# Environment and Climate Change Policy Brief
# Uganda

*2013-09-04*

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## 1. Introduction

This environmental and climate change Policy Brief has been written as an input to the Swedish results strategy process and in preparation of a new regional strategy document for Uganda[1].

The *purpose* of this brief is to briefly present key environmental and climate change challenges and opportunities in Uganda. Furthermore, the brief suggests issues for Sida to consider related to how the environmental challenges can be approached through development cooperation. The analysis was conducted as a desk study in two phases (February-March and August- September 2013) and is based on selected reports, research papers and statistics.

The Swedish Government has identified environment and climate change as one of three thematic priorities for development cooperation. This is reinforced in the Swedish policy on environment and climate change in development cooperation concluding that these aspects are a "central point of departure for all development cooperation"[2]. The Policy further requires that environmental impacts, effects of climate change and associated risks are assessed and integrated in analysis, planning, strategies, implementation and follow-up in Swedish development cooperation.

[1] This Environmental and Climate Change Policy Brief was written, at the request of Sida (Malin Krook, by Emelie César and Hanna Wolf at Sida's Helpdesk for Environment and Climate Change. The views expressed in this Environmental and Climate Change Policy Brief are those of the authors and do not necessarily represent the views of Sida

[2] Swedish Government Offices, 2009

## 2. Key environmental challenges, their causes and opportunities

Uganda's natural resource base is one of the richest and most diverse in Africa and Uganda's economy and the country's development are strongly depending on the sustainable management of natural resources and the environment. 85% of the population are highly dependent on natural resources for their livelihood. However, the environment of Uganda is under threat. This threat comes from both natural and human activities including; poverty, rapid population growth, urbanization, agricultural expansion, informal settlement development, industrialization and the impacts of climate variability and change.[3]

Located between the tropical high forests of Congo and the savannas of East Africa, Uganda has got a variety of ecosystems such as forests, wetlands, rangelands, open water bodies, agricultural landscapes and wildlife protected areas.[4] The resilience of ecosystems and its services is crucial for people's lives and livelihoods. It purifies air and water, helps buffer floods, it is responsible for nutrient cycles, decompose wastes, generates and preserves soils, supplies pollination, food and fibre production and creates possibilities for recreation.[5]

### 2.1 Key environmental challenges in Uganda

**Land degradation:** Land degradation is widespread and is the result of unsustainable farming and a growing fuel wood demand. The growing population pressure causes farmers to farm increasingly marginal land that is especially prone to land degradation. The demand for fuel wood decreases vegetation coverage which results in increased erosion. Other causes are overgrazing and soil compaction.

**Deforestation:** The deforestation rate in Uganda is very high (2.3 %), well above world and sub-Saharan average (0.6 %)[6]. The growing population puts high pressure on the forests. The largest cause of deforestation is transformation of forestland in to other land uses, mainly agricultural expansion. The high demand for fuel wood is also a driver of deforestation. Uganda depends on fuel wood for over 90 per cent of its energy consumption. Forest cover decline is most noticeable in privately and communally owned forests.

**Declining water resources:** Evaporation rates are generally high in Uganda and exceed precipitation in 90 per cent of the country. This reduces runoff, groundwater recharge and dry season stream flow. Declining water resources are a result of erosion, deforestation, unsustainable abstraction from groundwater resources, wetland degradation and pollution. The frequency of drought and the gravity of following impacts have increased.

**Transboundary water**: Lake Victoria is a shared transboundary resource of Kenya, Tanzania, and Uganda. Rwanda and Burundi are a part of the upper watershed that drains into Lake Victoria through the Kagera river. The Lake is part of the Nile River Basin system, which is shared by ten countries: Burundi, Democratic Republic of Congo, Egypt, Ethiopia, Eritrea, Kenya, Rwanda, Sudan, Tanzania, and Uganda. Environmental degradation of the lake leads to reduced fish stocks, decline of biodiversity, increased sedimentation and nutrient loads, resulting in eutrophication, increased wastes from industrial, municipal and mining activities, destruction of wetlands and loss of littoral habitat, and variable water levels.

[3] PEI homepage (accessed February 2013)
[4] Nema, 2006
[5] Miljöminister Lena Ek, 2013
[6] World Bank, 2012

**Loss of biodiversity:** Uganda has one of the richest biodiversity assemblies in Africa and possesses a rich natural endowment of mountains, forests and waterways. Historically, the biodiversity in Uganda has been threatened by political strife that resulted in deterioration of protected areas. Also, wildlife poaching, encroachment in protected areas for food crop production and livestock grazing, and land clearing for human settlement have all taken a toll on the natural resource base.

**Challenges related to climate change:** Due to Uganda's poverty and low income diversity the country is vulnerable to climate change. Climate change causing changes in precipitation and changes in temperature are likely to have serious implications for water resources, food security, natural resource management, human health, settlements and infrastructure. Through its dependence on agriculture, the country's livelihoods and food security are particularly vulnerable to the effects of climate change, given the high proportion of the country's population that depends on rain-fed agriculture. Since 1960, Uganda's average annual temperature has increased by 1.3°C, and rainfall has declined. More frequent extreme weather events including droughts, floods and landslides over the past several decades are also noted[7].

**Declining wetland areas:** Wetlands are a natural resource with high ecological and economic value. They provide vital ecosystem services such as water supply and filtration, groundwater recharge, waste treatment, sediment retention, flood control and climate modulation. Population pressures coupled with absence of effective management structures are contributing causes for declining wetland areas.

## 2.2. Special focus on environment and the health sector

Indoor and outdoor air pollution, unhygienic or unsafe food, improper waste disposal, absent or unsafe vector control and exposure to chemicals are major environmental health hazards in most African countries. About 10 per cent of the disease burden in Africa is attributable to inadequate water, sanitation and hygiene, particularly affecting child health[8]. Furthermore, the poor and vulnerable often pay more for clean and safe water, sanitation, environmental health services and have long distances to clinics.

