wood, Zink, etc. used for residential purposes[13]. Jordan has a unique case (Abu Nussair

Housing) where open spaces and gardens consisted around 15 percent of the total developed housing area, where in the rest of the urban center this value drops to less than 5%[\[14\]](#).

- Housing conditions in the refugee camps are very poor. Main water supply, sewer systems, roads, solid waste collection systems are not available or inadequate.
- There is no Land Use Code (LUC) for the major development areas. A pilot LUC was done in Petra Area. ASEZA did not include any land use code for the development of Aqaba economic zone which will have several consequences on the marine and terrestrial ecosystems and environment.
- The municipalities in Jordan try to ensure sustainable financial income through the creation of industrial zones. However, not all Municipalities and Governorates should have industrial zones. For instance, Jerash Municipality plans to establish an industrial zone at a total cost of JD 600,000,[\[15\]](#). The zone is expected to create around 150 job opportunities. This municipality is world famous for its archeological significance. Adding an industrial zone would compromise the beauty, culture and archeological significance of the whole area.
- The current development practices in agriculture, industry, tourism and urban expansion are posing lots of pressure on the natural presence and distribution of important biodiversity areas including nature reserves, forests, rangeland, etc. That includes ineffective control measures on urban expansion, weak management of solid wastes and waste water, unclear land use policies unsustainable water pumping in aquifers supplying reserves and the buffer zones.

Recommendations

- Land use regulations and laws should be developed, adopted and enforced to protect agricultural areas, forests, marine coastal zones, etc.
- Housing codes enforcement should be oriented towards preventing illegal building violations instead of fining. Elements including open spaces, gardens, sport facilities, etc. should be recognized and incorporated in the current and future urban development areas.
- The Government should find immediate solution to the poor environmental housing quality in the refugee camps.
- The government must develop a systematic environmental LUC for major development areas like in ASEZ, Dead Sea area, QIZs and Amman Greater Area to ensure safe development procedures.
- The government should determine the locations of industrial zones and QIZ in Jordan taking into consideration the environmental, social and archeological factors. This should be done within a master plan for industrial zones.

III. Economical Aspects

The development of the Jordanian economy faces huge difficulties. Jordan does not have significant natural resources that it could depend on. In the past decades Jordan economy shifted from huge dependency on agricultural sector to a more diverse economy. The economy still faces many challenges due to the current regional political situation, globalization and high international debt, etc.

The GR states that the government is conducting a series of economical development measures through economical policy reforms supervised by the IMF, where the Government of Jordan encourages Direct Foreign Investment into all sectors through the privatization process and through the newly established QIZs. The GR recommends that the government should cooperate with international institutes and Donor Agencies to formulate strategies for debt management, debt exchange, and find other funding sources to ensure sustainability. The GR does not link the economical development issues with environmental and social aspects. The GR points that exports should be increased, but it does not differentiate between exports that lead to exploitation of natural resources and those leading to degradation of cultural heritage and sustainable trade.

The following issues were not mentioned in the GR and need to be addressed due to their importance to sustainability:

Jordan Borrowing Policies

Jordan borrowing policies from the IMF lacks lots of social and environmental considerations. Lending cases from the World Bank Group, including IFC and IMF, showed negative impacts and practices on the environment. The followings are examples of these issues:

- IFC funding to a bilateral industrial complex “Jordan Gateway Project” in the north of Jordan and Israel shows a negative example, civil societies and the addressing of the environment and archeology were ignored[16]. The Jordan Gate-Way Company started earthworks and leveling on the riverbank of the Jordan River without conducting any environmental impact assessment study. Together with the IFC, the company refused to cooperate with calls from the local communities and NGOs to conduct an EIA. The IFC and the company were forced after launching an international campaign that involved the World Bank, CAO[17] and other international organization to conduct the EIA, which was done to justify the project and not as a management tool to ensure sustainable development. This case among other cases shows that sustainability is not a priority.
- The economical restructure policies imposed on Jordan to accept rescheduling IMF entails several issues:
 - The Lack of transparency, where the GOJ ignores involving NGOs and public participation and comments concerning the macroeconomic restructure process.
 - The lack of multi-sectorial participation in the macroeconomic process among the governmental institutions including coordination with various ministries e.g. Agriculture, GCEP, etc.
 - The conditions imposed by the IMF are submitted as initiations of the GOV in its letter of intents[18].

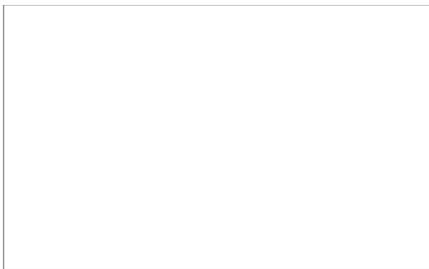
Thus, many environmental and social and economical impacts result due to these conditions. As an example of these conditions, the sudden reduction on imported cars customs resulted in massive influx of new and old cars into the country. This has significantly contributed in the deterioration of air quality especially in major cities like Amman, Zarqa and Irbid.

Privatization

Privatization of the Jordanian public economy is also one of the conditions to reduce the high external debt by selling the governmental public establishments to international companies. The privatization process is not environmentally and socio-economically sustainable. The GR mentioned that the government took several measures to liberate the economy including the “privatization policy”. The GR does not discuss this issue any further.

The following points are not addressed:

- The privatization of water distribution service that included a French company “LEMA” did not result in any progress in terms of reduction in unaccounted for water, which is used in the SR as an indicator. Moreover, water quality did not improve.
- From socio-economical point of view, the government did not conduct its privatization transactions through the Amman Stock Exchange (ASE). It denied Jordan's small and illiquid capital market from an opportunity to be developed and deepened[19]. Jordan private companies and citizens were also deprived from directly taking part in investing in privatized sectors.