Diarrheal diseases are strongly linked to contaminated water and lack of access to basic sanitation.[9] WHO estimates show that over 27 000 people in Uganda die every year due to lack of access to safe drinking water and sanitation.[10] The table shows figures for Uganda, Kenya and Rwanda for comparison. The table shows of high number of deaths per year due to indoor and outdoor air pollution.

Biomass fuel such as wood and charcoal causes indoor air pollution resulting in respiratory diseases. Almost 20 000 people in Uganda die every year due to indoor air pollution.[11] Especially women, children and elderly are exposed. Reducing indoor air pollution will yield benefits for the poor, and help achieving the MDG 4 (reducing child mortality), and 5 (improve maternal health).

[7] Adaptationlearning.net
[8] UNEP, 2013
[9] CSA, 2012
[10] WHO, 2009
[11] WHO, 2009

**Table 1.Estimated deaths and DALYs[12] attributable to selected environmental risk factors**

| WHO estimates | Water Sanitation & Hygiene | Indoor air pollution | | Outdoor air pollution | |
|---|---|---|---|---|---|
| **Country** | **Diarrhoea DALYs/1000 capita per year** | **Deaths/year** | **DALYs/1000 capita per year** | **Deaths/year** | **DALYs/1000 capita per year** |
| Kenya | 24 | 14 300 | 13 | 600 | 0,2 |
| Rwanda | 65 | 12 500 | 46 | 300 | 0.6 |
| **Uganda** | **35** | **19 700** | **23** | **100** | **0,1** |

*Source: WHO (2009)*

The leading causes of morbidity and mortality in Uganda are malaria, malnutrition, respiratory tract infections, HIV/AIDS, and tuberculosis[13].

Malaria is the single most serious disease in Uganda when it comes to causing illness and number of death. It is only in the high altitude areas of the southwest, west and east that the malaria transmission is generally low. However, changes due to rising temperatures with climate change, malaria could extend to higher altitude areas as well.[14] Climate change imposes additional burden on the health services with consequences of loss of human lives, particularly among the most vulnerable age groups, the young and the elderly. Heavy rainfall, followed by flash floods and floods has resulted in the outbreak of water-borne diseases such as diarrhoea and cholera. Prolonged dry spells can result in outbreaks of respiratory diseases[15].

Uganda has been successful in achieving the MDG target of reversing its spread of HIV/AIDS, with the rate of adult prevalence standing at 6.4%. However, an upward trend in new infections can be noted since the 1990s, with up to 130 000 newly HIV-infected people in 2010.[16] Adequate nutrition, water supply and sanitation is of utmost importance and key factors in preventing infections associated with HIV/AIDS, and in the quality of life of people living with the disease. People living with AIDS are more susceptible to water-related diseases than individuals in good health.[17] Hence, communities with high HIV/AIDS prevalence are more vulnerable to environmental disasters and future impacts of climate change, such as droughts and flooding especially when appearing repeatedly. A key factor in human development and economic productivity is adequate nutrition. Malnutrition is a serious problem, indicating that socio-economic human rights are not fulfilled. Data from the previous three demographic health surveys, reports high levels of child and maternal under-nutrition that have persisted over the past 15 years.[18] The high level of undernourishment (39 %) has large consequences for health, productivity and education.[19] Climate variability e.g. droughts and floods leads to severe food shortage and malnutrition. In Uganda, around 3.6

[12] *Disability-adjusted life year (DALY) is a measure of overall disease burden, expressed as the number of years lost due to ill-health, disability or early death.*
[13] IMF, 2010
[14] MoFPED, 2010
[15] Few, R., et al 2004
[16] AfDB et al, 2012
[17] UNICEF, 2003
[18] IMF, 2010
[19] WHO, 2009

million people live in hazard zones at high risk of droughts.[20] Extreme weather events are expected to become more common due to climate change.

## 2.3. Special focus on growth strategies connected to the agricultural sector

Agriculture is a critical part of Uganda's economy. It accounts for approximately 25 per cent of Gross Domestic Product (GDP) and 50 per cent of total exports. Half of the agricultural labour force is female farmers, focusing mainly on food rather than cash crop production. Approximately 70 per cent of agricultural production is for subsistence purposes[21]. Growth originating in the agricultural sector is found to be two to four times as effective as growth originating in the non-agricultural sector in increasing incomes of the bottom third of the income distribution[22].

Uganda has greatly diversified its export structure and moved away from only producing coffee. Ugandan trade is not only with industrial cash crops but also with food staples - across borders. Uganda is the largest source of locally procured maize in Africa that trade with the World Food Program. Uganda export figures was at the same level as average in the world during 2000–07, much better compared to its neighbouring countries. Food staples in Uganda remain less expensive than in most neighbouring countries, which allow Ugandan farmers to compete with their food products across borders[23].

Sustaining or improving the productivity of agricultural land is crucial to increasing growth and raising the incomes of the poor, perhaps the two most prioritised objectives of Uganda's government. Still, the government fails to prioritise the agricultural sector in national and local planning and resource allocation which causes a decline in agricultural productivity.[24]

**What are possible areas for support that can generate growth and jobs in this area?**

There is a need to make the small scale agricultural production more commercially viable. More jobs can be generated if farming is looked upon as a business rather than only for household subsistence. For that, more pro-rural policy and strategy interventions are needed to improve investment climate, to have better rural roads, to make land market more flexible and land rights clearer, to improve access of smallholders to finance, to enhance the provision of quality agricultural services, increased knowledge, strategic regional focus, e.g. investments in the north of Uganda. "It is a complex multisectoral agenda with high pay-offs"[25]. But to raise productivity and create more income generating on and off-farm jobs, the urban productivity needs to rise as well to create a demand[6].

To achieve environmental sustainability "Business as usual" is not an option. The main challenge of agricultural development is to increase the productivity of agriculture in a sustainable manner. And farming communities, farm households, and farmers should be viewed as both producers and managers of ecosystems. A sustainable agriculture development could maintain and enhance environmental and cultural services while increasing sustainable productivity and diversity of food, fiber and biofuel production. For that, it will be important to assess the potential environmental, health and social impacts of any technology, and to implement the appropriate regulatory frameworks. For example identify related

[20] Preventionweb, 2013
[21] Ruhanga, R. 2010
[22] Zorya et al 2012
[23] Ibid
[24] Ruhanga, R.2010
[25] Zorya et al 2012

environmental risks by e.g. fertilisers and pesticides if used inappropriate as well as related health risks[26].

## 3. What are the effects of the environmental problems

### 3.1 Impacts on poverty

Uganda's population growth rate of 3.2 % is one of the highest in the world.[27] The current population is 34.5 million.[28] Uganda has already met the MDG target of halving poverty by 2015. Despite this progress, the absolute number of poor people has increased due to high population growth[29] and over 24 % of the population, more than 8 million lives in extreme poverty.[30] Poverty is more serious in rural areas than in urban areas – 34 % and 14 %, respectively, and inequality remains high.[31] There has been significant progress towards reducing the share of the population suffering from hunger but still around 22 % of the population is undernourished and 16 % of all children under five years of age are underweight.[32]Although some progress has been made the Human Development Index (HDI) for Uganda is still low, ranked 161 of 187 countries.[33]

For many of the poor people in Uganda access to land and land rights, water, forests, fisheries and other natural resources is key to improved livelihood opportunities. Agriculture is a main source of income and employs almost 75 % of the labour force.[34] Of the Ugandan population, 87 % lives in rural areas out of which around 10 million, women, children and men live below the national rural poverty line.[35] Many are poor farmers living in remote areas scattered throughout the country. Agricultural productivity is threatened by environmental challenges e.g. severe land degradation and extreme weather events e.g. droughts and floods, which are expected to become worse due to climate change. Moreover, increase in agricultural production to feed the growing population is in turn a major driver of deforestation and degradation.[36] Poverty and rapid population growth are the primary causes of biodiversity loss, threatening the existence of species, ecosystems and eco-regions throughout Uganda, and there are indications that the depletion of natural resources and the loss of biodiversity are accelerating.[37]

Inequitable and insecure land rights contribute to poverty, food insecurity and lack of power and choice. In Uganda women have a legal right to land however, customary practice favours male inheritance of land so that women's land rights tend to be limited to access. Women's marginal land ownership means they have limited decision making power over land use. In Uganda 70 % of all women are employed in the agricultural sector and only 20 % have legal access to land. Women often lack awareness about their legal land rights.[38]

Biomass is the main source of energy accounting for over 90 % of total energy consumption. Electricity supply and distribution is still very limited and tariffs remain unaffordable by the

[26] McIntyre, et al.. 2009
[27] MoFPED, 2010
[28] AfDB, 2012
[29] IFPRI, 2013
[30] IMF, 2010
[31] MoFPED
[32] IFPRI, 2013
[33] UNDP, 2013
[34] IMF, 2010
[35] IFAD, 2012
[36] Nabanoga et al, 2010
[37] MoFPED, 2010
[38] IMF, 2010

majority of the population. The demand for fuel wood and charcoal as sources of energy has caused enormous deforestation. Furthermore, the high dependence on wood fuel exposes mainly women and children to indoor air pollution causing respiratory health issues. For more information regarding environment-health linkages see chapter 2.2.

Water is a human right but access is uncertain in many places. Access to adequate water and sanitation is crucial for human dignity and it is a prerequisite for the realization of other human rights. In Uganda, 72 % of the population have access to an improved water source (95 % in urban and 68 % in rural). Around 66 % in both urban and rural areas lack access to adequate sanitation.[39]

The emerging increase in urban population has led to growth of slums and informal settlements, and inadequate housing without adequate sanitation. Urbanisation leads to impacts on the nearby environment (e.g pollution into land and water due to lack of sewage systems and waste management). Furthermore the economic growth in urban areas has led to increased emissions due to e.g. an increase in number of vehicles and industrial activities.[40]

## 3.2 Impacts on economic development

Uganda is dependent upon its natural resources (e.g. agriculture and livestock, energy, mining, tourism) for economic development. The economy and the welfare of the population are linked to the natural environment and are, therefore, highly vulnerable to environmental degradation, and climate variability and change.[41] Climate change with expected increase in temperature and change in rainfall patterns will lead to more frequent extreme weather events e.g. droughts and floods which will affect food security, health and economic development. For example, a temperature rise of 2 degrees could eradicate most of Uganda's coffee production, and risk losing 40 % of export revenues.[42]

Although declining, agriculture remains an important economic sector not only because it employs the majority of the labour force but also because it provides the basis for growth in other sectors such as manufacturing and services. Agriculture is a prioritised sector and has potential to significantly contribute to economic growth and poverty reduction. However, agricultural productivity is threatened by land degradation and climate change.[43] Impacts of environmental deterioration and degradation and associated losses have been estimated to be 4-12 % of GDP. [44]

Fish exports are the second largest export earner for Uganda and the number of people depending on the sector has increased from 700,000 to over 1.2 million people. However, in recent years the sector has experienced a decline in fish catch which has affected the economy mainly due to loss of export earnings. Statistics show that fish catches from Lake Victoria are declining and in Lake Edward and George catches are almost getting extinct, mainly due to destructive fishing methods.[45]

Forestry plays a significant role in national development and economy through contribution to energy and industrial activities and it is also a high value in terms of biodiversity and

[39] World Bank 2012
[40] IMF, 2010
[41] MoFPED, 2010
[42] MoFPED, 2010
[43] IMF, 2010
[44] MoFPED, 2010
[45] IMF, 2010

ecosystem services. Deforestation is estimated at 2.3 %/year[46] mainly due to increasing demand for agricultural land and fuel wood by the rapidly growing population.[47]

The oil findings in 2006 is seen as a mean to achieve the ambitious goals of Vision 2040, to transform Ugandan society from a peasant to a modern and prosperous middle income country within 30 years.[48] In many other African countries oil wealth is strongly linked with increasing corruption in public affairs, political instability, environmental degradation, and increasing inequality.[49] To make the oil findings a blessing, not a curse, Uganda needs to maximize social benefits through appropriate investment and prudent macroeconomic management, as well as improve transparency, regulation and monitoring.[50]