- **Major economical contradictory lines:** the Government’s borrowing and the privatization process go in two contradicting lines. On the one hand, the Government works to reduce external debts through privatization of some of its establishments to ensure financial returns. On the other hand, it keeps on borrowing money to establish new projects. For instance, the Ministry of Tourism will embark on the

construction of a \$3.4 million tourist facility on the shores the Dead Sea. Eighty per cent of the costs will be financed by a soft loan from the Japanese government, while the remaining 20 per cent will come from the government. The astonishing fact is, tourism is going into general depression worldwide especially in the region. So why would the government borrow to invest in a very slow growing sector and in the same time it is selling its shares in other tourism facilities including one in the Dead Sea area (Dead Sea Spa). Moreover, and based on governmental request last November 2001, the Japanese extended another soft loan of \$70 million for the seven projects that fall under the Kingdom's Tourism Development Initiative[20]. These kinds of projects should be handled by the private sector.

Recommendations

- The government of Jordan should include environmental and social experts from the related ministries of water, environment (GCPE), etc. in negotiation on IMF programs and increase the level of communication and consultation with civil societies.

- Allocate proportion of the generated Value Added Tax (VAT) and privatization process to fund environmental protection programs and projects. The Government should implement green tax to serve different environmental programs based on the “Polluter Pays” principle[21].
- Strengthening the environmental law and codes and keep them out of any economical loan compromises.
- The government should encourage Jordanian private sector to participate and invest in the privatization process. Substantial portion of offered shares should be made available to local private investors and floated on the Amman Stock Exchange to allow local national economical development.
- The government should conduct comprehensive environmental and social impact assessment for its macro-economical restructure.
- The government must restrict its borrowing to urgent matters.

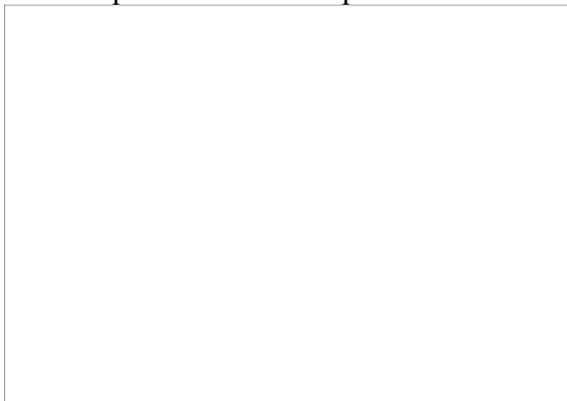
Trade

Jordan’s trade balance is negative; Jordan’s imports exceed exports. The GR indicates that Jordan decided to increase the country’s exports through signing the WTO agreement, establishing trade relation with the US – Israel known as QIZ, signing of FTA with the US and MFTZ with EU. This would create opportunities for increasing trade levels. The GR shows that the removal of trade barriers is a positive outcome of the governmental efforts. However, the GR did not consider the environmental and social consequences of the removal of trade barriers. In addition, interaction of trade, environment and society was not mentioned in the Agenda 21. The GR did not include any recommendation on this regard.

The following points summarize the main important issues that need to be addressed:

- The impact of the trade agreements that include the Mediterranean Free Trade Zone (MFTZ)[22], WTO, GAFTA, QIZs to liberate and remove trade tariffs and barriers on the environment and sustainability were not studied. Anticipated impacts studies on the southern part of the Mediterranean countries environment expect an increased pressure on natural resources, higher levels of air, water and soil pollution, the increase of production, transportation and disposal of hazardous wastes, and short term economic incentive to reduce environmental standards[23].

- Trade impacts on the local production of small and medium size businesses were not addressed at all.



- The Draft Environmental Review of the Jordan- US FTA developed in September 2000 by the United State Trade Representative (USTR) listed a number of key issues that have significant potential harm on the Jordanian environment. The FTA agreement would not be sustainable if the environmental requirement are not be translated into laws and regulations. The environmental regulations and bylaws of the FTA are drafts still.

- The proposed Ministry of Environment that should be responsible for monitoring and enforcing these regulations is not established yet. The GOJ confirmed that establishing a Free Standing Ministry of

environment was shown as a fact that is going to take place late summer 2000, therefore it did not enter into the FTA agreement as a binding condition[24].

- There is no law requiring that imported food products should be labeled if containing genetically modified substances.

Recommendations

- The Government must conduct an impact assessment of environmental and sustainability of all bilateral and regional trade agreements. The Assessment recommendations should be incorporated in all policies and the data should be shared among partner countries. In addition, a **Trade Sustainability Strategy** needs to be developed insuring that sustainability concerns are fully integrated.

- The government of Jordan should adopt policies to translate the trade agreement into active laws and regulations to protect the environment. providing all technical, institutional and financial resources.

- The government of Jordan should adopt policies and designate specific **sustainability indicator targets** with reasonable schedule and financial resources to achieve them in relation with Trade agreements.

- Promote the establishment of an independent environmental authority (Ministry) to undertake the monitoring of the trade agreement and ensuring the enforcement of environmental laws and regulations.

- The environmental authority (Ministry) should produce environmental guidelines and manuals that include all measures to ensue sustainable trade. These should include translation of all relevant international conventions for the protection of the environment such as the Convention of Biological Diversity (CBD), and the Bio-Safety Convention, Montreal Convention, Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), Persistent Organic Pollutants (POPs), etc.

- The Government of Jordan should harmonize bilateral, regional and international trade agreements to ensure common ground for higher environmental standards and enforcement procedures. Environmental concerns need to be fully integrated into negotiations between partner countries and the implementation of the bilateral association agreements within the framework of the existing fora[25]; i.e. energy, transportation, industry water, information society, and any potential priority area in the future including agriculture and tourism with the EU and with other courtiers.

- The Government of Jordan should ensure that no environmental harmful tariff reduction would be done. It also should require environmental sustainability screening of all significant financing via export credit agencies that promote industrial and infrastructure expansion.

- The draft environmental review of the Jordan-US FTA needs to be updated and an environmental monitoring plan needs to be produced and implemented.

- The Government must issue laws that request that any imported food products or animal fodder should be labeled if containing genetically modified substances.

Transportation

National Agenda 21 does recognize that transportation contributes to air pollution problem, however it does not address transportation issues at all. The GR indicates that “transportation is facing problems since the last Gulf war and recently, the current procedures applied at the borders with the West Bank”. The GR included old information that discussions are ongoing to establish Peace airport in Aqaba. These discussions ended years ago. The GR did not mention any environmental and social and economical problems related to transportation and it did not have any recommendations.