Moreover, Uganda is endowed with a variety of mineral deposits and the mining sector continues to grow. Limited access to appropriate technologies and use of inappropriate technologies is responsible for low productivity of the sector and environmental degradation.[51] Furthermore, Uganda's economic development is highly dependent on progress within the energy sector.[52] Limited access and use of energy significantly slows down economic and social-transformation. Most of the biomass used (92 % of total energy supply) is woody biomass energy (charcoal and firewood) which exploits forest resources and is not sustainable.[53]

### 3.3 Impacts on current and potential conflict

Personal safety and security of property are crucial for economic growth and development. [54] Uganda's rapid population growth puts pressure on land resources and has created serious socio-economic problems, including; land fragmentation, increasing land disputes, loss of forest cover and environmental degradation.[55] In general, decreasing natural resources combined with population growth have increased competition around land and water.[56]

Tenure insecurity in Uganda is a source of conflict and disputes: within families, between groups and between communities. Overall, land issues are increasingly politically sensitive. Specific issues are land tenure insecurity in post-conflict Northern Uganda; disputes over land expropriation by government; the implications of oil exploration and mining for local land tenure systems and rights, in particularly for pastoral livestock systems; and accusations of land grabbing in rural and urban areas.

Land scarcity is causing disputes. Conflict over pasture and water access have occurred in central and Northern Uganda as landowners have fenced their holdings and excluded herders who had access rights under customary agreements. Furthermore, conflict occurs when refugees and Internally Displace People return home and customary lands of many of these displaced peoples are occupied and claimed by others. [57]

[46] World Bank 2012
[47] IMF, 2010
[48] National Planning Authority, 2013
[49] AfDB, 2009
[50] World Bank, 2013
[51] IMF, 2010
[52] MoFPED, 2010
[53] IMF, 2010
[54] MoFPED, 2010
[55] IMF, 2010
[56] Ruettinger, 2011
[57] Hilhorst, 2012

Land grabbing by domestic actors is a growing concern. There are many examples were families have been evicted from their lands losing their homes and livelihoods including access to clean water due to private companies activities. Land grabs can often be seen as water grabs, as investments are mainly done for water-rich lands, having significant impact on water access and availability. Water conflicts typically arise between local communities and private companies over access to water or because of negative impacts on water resources through e.g. pollution.

Moreover, in Uganda, conservation areas make up around 26 % of the total land mass. Growing pressures from increased population, degrading natural resources, in particular land and water, and shrinking communal lands have led to a number of conflicts around these areas.[58]

Climate change greatly contributes to conflicts in Uganda. For example, the frequent scarcity of pasture and water resulting from droughts is a major cause of intra and inter-district as well as inter-regional conflicts.[59] Extreme weather events e.g. floods and droughts are expected to become more frequent due to climate change which may be a risk for increasing conflicts.

Furthermore, Uganda's transboundary resources e.g. water resources - the Nile, Lake Victoria, and oil are potential areas of conflict. For example, Uganda's relations to Congo have been tense since the discovery of oil, as both countries seek to clarify the border delineation on the lake in their favour, in particular the ownership of small Rukwanzi Island.[60]

## 4. Policy framework for managing environmental challenges

This section provides brief information on Uganda's national development priorities, how environmental aspects are mainstreamed into policies, and how the environmental challenges are addressed.

The Ugandan, government has put in place an institutional, legal and policy framework to manage the efficient use and governance of the natural resources base: the National Environment management Policy (1994); Uganda Forestry Policy (2010); the Energy Policy for Uganda (2002); National Environment Act (Cap 153); National Forestry and Tree Planting Act (Act 8 of 2003), etc. However, the level of compliance to these ENR policies, laws, regulations and standards is still very low leading to misuse and degradation of the environment[61].

Requirements under the various laws and regulations have created a demand for environmental services such as Environmental Impact Assessment (EIA) and Environment Audits (EA). These processes provide opportunity for mainstreaming environment and improving resource use efficiency in these developments[62]. EIAs have grown from 10 in 1996 to about 2128 projects in 2008[63].

Uganda has been using economic instruments (EI) for environmental management for over ten years. Some EIs have been working and some instruments needs to be thoroughly evaluated and adjusted in order to achieve the desired outcome.[64]. The use of economic and

[58] Ruettinger et al, 2011
[59] GoU, 2007
[60] IIED, 2011
[61] Uganda Government, Vision 2040, Draft.
[62] NEMA 2010
[63] Atukunda, A. 2009
[64] UNDP-UNEP Poverty-Environment Initiative, 2009

social incentives as an approach to environmental regulation has provided a basis for payment of fees, levies and charges under the permit and license system.[65]

The National Environment Management Authority (NEMA) was established 1995, and is the principal agency responsible for the management of the environment. NEMA is using enforcement measures such as environmental restoration orders, improvement notices (usually after attempts at achieving compliance have failed), but they usually restrain from taking cases to court. Enforcement challenges include insufficient capacity of law enforcers, both in terms of environmental law and management expertise and equipment and facilitation, thereby underscoring the importance of continuous training and capacity building; inconsistent political positions and statements on the environment, especially during election undermine the integrity of the environment. The challenge is also to increase the pursuit of both civil and criminal sanctions for environmental violations.

As part of efforts to ensure effective management of Uganda's environment and natural resources, several policies and institutions have been put in place. Despite these efforts the country's natural resources continue to be degraded, and this jeopardises both individual livelihoods and the country's economic development[66]**.**

## 4.1 National priorities

The Uganda national development plan for 2011/11- 2014/15 includes environment issues mainly as a sector of its own. The main focus of the plan are Growth, Employment and Socio-Economic development and the close link between the environment, economy and social development is hardly mentioned. The focus of environment and natural resources policy is on securing natural capital and regulating its use rather than commercial opportunities arising from this use. Commercial agriculture, irrigation and oil refining are dealt with outside the sector hence why it is important to mainstream environmental awareness and concerns in other sectors to ensure that each uses of natural capital is done in a sustainable manner[67].