Transportation in Jordan has many adverse impacts on the environment, economy and society. Transportation systems are not developed: The SR will address these issues as follows:

Public Transportation

- A considerably large percentage of Jordan's population depends on unreliable public transportation system. Jordan does not have a proper domestic transportation system except of two lines; Amman - Aqaba and Amman - Irbid. Public transportation in Jordan has many problems Buses and service Taxis do not work according to any time schedule, thus unpredictable waiting time vary from 2 minutes to 2 hours. The availability of public transportation varies significantly in the Kingdom; while some parts lack basic services, other areas suffer from oversupply. There are no route maps or schedules at bus stops, which decrease their reliability. Buses could be diverted to serve school trips and visits to Holy places in Saudi Arabia without any prior planning of finding substitutes. All these increase the public tendency to get private cars.
- Although private ownership of cars has increased over the past couple of years due to the decrease in customs on imported cars, it still remains very low. It is currently estimated at 8 cars per 100 of the population in the Amman area and 2-3 cars per 100 of the population in the rest of the kingdom. The demand for public transportation is expected to increase in the future due to the high population growth rate and the increase in economic activity[26]. The following table[27] shows that the number of buses in Jordan till the year 2000 showed a decrease. The annual increase in the total number of vehicles ranges between 6 to 7% however in the year 2001 the percentage increase to around 9.8% [28]. These figures could be extrapolated to show an increase in cars and related air pollution emissions.

Year	1996	1997	1998	1999	2000
Buses	1,534	1,276	1,374	1,417	1,229
Cars	191,724	198,041	209,400	220,593	272,557

- Policies to maximize the benefits of public transportation are still weak. The last import tax (customs) removal increased the number of private cars in the Kingdom significantly causing the increase of the air pollution problems especially in cities' centers and increased chronic congestions. It also increased the kingdom petrol bill. On the other hand, Amman Municipality invests tens of millions JD to widen current roads and to build bridges and tunnels to overcome severe sudden congestion problems.

- Prior to November 2001, three governmental institutions including the Ministry of Interior, the Ministry of Transportation and the Public Transportation Corporation (PTC) managed this sector. The fact that three government entities were responsible for passenger transportation led to the lack of coordination between them and had an adverse effect on the level of service provided to the general public. This was primarily exemplified by the poor conditions of the vehicles and services.
- All buses in Jordan function using diesel fuel, therefore they contribute significantly to the deterioration of air quality especially in the cities centers where air is more stagnant. Besides, bus drivers have a track record of causing 28 per cent of all traffic accidents as statistics indicated in the year 2000. This shows that the current bus system impacts the quality of environment and has direct risk on human safety.

Recommendations

- The Government of Jordan should complete a Transportation Master Plan.
- The Government of Jordan should adopt policies to encourage the use of the public transportation system. It is also requested to improve the current system. The public transportation system needs to be reorganized. Bus and service Taxi stops should be established together with routes and maps. A proper time schedule should also be implemented.
- The government should adopt and facilitate the use of less harmful fuel options. The use of natural gas, electric systems should be introduced and encouraged. Areas with high air pollution rates should be restricted to pedestrians and public vehicles.
- The governments should encourage the private sector to implement clean transportation systems. Design walking and cycling paths in the most crowded cities areas. The possibility of introducing underground Metro system should also be seriously examined.
- A separate bus and service line should be allocated and enforced on major roads to reduce air pollution resulted from congestion and also to reduce the huge number of accidents.

Maritime Transportation

Maritime Ports in Jordan suffer from various problems. Besides its environmental impacts, the most salient of which including overstaffing and lack of technically qualified workers, old and obsolete equipment, operating capacity is less than design capacity, inefficient and outdated regulatory framework and inadaptability to changes in the political conditions.

- The Marine port in Jordan is expected to face increased goods movement pressure as a result of the signing of the trade agreements. The environmental review of the Jordan - US FTA anticipates significant impacts on the coral reef in the Gulf of Aqaba[29]. Moreover, the levels of contaminates that reach the sea during the loading and unloading process, water ballast disposal, oil spills are expected to increase.
- The port of Aqaba is not efficient compared to ports in the region including Syria, Egypt, Saudi Arabia and Dubai. The number of imported/exported empty containers has doubled from the years of 1996-2000[30]. Services do not adhere to international standards while the laws and regulations governing them are old and outdated[31].
- The environmental impacts of the port are huge. The harbor is originally divided into many sections; the container port, the phosphate port, oil port, etc. These diffident ports have many adverse impacts on the environment including the destruction and fragmentation of marine

habitat, since these harbors are not contained in one area. They are scattered over the southern shore. The current Governmental plan to rebuild one new harbor and remove the current ones will increase the damage of the marine life.

- The operation of these harbors adds lots of pressure on the environment. The loading of the phosphate at the loading/unloading area create immense amount of air pollution to the marine and terrestrial ecosystems. Other pollution sources including water ballast still consist chronic damage to the marine environment.

Recommendations

- The Jordan Maritime Authority should get full power to achieve sustainable maritime operation to increase the efficiency of the port.
- The current environmental pollution sources from the different port and maritime activities must be eradicated.
- The plan to relocate the harbor ports must be canceled
- An environmental management and monitoring plan should be produced and implemented in line with the ASEZA environmental guidelines.
- The Jordan Maritime Authority should take into consideration the environmental impact resulting from the trade liberalization with the US, EU countries and Arab countries by establishing waste handling facilities, taking precautionary measures to reduce the impact on the fragile coral reef, etc.

Rail Transportation

Rail transportation in Jordan dates back to 1901 when the Hijaz Railway was built. During the year 2000, approximately 30,000 passengers used the railway and 5,200 tones of cargo were transported, which are marginal figures.

- Cargo transportation is very minimal and limited to phosphate mines exports
- Passenger rail transportation is very marginal and is limited to the only line between Jordan and Syria

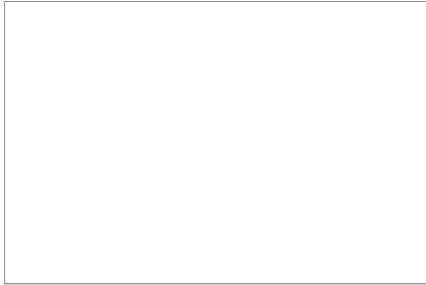
Recommendations

- The government of Jordan should encourage the development of the railway sector and enable private sector to assume an important role.
- The Government should also take serious steps to develop this transportation mean on the national level and future linkage on the regional and international levels.
- Railway Department within the Ministry of Transportation should be developed into a strong Railway Authority to tackle all railway transportation issues.
- A Railway strategy and action plan should be developed.
- The railway system needs to be renovated and the old passenger wagons should be replaced.

IV. Natural Resources

Agriculture

Agriculture practices put increased burden on state of the environment. Agriculture policies need to be re-examined. Jordan has very limited water resources. Irrigated agriculture is concentrated in the Jordan Valley. Rain fed agriculture is also very limited to the narrow strip top of western mountains. Agriculture in Jordan does not fulfill sustainability requirements.

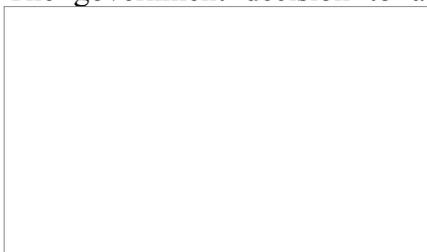


The GR recognized the agricultural problem. The GR states that Jordan is importing agricultural products because it could not fulfill its demands locally. The GR also mentioned that agriculture is contributing by less than 3.8% of the GNP. On the other hand, the GR states that agricultural exports amounts to 15% of the total kingdom exports. So far the government of Jordan does not know what is the primary objective of agriculture. The government is subsidizing more than 70% of the kingdom water

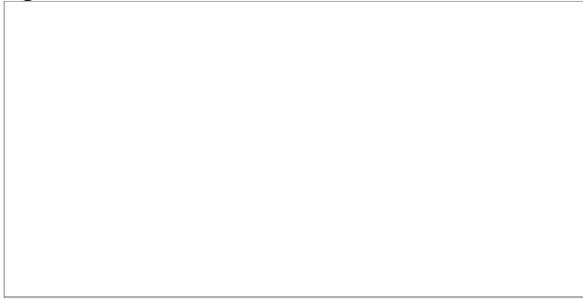
for agriculture and it is not known if the objective is to fulfill national food demands, to keep on employing 6% of the total work force or to increase exports. The GR clearly shows serious problem in the governmental agricultural policies. The GR did not put any single recommendation to improve the agricultural sector.

The following issues should be readdressed:

- Off-season agriculture for export purposes in Jordan consume huge amounts of water, while agricultural exports revenues reached in 2001 around JD 94.26 millions[32]. The current agricultural exports do not contribute significantly to the Jordanian economy if compared with other water consumption sectors like industry. Agriculture in Jordan consumes more than 70 percent of Jordan's water, and only constitutes less than 15% of the GDP.
- The Jordanian experience of agricultural production in the Rum Area using fossil water from the Dissi Aquifer was not sustainable.
- The extensive use of pesticide in agriculture especially in the Jordan Valley is not sustainable, especially the use of methyl bromide for soil and plant fumigation.
- The government decision to abolish the state-run Agricultural Marketing Organization (AMO) did not provide sound equivalent. This action increased farmers' uncertainties especially of marketing issues. Currently, significant amounts of agricultural production is wasted every year due to border barriers and long testing procedures, which result in huge loss of time, efforts, water, etc.
- The current situation, where excess agricultural production is wasted or sold at extremely low prices to the agricultural industries is not sustainable.



- Agricultural in Jordan consumes extensive amounts of plastic mulch. In addition to the high economical cost, the mulch is destroying soil fertility, and long-term agriculture sustainability.



- Agricultural research received high attention; a total of \$ 6.1 millions were spent on Agricultural research centers, however the applicable transferable outputs of these centers

are very minimal[33]. The adaptation of National Strategy for Agricultural Research and Technology Transfer formulated by NCARTT[34] in 1996 was a very good step; however this strategy did not serve as an active reference for the Faculties of Agriculture Sciences (FASs) and other national agriculture research systems (NARS) institutions.

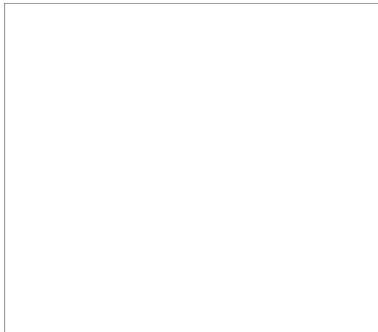
- There is no law or policy that forbids the use of genetically modified organisms in Jordan. Even in the National Agenda 21, there is no mention to restrict the use of the GMOs.
- The current agricultural polices do not control the massive destruction of nature including uncontrolled expansion of agriculture on private owned plots over forests and mountains systems, soil erosion, desertification and land degradation, soil saltation, etc. Land degradation and desertification affects most of the farmed land including agricultural areas in the Jordan Valley, western mountains, eastern steppes and Badia.
- The GR and the National Agenda 21 did not recognize that a significant number of workers in the agricultural sector are foreigners, which is a very important factor of agricultural sustainability. Also it did not refer to animal production issues.

Recommendations

- The Government of Jordan should encourage sustainable agriculture. Agricultural practices should be developed, and new technologies should be adopted to arid and semi arid ecosystems through the use of saline resistant crops, use of marginal water, etc.
- The government must reintroduce the actual water prices for agricultural use, and promote conduct of agricultural economical and environmental feasibilities studies prior to the implementation of agricultural projects. The current agricultural projects should be reassessed for sustainability. Sustainability indicators should include the international production cost, alternative water uses options, land degradation and desertification, etc.
- The government together with Jordan Farmers Union (JFU) should focus on establishing a marketing body to ensure good and continuous communication and information transfer between framers and potential local, regional and the international markets based on the protection of production prices, the fast flow and the testing of goods across borders. One of the main issues that need to be solved is the agricultural cooperation between Jordan and importing countries. Issuing entry visas for products and trucks should be arranged as to avoid huge loss of agricultural products at the borders waiting for permissions.