The following three objectives are prioritised within the sector environment:

- Restore degraded ecosystems (wetlands, forests, range lands and catchments) to appropriate levels.
- Ensure sustainable management of environmental resources and minimize degradation
- Identify and address emerging environmental issues and opportunities

Uganda's National Adaptation Plan of Action (NAPA) identifies the following prioritised areas: Community Tree Growing Project, Land Degradation Management Project, Strengthening Meteorological Services, Community Water and Sanitation Project, Water for Production Project, Drought Adaptation Project, Vectors, Pests and Disease Control Project, Indigenous Knowledge and Natural Resources Management, Climate Change and Development Planning Project.

## 4.2 Mainstreaming of environment and climate change in the policy framework

Pro-poor economic growth and environmental sustainability needs to be integrated and at the centre of all most fundamental policies, systems and institutions in order to fight poverty and preserve the ecosystems that people rely on. This approach is known as poverty-environment mainstreaming and it essentially aims to integrate the linkages between the environment and

[65] *Environmental Regulation in Uganda: Successes and Challenges', 3/1 Law, Environment and Development Journal (2007), p. 20,*
[66] Ruhanga, R.2010
[67] Yaron et al, 2004

poverty reduction into government processes and institutions, thereby changing the very nature of its decision-making culture and practices[68].

Experience shows that better environmental management can contribute greatly to improving health, resilience[69] to environmental risks, economic development and livelihood opportunities, especially for the poor. The Government of Uganda has acknowledged this important link and has stated their intention to mainstream the environmental issues in every sector of the economy. The final result of that work is yet to be seen but some steps on the way can be reported.

As part of the Poverty-Environment Initiative PEI programme[70] Uganda was provided with financial and technical assistance to set up institutional and capacity strengthening programmes and carry out activities to address the particular poverty-environment context. The aim is to integrate poverty-environment linkages into policy processes and the resulting policy measures. The PEI programme was finalised in 2009 and although the Government's commitment was said to be low, some achievements have been reported;

- National Development Plan formulation was influenced by evidence and tools for economic instruments for environmental management and promoting pro-poor growth, also helping engage stakeholders in the Energy, Transport, Water and Sanitation and Finance Sectors.
- Commitment by the Parliamentary Committee on Natural Resources to advocate for increased budget allocations for P-E linkages and thirteen districts have committed to address environmental issues by developing and implementing district environmental ordinances and by-laws.
- Successful integration of P-E linkages into the new NDP, in which environment and sustainable use of natural resources now constitute a main objective, as a result of that NEMA supported by PEI engaged in the NDP formulation process.

## 4.3 Governance, enforcement and implementation and capacity constraints

In Uganda, good governance is facing increasing challenges with a recent slide from 126th to 130th of 180 in the country's ranking in Transparency International's (TI) Corruption Perception Index. There is also a growing disparity in poverty levels - the Gini Index of inequality is increasing - with large regional differences partly due to prolonged conflict in the north[71].

Worldwide Governance Indicators (WGI) project reports aggregate and individual governance indicators for 215 economies over the period 1996-2011, for six dimensions of governance: Voice and accountability, Political stability and absence of violence, Government effectiveness, Regulatory quality, Rule of law and Control of corruption.

For Uganda the indicators shows that over the last ten years no significant development stands out. Which in itself is a result worth reflecting over, see figure 1 below[72].

[68] UNDP-UNEP Poverty-Environment Initiative, 2009

[69] The ability of an individual, a community, a country or a region to anticipate risks, respond and cope with shocks and stresses, while addressing the underlying root causes of risks, recover, and continue to develop. Sida's working definition of resilience, January 2013

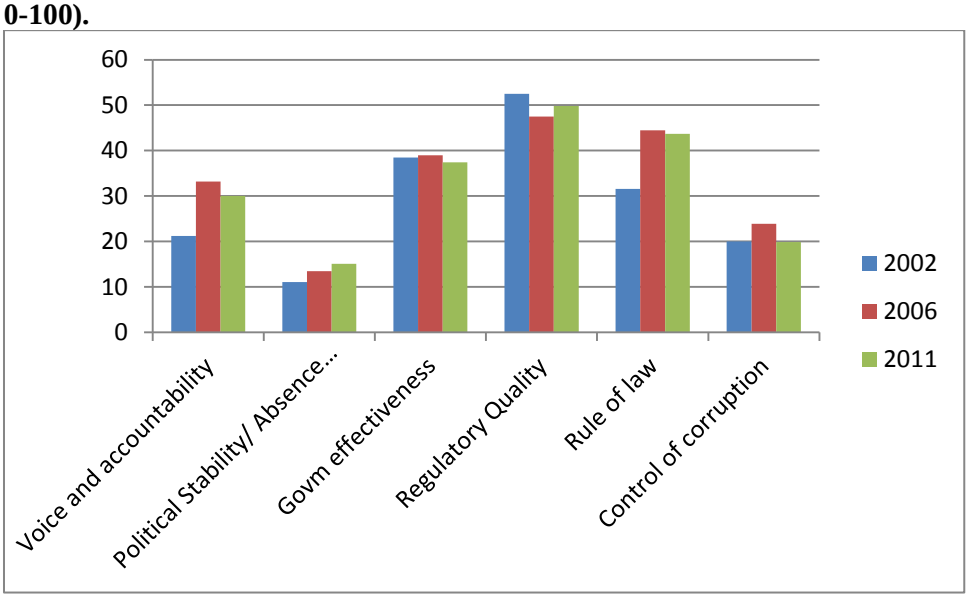
[70] The Poverty-Environment Initiative (PEI) of the United Nations Development Programme (UNDP) and the United Nations Environment Programme (UNEP) is a global UN-led programme that supports country-led efforts to mainstream poverty-environment linkages into national development planning.

[71] Hepworth, N D, 2010

[72] Kaufmann et al, 2010

The indicators Rule of Law and Voice and Accountability have improved the most. Rule of law reflects perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. And the indicator Voice and accountability reflects perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media.

**Figure 1. Comparison of six different governance indicators for Uganda (2011) (percentile rank 0-100).**




*Source: Authors, based on World Governance Indicators by Kaufmann et al., 2010. Data from 2011 collected from the website http://info.worldbank.org/governance/wgi/sc_country.asp*

Governance aspects need to be considered when aiming at improving implementation of environmental legislation and other environmental measures. There is a growing consensus emphasising that governance aspects have a strong effect on environmental actions and outcomes. Measures that strengthen important human rights principles such as the rule of law, transparency and public participation may be equally or more important than specific environmental policies or projects in order to improve environmental outcomes. Improving environmental outcomes is thus not only dependent on legal frameworks and the capacities of the environmental authorities and sector ministries, but also largely on external factors that provide the 'enabling environment'[73].

## 5. Risks and opportunities

*Agriculture*

Increased agricultural productivity contributes to economic growth and improved livelihood opportunities. At the same time a more intense agricultural production contributes to environmental degradation and climate change through unsustainable utilization of natural resources that results in loss of soil fertility, pollution of water ecosystems from e.g. use of agrochemicals; deforestation; agricultural gas emissions that contribute to climate change; and destruction of habitat for flora and fauna.

Improving sustainability and reducing negative environmental effects within the agriculture sector includes resource conservation technologies, improved techniques; research on the

[73] Ölund Wingqvist et al, 2012

relationship of agricultural ecosystem services and human well-being; economic and non-economic valuations of ecosystem services; increasing water use efficiency and reducing water pollution; biological substitutes for agrochemicals; and reducing the dependency of the agricultural sector on fossil fuels.[74]

Support to land administration, policies and legislation that provides increased tenure security among small scale farmers, both women and men, can give incentives to invest in the land with possible productivity increase and natural resource improvements as a consequence. Tenure security and increases land investments. Investments in land reduce degradation and increases agricultural productivity making households more resilient to external shocks. Furthermore, land certification processes empower women and women's right to land. Hence, support to land policies and legislation and land administration programmes is strongly linked to all three thematic priorities of the Swedish government as well as to several of the MDGs (MDG1 – Eradicate extreme poverty and hunger, MDG3 – Promote gender equality and empower women, and MDG7 - Ensure environmental sustainability).

Lending to agriculture, faces many barriers; e.g. small size of loans and related high transaction costs; seasonality of agricultural production leading to a lag between investment needs and expected revenue; fear of borrowing; lack of acceptable collateral; and climate change related risks (e.g. Uganda does not have insurance for agricultural failure)[75]. Weather shocks (which are expected to become worse due to climate change) can trap farmers and households in poverty, but the risk of shocks (e.g. droughts and floods) also limits the willingness of farmers to invest in measures that might increase their productivity and improve their economic situation.[76] Weather-based index insurance is a relatively new risk management tool that links insurance pay outs to objective, measurable variables like rainfall or temperature. Insuring against weather-related crop failure allow farmers to better manage risk and encourage them to invest in agricultural activities that require a higher initial investment. Index insurance helps farmers protect their investments, reduces vulnerability and increases resilience.

Moreover, working through civil society organisations, supporting small scale savings and loan schemes can be one possibility to overcome some of the barriers. Strengthening small scale female and men farmers' capacity to efficiently participate in agricultural markets can be through improved extension services and education, as well as support organisation, e.g. farmers unions.

*Health-environment linkages*

Pollution, natural resource depletion and human health are closely linked, and particularly so in Uganda, where the environmental degradation poses a major risk to human health. Indoor and outdoor air pollution, unhygienic or unsafe food, improper waste disposal, absent or unsafe vector control and exposure to chemicals are major environmental health hazard and adequate water and access to sanitation and hygiene is of outmost importance for people's health. Biodiversity provides goods and services such as food and medicinal plants that promote human health. However, rapid population growth, urbanization, agricultural expansion, land degradation and climate change are threatening these services. Environmental-health issues deserve a high priority consideration in national development. [77]

[74] McIntyre. 2009
[75] UNDP-UNEP Poverty-Environment Initiative, 2009
[76] IFAD, 2011
[77] UNEP, 2013

For Uganda, health and environment is interlinked. Opportunities to address health-environment related issues are listed below:

- Adequate knowledge of and attention to the impact of climate change and support to adaptation programmes can reduce illness and mortality from vector borne diseases such as malaria, dengue and various gastrointestinal illnesses that are presumed to increase in some areas due to climate change.
- By increasing the awareness of the connections between environmental and health among men, women, boys, girls, authorities, government agencies etc, more cost efficient and sustainable health patterns can be promoted.
- Including environmental or biological control of vectors in disease programmes, for example dengue fever or malaria-carrying mosquitoes can reduce the risk of accumulation of toxic chemical substances in sediments and organisms.
- By liaising with relevant stakeholders (such as sector authorities for water/sanitation, energy, infrastructure and urban development, universities and civil society organisations (CSOs), sustainability can be improved as they can provide complementary and supporting services such as new knowledge and technologies, energy supply, water and sanitation, health and education services.
- By supporting preventative HIV/AIDS-projects and programmes one can prevent the negative effects that a higher HIV-prevalence may have on the environment and people's livelihoods.[78]
- Promote adequate data and information systems for decision making.

Some challenges and risks related to health-environment linkages include

- A one-sided focus on Health Services and Systems and curative interventions without addressing public health issues such as prophylactic care or factors behind environmental burden of disease can affect cost effectiveness of programmes and projects negatively.
- Inadequate attention to the need to address safe disposal of clinical and other health-care waste, such as syringes, excess medication (e.g. antibiotics and estrogens), and pesticide-impregnated mosquito nets, can affect water quality and have negative impact on biological life.

*Energy*

Secure low carbon high resilient energy supply is a challenge. Energy development in Uganda and environmental damage are intricately related (e.g. the link between high dependence on biomass and deforestation). The energy sector is not only important for other sectors of the economy, it is also strongly linked to poverty reduction, increased resilience and improved livelihoods. The energy sector has bigger environmental impacts than most other economic sectors[79]. Current institutional and legal weaknesses, especially in the areas of the downstream oil industry, renewable energy, energy conservation and efficiency pose a threat to the environment.