- The agricultural transforming industries should be redesigned to support the agricultural production, and to contribute positively to the value added returns. This may include structural changes of the shareholders percentages to include wider farmers' contributions.
- Agricultural polices must prohibit the introduction and use of any Genetically Modified crops or organisms. Ministry of Agriculture should protect the local agricultural diversity and encourage the use of native species adapted to arid climate.
- The use of plastic mulch should be prohibited and instead organic mulch should be used, which has no environmental and economical negative consequences. Organic agriculture should be encouraged through wide introduction and implementation of integrated pest management practices. The use of hormones and chemicals should be prohibited as well.

Energy



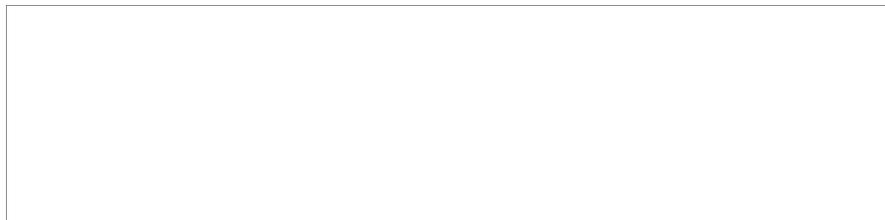
Energy resources in Jordan are very limited. The GR mentioned that the Government made several efforts to maximize the potential sources of energy. The natural gas explorations show that Jordanian natural gas will not satisfy the national growing demands. A promising natural gas pipeline project aims to link the kingdom with Egypt and in the future with Syria, where Jordan will import gas from Egypt.

The government intention to increase its dependency on natural gas is very appreciated step since it is more environmentally friendly product if compared with oil. On the other hand, Jordan established a number of electrical links with neighboring countries including Egypt, and Syria as a step to increase energy sources.

The GR shows that incentives are needed to encourage the use of clean natural energy sources such as the use of renewable sun energy. The GR pointed to the Governmental decision to renew all public vehicles to reduce energy consumption and air pollution. Public vehicles were exempted from custom tax. The GR encouraged in its recommendation to utilize the energy in the best manner.

However there are still many important issues that needs to be tackled by the Government including:

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The government should encourage energy saving, especially in the industrial sector. A study covered 60 factories showed that a minimum 20 to 50 percent of the energy used could be saved[35]. Industries

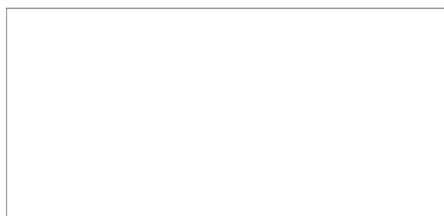
use of energy ranged between 23-32 percent of the total energy consumptions[36], which is equivalent to around \$ 250 millions.

- The use of renewable energy in Jordan is still very marginal. There is very limited wind energy production south of Irbid City. In addition, the use of solar panels is limited to water heating on the household level.
- The government attempts to use nuclear reactors for electricity and peaceful energy generation, will lead, if implemented, to many environmental consequences[37].
- The current petroleum products are of poor quality. The gasoline is treated with high amounts of lead to raise its octane number, while the Jordanian diesel is considered to be the worst produced in the world. Diesel contains the highest sulfur content exceeding all limits[38]. On the other hand, the production and use of unleaded gasoline is still minimal.
- The Refinery in Jordan did not improve the quality of its products despite all Governmental requests. This raises the question whether the Government has any power to enforce its requests. The refinery will continue to be the only source of petroleum products in Jordan till the year 2011.

Recommendations

- The Government of Jordan should adopt a policy to increase the percentage of renewable energy contribution up to 12% by 2010. This might include facilitation and incentives to private sector to invest in this regard, long term borrowing contracts for industrial and residential use, etc...
- Conduct national energy impact assessment study of major energy consuming sectors, including industry, transportation, housing, etc. The results should be used to produce national Sustainable Energy Plan. Other renewable option like biogas production should be encouraged.
- In addition, energy-mixing options, such as the introduction of hybrid systems, mixed natural gas and oil at thermal power stations, etc. should be encouraged to increase efficiency and reduce pollution.
- Options to use nuclear energy production must not be allowed.
- The quality of the petroleum products should be improved.
- The government should promote more energy saving measures at all levels.

Water Resources



Water is a scarce resource in Jordan. Jordan is considered an arid and semiarid country. Water resources do not fulfill increasing demands. Most of groundwater aquifers are suffering from extensive use beyond safe yields. The GR mentions that the Government of Jordan tried to bridge the increasing gaps between supply and demand through all kinds of water projects.

The GR does not refer to any water management problems. The regional water agreement with Israel mentioned in the GR is far from cooperation. The GR recommendation for water is very general and

limited to the one in the box.

Water policy and usage in Jordan are unsustainable. The following points summarize the major questions concerning the water policy and usage in Jordan:

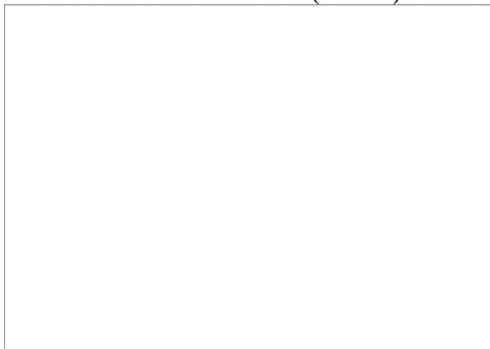
- **Private wells**, huge number of private wells pumps water for agriculture, industry, domestic and tourist uses. These wells are still functioning without any monitoring, which contain many unlicensed ones. Just recently the government started to request that operating rigs to drill artesian wells should have license. The Ministry of Water and Irrigation had earlier announced that because of the poor underground water reserves, it would prosecute any violators of Water Authority's regulations on water drilling. Till now, there is no monitoring of water pumping from these well and there is no tariff imposed on any amount of water pumped.

- Artesian wells' water is used for domestic purposes without any monitoring of its chemical and biological suitability for drinking. Many of these wells have an elevated level of water hardness, high iron content, salinity is higher than the WHO guidelines, which have a direct risk on the human health.