The country's oil findings are considered crucial to spur economic growth and development in the country. However, extraction of oil is a serious threat to the environment (e.g. water pollution) and is a risk to e.g. access to clean water, and fishing livelihoods. Moreover, hydropower is seen as a potential source of energy. The government of Uganda is scaling up

[78] HIV/AIDS have devastating consequences for a household. HIV/AIDS have negative effects on household assets and resources due to e.g. lack of income generating activities, consequently deepening poverty. It also undermines ecosystem management through loss of skilled people and managers which increase short-term exploitation of environmental resources. (Shackleton et al 2008)

[79] IIED, 2011

the production of hydroelectric power by expanding existing dams and commissioning new power-generation projects[80]. Hydropower is a risk to biodiversity and ecosystem services as it transforms aquatic systems. Furthermore, change in precipitation due climate change may cause the hydropower dams to generate less power than expected.

## 6. Integrating environment and climate change into suggested results areas

The purpose of this chapter is to provide background information on how environment and climate change aspects relates to proposed Swedish Result Areas and point to possible general areas for environmental mainstreaming for Sida to consider[81].

### 6.1 Entry points for integrating environment and climate change into the suggested results areas

The Swedish policy on environment and climate change in development cooperation states that environmental impacts, effects of climate change and associated risks should be assessed and integrated in analysis, planning, strategies, implementation and follow-up in all Swedish development cooperation. This requires "identifying and properly addressing any impacts – positive and/or negative –that a development intervention may have on the environment or the climate/.." The policy establishes that environmental and climate aspects are a central basis for all development cooperation, being both a sector in its own right and a cross cutting issue.

The fact that environment and climate change is not given as a specific entry points makes it crucial to integrate these perspectives in the other results areas in a smart and effective way in order to lead to more sustainable programmes and results.

Mainstreaming environment[82] and climate change can result in a better understanding of the capabilities of environmental assets, the consequences of environmental hazards, and the real or potential impacts of development on the environment. Such understanding can consequently improve decisions, especially if there is a systematic institutional framework for making such decisions.

Below follows examples of possible areas for environmental mainstreaming in line with the entry points for Sida to consider.

- **Entry point 1: Förbättrad barna- och mödrahälsa (MDG 4 och 5) inklusive förbättrad tillgång till SRHR**

Ecosystem services are essential to the wellbeing of all people, everywhere in the world. In a very fundamental sense, humans need ecosystems such as food, water, clean air, shelter and relative climatic constancy. Climate variability and change effect rainfall, river flows and agricultural and can cause food insecurity. Climate change may also modify exposure to health risks such as malaria.The causal links between environmental change and human health

[80] IIED, 2011

[81] When the results areas are further developed the Helpdesk can assist in identifying more specific entry points for environmental integration in the results areas including matching indicators as well as identify some possible actors, programs or policy processes

[82] Environmental mainstreaming can be defined as. "the informed inclusion of relevant environmental concerns into the decisions of institutions that drive national, local and sectoral development policy, rules, plans, investment and action"( Barry Dalal-Clayton and Steve Bass ,2009)

are complex because they are often indirect, displaced in space and time, and dependent on a number of modifying forces.

Health and environment-related decisions are often dealt with separately by different sectoral agencies and various stakeholders. Increased cross-sectoral governance on health and environment improves decision making by demonstrating the relevance and cost-efficiency of a coordinated approach to policy making for sustainable development.

Indoor and outdoor air pollution, unhygienic or unsafe food, improper waste disposal, absent or unsafe vector control and exposure to chemicals are major environmental health hazards in most African countries. For example diarrheal diseases are strongly linked to contaminated water and lack of access to basic sanitation and an estimate by WHO show that over 27 000 people in Uganda die every year due to lack of access to safe drinking water and sanitation.[83] See chapter 2.2 for an overall picture of the health situation in Uganda as well as chapter 5 where opportunities to address health-environment related issues are listed.

Sweden has a comparative advantage in overall strengthening of health institutions. Sweden also has an advantage in working with environment and climate change as cross-sector and in Uganda this approach can be further developed in order to lead to more sustainable results. Presence in the health sector provides an important opportunity to raise awareness of the importance of preventive health care and the right to a healthy environment. Investments in water and sanitation, improved cooking facilities, better access to electricity, controlled use of non-hazardous agro-chemicals and better management of waste reduce the need for health services.

Swedish support can also lead to avoiding the long-term and immediate human, social and economic costs of ignoring the critical linkages between human health and environmental conditions. Access to health services is critical for improving the child and maternal health.

- **Entry point 2, 3 and 4: Ökad innovation, produktivitet och handel; Förbättrad kompetensutveckling och tillgång till produktivt arbete; Ökade möjligheter för kvinnor att starta och driva produktiva företag**

Improving poor people's access to the labour market and decent employment requires concerted efforts by governments, civil society, trade unions and the private sector and in cooperation with businesses. It also requires that people have suitable knowledge and capacity to match the labour market's needs. Increasing the employability of poor people, particularly women and youth, allows them to contribute to and benefit from economic growth. For example in the agriculture sector, which today employs the majority of the population the need for capacity building is huge. Despite agriculture development being a prioritised area for the Ugandan Government, the agricultural productivity is declining. Chapter 2.3 give ideas on possible areas for support that can generate growth and jobs in the agriculture sector.

For Uganda, entry point 2, 3 and 4 could be seen as strongly linked to the agricultural sector. Smallholder farmers (women and men) have a crucial role to play in increasing agricultural productivity and growth, while conserving and enhancing natural resources. The productivity of farms can be improved through economies of scale and the adoption of more technically-efficient production systems. However, long-run productivity growth for the sector as a whole requires continuous technological progress, as well as innovations and new business models.[84]

[83] WHO, 2009
[84] OECD, 2013

Sustaining or improving the productivity of agricultural land is crucial to increase growth and reduce poverty but the agricultural development needs to be sustainable. See more of risks and opportunities within the agriculture sector in chapter 5.

Below follows examples of two emerging areas that have the potential to improve the agricultural sector and rural development.