- The government management of water resources requires considerable changes. In many areas it is considered to be unsustainable. The building of number of dams to collect water during rainy seasons was not successful. Karama Dam that is built in the southern Ghore area was built on top of saline springs. Water collected or in many cases pumped to be stored in that dam gets salted and renders unsuitable for any use immediately.

- Another example is the economic value of the Unity Dam, which is to be built on the Yarmouk River. The river's flow amounted three years ago around 3 meters per second, which means a maximum storage capacity of less than 94.6 MCM per year. The current water flow in the river amounts to around one meter per second, which means a maximum storage capacity of less than 31.5 MCM per year. According the Ministry of Water and Irrigation the Unity Dam will have the capacity of 125 MCM, which is much higher than the river capacity. Even if the dam water will not be used for a number of years to fill up the dam, water quality will be significantly deteriorated and treatment will be very expensive.

- Unaccounted For Water (UFW) or water losses through water supply system leaks and illegal



connections are a huge problem in Jordan. The historical number of UFW still amounts to around 50% and it did not change significantly, even after privatization of the distribution networks in many places especially in Amman, where the private water company LEMA has full coverage Authority.

- The government is currently planning to pump water from Disi fossil aquifer in the southern part of the Kingdom. The project will pump water to Amman area over around 320 km

pipeline. According to the Ministry of Water and Irrigation, the project is expected to supply the Kingdom with 80 to 150 million cubic meters of high drinking-water quality annually. This project raises many sustainability questions. Water from the Disi aquifer will be linked to the current water distribution network, where it is subject to loose around 50% into UFW. The second issue of this project is the use of extremely precious water for industrial and tourism sectors. There are no separate networks for industrial water supply, which means very good water quality is subject to huge losses

and unsustainable use for industrial purposes.

· The government recognizes and tries to solve mal agriculture water uses, however the following issues still constitute major obstacles towards sustainability:

o The Agricultural sector receives around 70% of the kingdom's water and contributes only by 15% of the GDP. This sector is combined with great inefficiency. It starts at the governmental and private pumping stations, where excessive water pumping resulted in lowering the groundwater levels.

o The water conveyance system has many negative impacts on water quality and quantity. The water quality transported by King Abdullah Canal (KAC), which is an open canal that extends from the northern Jordan Valley (JV) towards the Southern Ghore deteriorates due to the increased numbers of biological contamination sources. Moreover, the total suspended solids in terms of algae increases dramatically causing huge problems to the irrigation systems. In addition to increased water losses due to evaporation and leakages.

o Water quality in the JV is divided into four water categories. Water in the JV gets increased amounts of poorly treated domestic and industrial wastewater and gets mixed with natural water of springs and rivers. The fourth category at the southern part is not suitable for unrestricted agriculture due to high level of salts, biological and chemical loads BOD/COD and biological contaminants.

o Agriculture on the other hand has many negative impacts on the sustainable use of water resources. Major plantations of the JV contain crops with high water demands with moderate to low economical return, very low yield return, coupled with poor field water management.

· Symptoms of unsustainable water use appear in the lowering of groundwater levels, increased salinity, reduced water supplies for domestic uses, and collapsing water systems. The Azrak Oasis in the upper north east of the country that used to supply water for some agricultural, domestic uses besides serving as a major stop point for migratory birds has dried out. This water system faced severe water pumping to supply the capital Amman.

· Low regional cooperation on water issues resulted in lowering the level of the Dead Sea and impacting the whole surrounding ecosystems. Poor coordination on the safe water yields that should be diverted from the Dead Sea attributes resulted in huge cut down of the water input. The rate of groundwater seepage towards the Dead Sea is accelerated due to the loss of significant retaining head.

Recommendations

· The government must determine the abstraction safe yields of every single well and basin. It should monitor all private wells, as not to exceed allowable abstracted rate, and pose appropriate tariff for every cubic meter used per sector.

· Water quality must be monitored.

- Sustainability studies of the new water infrastructure should be conducted and assessment of the current water system should be made. Correction programs should be adopted and implemented concerning current water projects.
- The government should define its targets in the water sector. The UFW should be reduced based on a fixed timetable. Both the government and the private sector should cooperate to reduce the number of illegal connections, eliminate the use of domestic water quality for industrial and agricultural purposes and increase water coverage and duration to a wider number of the population.
- Sustainability of water consuming projects should be re-examined.
- The economical and environmental cost of pumping Disi water to Amman has to be justified and linked with better water conveyance and distribution networks on the short and long term.
- The agricultural sector must be evaluated for its economical and environmental feasibility. Agriculture in arid and semiarid ecosystems should not receive abundant water quantities.
- The government should redefine its water priorities. Comprehensive water study should be conducted to determine the ratios of water use per sector. This includes the environmental, economical and social factors in addition to the importance of recognition of the regional implications.
- The government should work on gradual removal of all subsidies on water supplied to agriculture, tourism and industry sectors. These economical sectors should pay for water price on the market price basis.
- The Government should work on improving water qualities supplied to the agricultural sector according to the Jordanian standards. Improvement should focus on wastewater treatment and reducing over pumping, and insuring proper storage, conveyance, distribution and utilization.
- Water saving techniques should be implemented at all levels. In addition, water recycling and reuse should be encouraged at all levels and sectors.
- Improved coordination between ministries dealing with water should be done, especially among the ministries of Water, Agriculture, Industry, Tourism and the Environment (GCEP), in addition to ensuring the participation of the public and civil societies consultation at all levels of decision making.
- Urgent measures should be taken to protect endangered ecosystems as in the Dead Sea basin, Azraq oasis, etc.

Coastal Zones

The Gulf of Aqaba

Aqaba is Jordan's only sea connection to the world. Jordan's Red Sea front is very limited and it does not exceed 27 km. The Gulf of Aqaba is the most northerly coral reef in the world with over 1000 species of tropical fish and 250 varieties of corals^[39]. Jordan tried to develop this area through the establishment of Aqaba Special Economic Zone Authority (ASEZA). Developments in the Gulf are limited to port facilities, medium-sized tourism and industrial zones in the southern coast. Development

projects in Aqaba are expected to increase as ASEZA promotes the area for more direct investment in almost all sectors. Therefore, it is expected that the current practices impacts on sustainability will increase.



The GR states that there are increased threats on the marine environment in Aqaba due to development activities; however, the GR does not include any recommendations on this issue.

The following points summarize the most important issues.

- The pressure on the coral reef is increasing. Divers contribute to the destruction of the coral habitat. The number of local and international divers is increasing.
- Port activities, which are expected to grow as a result of the FTAs agreements, would contribute to the damage of the corals.
- Currently, ASEZA has little power over the ports especially the polluting phosphate port, which continues to be the major source of pollution to the Gulf.
- The design of tourist facilities fragmented the northern Aqaba coastal beach. Hotels, diving centers, ports, etc., divided the beach into small private compartments. The public has access to a very narrow and limited area. Many wild fauna including sea turtles, crab etc. are not able to breed on a heavily fragmented beach.
- Aqaba has three main ports; the Main Port, the Container Port, and the Industrial Port. The original construction of these scattered harbors had huge impacts on the marine environment. The government is developing plans to relocate the harbors. The only current restriction is the high cost. This means that in the future if the government will have enough financial resources they will relocate the harbors, which will result in increased damage of the environment.
- The industrial complex in the south produces wide range of fertilizers and chemicals. One of the byproducts is gypsum. Gypsum is dumped in an open area. After several years of operation a mountain of gypsum was created. The authorities have no plans to deal with this environmental pollution. Generated dust affects the marine and terrestrial ecosystem and the human health.
- The Aqaba Master Plan includes plans for future inland lagoons, marinas and golf courses projects. These projects are expected to have negative impacts on the environment.

Recommendations

- The government represented by ASEZA should have more power to enforce its laws and regulations and ensure sustainable development in all sectors.
- The current plans to reallocate the harbor should be canceled. The existing harbors are not located in the best environmental place, but since damage already occurred ASEZ must not increase it by relocation of the harbors. However, plans should focus to increase the harbor's efficiency. The harbor authority should also conduct and adopt the principles of ISO 1400 for safe environmental operations.

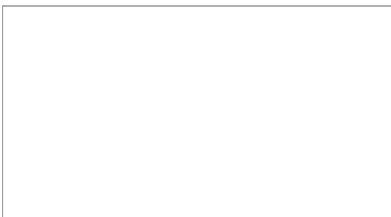
- An Environmental Management Plan should be conducted and implemented. This management plan should be transparent, and data should be available to public. ASEZA should monitor the implementation of such plan.
- The development plans for the middle and southern part of the gulf should protect having a continuous open beach. Tourist development plans should not get the privilege of controlling the open beach.
- ASEZA must prohibit dumping of industrial waste. It should require that the gypsum waste be removed or included in other industry or process. In some countries gypsum is treated and used in production of bricks.
- ASEZA should reconsider the Master Plan intention to include inland marina and lagoons.

The Dead Sea

The Dead Sea Basin extends on the Syrian, Lebanese, Jordanian, Palestinian and Israelis watershed. The Dead Sea is the lowest point on earth and the saltiest large water body. Salinity of the Dead Sea is 10 times higher than the Mediterranean Sea. The Dead Sea is characterized by its high concentration of minerals, which made it attractive for mineral extraction industries, beside the local, regional and international tourist attraction.

During the last three decades the Dead Sea area was subject to a number of unsuitable practices. The Dead Sea level lowered by around 25 meters and its total length (north south) declined by 50km. The southern part of the Dead Sea changed into vast evaporation ponds used by the mineral extraction companies. Current tourism plans would consume significant proportion of the Dead Sea shore leading to massive environmental landscape changes.

The GR recognizes the damages inflicted on the Dead Sea due to the implementation of different projects. The GR mentions that the production of the Master Plan for the Dead Sea area would consider the three sustainable development dimensions to maximize the economical benefit, protection of the environmental and natural resources and development of local communities. Apart from that, the GR did not propose any suggestions to protect the Dead Sea.



The following points are not mentioned in the GR:

- The lowering of the Dead Sea level is a result of massive water usage and diverting of all water resources, mainly the Jordan River. The current water inflow to the Dead Sea has amounted to be less than 23 percent of the historical Jordan River flows that used to reach the Dead Sea^[40]. This shows that the current water managements on the national and regional levels are not sustainable.
- The government of Jordan is currently promoting the construction of a water conduit to pump water from the Red Sea into the Dead Sea in an attempt to restore the Dead Sea level. This canal/conduit might partially solve part of the current water-lowering problem. However, the environmental and economical sustainability are not clear.
- The Governmental policies to develop the Dead Sea represented in (JVA Master Plan) were developed on national bases with limited environmental and social considerations, which -if combined with other plans in the region- will exceed the Dead Sea carrying capacity.

- The government planned to build around 36,900 hotel rooms between the areas of Suweimeh and El Mazra'a[41], which will lead to massive destruction of the natural ecosystem and landscape. Some of the 5 star hotels already implemented in the northern beach of the Dead Sea. The current political conflict slowed down the development of tourist facilities in the Dead Sea area.

Recommendations

- The Government needs to re-examine the water budget supporting the Dead Sea and its surrounding ecosystems on the national and regional levels and minimize the current negative impacts on water resources in the basin.
- A comprehensive environmental, social and economical sustainability of the Red Dead Canal need to be assessed on the national and regional level. In case the canal would be implemented, it should substitute for major water consumption currently devoted to the tourism and industrial sectors.
- The government should reconsider the original Development Master Plan with much emphasis on the environment. It is also requested to adopt sustainable development process of the Dead Sea area through protecting core nature reserves with a significant buffer zone in addition to the scattered archeologically important areas. The government is requested to support the recognition of the Dead Sea basin as Man and Biosphere Reserve under UNESCO.
- The tourism plans should be reassessed. Development of tourist area should be confined within the current development areas in the north and south of the Dead Sea, leaving a core area that includes Mujeb Nature Reserve with a buffer zone free of development[42].

V. Institutional Aspects:

Success of sustainable development process is based on the contribution of all stakeholders at all levels. The GR states that the Jordanian Government played an important role to introduce the different sustainable pillars at the planning, policy making, and implementation levels. The government in the GR tackled the institutional issue as if it was only limited to the development of women NGOs and the creation of National Information Center, which were linked electronically to Ministries. The way the GR addressed this issue shows how shallow the sustainable principles are adopted and understood.

Sustainable process is not yet deepened and has to be improved. The following points are very essential for the development of different institutions:

- The Jordanian Governmental institutions are characterized by being overstaffed and inefficient. This is one of the major problems facing the governmental performance. The Government in the last decades tried to reduce the unemployment rate by increasing the employment in the governmental sector. Most of the employed were not qualified or trained. Overstaffed institutions have high running cost especially salaries. The productivity of the overstaffed offices and departments are reduced. The government recognized this problem during the last years when the economical situation deteriorated. Measures to reduce the number of new employees will prevent the ministries from getting fresh enthusiastic and scientifically updated people. This problem also rose during the privatization process. No private company would accept to run overstaffed establishments. The government therefore

decided to reallocate high numbers of employees from establishments to be privatized. The government did not solve the problems since most of the overstaffed number of employees remained within the governmental responsibility.

· The presence of GCEP under the jurisdiction of the Ministry of Municipalities, Rural Affairs and the Environment does not ensure sustainable development. The ministry is committed to development. The environmental voice will not be free and independent.

- Inability of environmental institutions to adopt with newly signed agreement such as the Free trade agreements, new signing and ratification of conventions, which are not reflected in the environmental regulations and laws.
- Institutional overlap, the institutions in Jordan are not well designed. There is an overlap among different institutions. This resulted from the weak coordination between the different ministries and institutions. The Ministry of health have environmental department dealing with environmental health issues. Similar mandates and objectives are found within the Ministry of Industry and GCEP. Currently, several institutions including the Ministry of Water and Irrigation, Jordan Valley Authority Water Authority and Ministry of Municipalities govern water issues.
- More on regulatory issues includes:
 - Except from law number 12, for year 1995, there were no other environmental laws, bylaws, technical regulations or standards issued in relation to sustainable development.
 - Current laws and regulations are old and ineffective, contradictory laws are found within the same ministry or within ministries; current environmental regulations are not integrated; gaps in the regulations provide legal bypaths to abuse the environment, laws and regulations are inflexible and national laws don't coincide with international ones.
 - Weak enforcement and weak monitoring.
- The environmental and social concepts are not well incorporated in the decision making on different levels. This was very clear within the IMF negotiations, approval of world bank-IFC projects, and implementation and operation of many other projects. Development in Jordan did not include concepts of sustainability, environmental costs, cost of pollution, environmental health consequences, landscape values, etc.
- Environmental standards are not complete, and EIA bylaw is not approved.
- Lack of transparency.

Recommendations

- Ministry of the Environment must be established or GCEP should get independent powerful statues. GCEP should be activated and strengthened by financial, technical, legal, and human resources. GCEP should be equipped with strong legal mandate and comprehensive environmental laws and regulations.
- Current GCEP staff are not capable of producing these legal laws and regulations; therefore, regional and international cooperation assistance in this regard is needed.

- The current inter-ministerial committee needs to be trained on environmental issues as well as GCEP employees through development of capacities program.



- Sustainable development requires enforcement, strengthening and activating environmental laws and regulations. Laws aims to protect water, agriculture, air, etc needs to be linked and harmonized in a comprehensive manner, ensuring no duplications and gaps.

- The government is required to increase the awareness of the governmental official employees on the necessity of understanding the environmental concepts and consequences of actions.

VI. Findings

The Shadow Report concludes that the sustainable development process in Jordan requires stronger political commitment. The Governmental Report and the National Agenda 21 reports are correctly self-critical and recognize that there are many gaps. All reports show that the process could be much more effective if financial resources were allocated, a strong environmental body - Ministry of the Environment were created, and a comprehensive legal framework established.

The Shadow Report concludes that the Government of Jordan must take further immediate actions to overcome its development challenges. The government is called upon to launch a sustainability strategy to advance the principles of sustainable development.

The strategy should define targets and place strict deadlines to achieve them. Action plans should be developed and the whole process of putting strategies and projects should be dynamic and flexible in order to overcome technical and financial challenges.

Friends of the Earth

Originally founded as "EcoPeace" on December 7, 1994 FoEME came about as environmental non-governmental organizations from the Middle East met with the common goal of furthering sustainable development and peace in their region. Environmentalists agreed to join forces in an effort to promote the integration of environmental considerations into the regional development agenda.

As of 1998, EcoPeace officially became the Middle East chapter of [Friends of the Earth International](#), the world's largest international network of environmental organizations.

Since its foundation, FoEME has taken an active role in promoting integrated regional approaches to environmental issues and has taken the lead in representing Middle Eastern environmental NGOs in various international fora. The people and wildlife of our region are dependent on many of the same natural resources. Shared surface and sub-surface freshwater basins, shared seas, common flora and fauna species and a shared air-shed are some of the characteristics that necessitate regional cooperation. The Jordan River Basin, a major source of freshwater in a water scarce region, the Gulf of Aqaba, a highly sensitive eco-system giving life to arguably the world's most beautiful coral reef, and the Dead Sea, the lowest point on earth and the world's saltiest non-shallow body of water, are all examples of unique shared eco-systems in the region which necessitate regional cooperation if they are to be preserved.

In a region in which political relations are volatile and often tense, environmental NGOs have an

essential role to play in preserving our shared environment. Thus, FoEME represents a united voice of regional environmental NGOs that are committed to promoting the development of the region in an environmentally sustainable manner.

Objectives of Friends of the Earth Middle East:

- Strengthen environmental NGO capabilities to work collaboratively with governments in addressing environmental issues.
- Assess and monitor environmental implications of projects or activities in the region that are likely to have significant trans-boundary impacts. -Forge a common agenda among environmental NGOs from the region.
- Arrange for information collection and sharing to promote environmental advocacy and public education.
- Address transboundary or common regional environmental issues through effective coordination among environmental NGOs.
- Promote a positive attitude toward achieving sustainable development and peace in the region and promote the sustainable use of the natural resources and heritage of the region.

For more information visit Friends of the Earth web site at www.foeme.org or send us email at asultan@foe.org

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[3] Jordan Environmental Watch

[4] Jordan Agenda 21; towards sustainable development

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