Uganda has the most organic agricultural land in Africa and organic agriculture has been increasing during the last years.[85] The demand on the global market (organic food and beverages was estimated to 60 billion USD in 2011[86]) pose an opportunity for economic development and trade and for Uganda to move towards a greener growth. Furthermore, innovation, increased productivity and improved agricultural practices have major impact for women as 72 % of all employed women and 90 % of all rural women work in agriculture.[87]

During the last decade there has been dramatic change in mobile communication technology. Uganda is today ranked among the ten African countries with the highest number of mobile phone subscribers.[88] Information and communications technology (ICT) such as mobile phone applications for agricultural and rural development hold significant potential for advancing development, but the methods are new and more research and development is needed. ICT can provide affordable ways for millions of people to access information, markets, finance, and governance systems previously unavailable to them. The innovation of mobile application implies major opportunities for rural development as it promotes better access to information, better access to extension services, promote better market links and distribution networks, as well as better access to finance, which leads to improved disaster risk management, good agricultural practices, less exploitation, higher yields and food security as well as higher income for small-scale farmers.[89] Furthermore, using this type of information and communication technology to reach women farmers could contribute to improving farming practices and close gender gaps in yields and productivity if they are designed and used to overcome gender-specific constraints.[90]

Any area that is developed should be matched with efforts in implementing the appropriate regulatory frameworks to ensure human rights, the rights of the workers as well as care for the environment. Sweden can support Uganda both at national and local level to put in place good quality and greener jobs by developing more environmentally sound and lower-carbon activities and provide guidance on policy interventions and actions to develop quality employment in the greener economy. Business development initiatives can for example spread knowledge, develop skills and use of environmentally friendly technologies.

Complementary, Swedish support can also meet the needs for new skills, supporting education, and capacity development activities at all levels. For example the oil findings in Uganda will require domestic technical and institutional capacity building. Here Sweden can play a role to support activities that increase transparency, anti-corruption and social accountability and to strengthen the capacity at relevant institutions but also support media and civil society organisations. By e.g. knowledge sharing, partner initiatives, and business for development programmes between Sweden and Uganda focus can be on improved environmental governance, more transparent Environmental Impact Assessment (EIA)

[85] UNEP, 2013
[86] PEP, 2013
[87] IFAD, 2013
[88] Freedomhouse, 2012
[89] World Bank, 2011
[90] Manfre and Nordehn, 2013

processes with better stakeholder representations as well as stimulate Corporate Social responsibility efforts.

- **Entry point 5: Stärkta möjligheter att hävda sina mänskliga rättigheter med fokus på de medborgerliga och politiska rättigheterna samt HBT-personers åtnjutande av de mänskliga rättigheterna**

Through its development support, Sweden wants to contribute in achieving results within *increased respect for human rights, with focus on civil- and political rights including LGBT persons' rights.* Women's networks, civil society organisations, minority groups, are stressed as key actors. Private companies and labour organisations/unions are also identified as actors to collaborate with in order to increase transparency. In addition, media groups (both local and international) can also be considered due to their specific role to report on basic human rights and human rights offences.

Human rights and sustainable development are mutually reinforcing. Access to environmental protection is essential to the realisation of basic human rights, including the rights to food, health and even life itself. So too a human rights framework that ensures transparency and empowers citizens to contribute to the management of natural resources will help to achieve environmental goals. Work on civil and political rights is important for sustainable management of natural resources and reduced environmental risks. To increase effectiveness and stimulate active participation of poor women and men in decision making around environmental resources and management the empowering of local bodies is important. Possible actors to cooperate with are local governments, community based organisations, national and international NGOs. It may also be rewarding for civil society organisations working on land rights to link their work to its environmental benefits or climate risks thus giving access to complementary arguments, actors and arenas. Farmers' greater willingness and ability to invest in water conservation techniques in dry land areas if tenure is secure is one such argument.

Given weak institutional capacity and high levels of corruption there is an apparent risk that short term benefits of powerful economic interest will take precedence over the public interest of a resilient society and respect of human rights. Reforms and efforts to strengthen the rule of law, democracy, freedom of expression, access to information and an active and informed civil society are important also for environmental justice and addressing the pressing environmental problems already facing Uganda. One specific entry point for Sweden could be to support the EITI process in Uganda. The government is declaring that they are still in a preparation stage in terms of making a commitment to become an EITI country. EITI implies that companies in extractive industries (oil, gas, minerals) publish what they pay and government publishes what they receive. This requires significant strengthening of government's PFM systems, cooperation with business, involvement of civil society for oversight and improved anti-corruption mechanisms.

- **Entry point 6: Ett stärkt livskraftigt och pluralistiskt civilsamhälle, inklusive demokratiseringsaktörer**

Environmental concern is a matter of human rights. The four guiding principles for human rights based approach; Non-discrimination, Meaningful participation, Openness and transparency, and Accountability are useful also in analysing the links between human rights

and environmental aspects. For example: All men, women, girls and boys are entitled without any discrimination to equal access to ecosystem services and natural resources and resilience for a standard of living adequate for their health and well-being (the principle of Non-discrimination). The four principles entail holding the people of power accountable to their commitments to international Human Right treaties and other international agreements and to national legislation. It also means empowering men, women and children affected (especially those who are poor and marginalised) to know their rights and enabling them to organise and monitor performance of the state/businesses and complain to a mandated body when rights are violated.

Applying a HRBA approach also means; Influencing or developing capacity of those who have power and formal obligations to promote, fulfil and protect human rights, Empowering people, particularly the powerless (with hope, assertiveness, knowledge, skills, tools, communication channels, legal mechanisms etc.) to enable them to address their situation and claim their rights individually and collectively. Another example: All people have the right to obtain information in an accessible and timely manner e.g. about pollution levels, water quality, environmental health risks, exploitation plans, land use plans, disaster preparedness plans (the principle of Openness and Transparency).

### 6.2 Indicators

Indicators should measure the level of goal attainment, or a certain aspect of goal attainment. Hence, the goals must be set to be able to identify suitable indicators. The Helpdesk may provide support in identifying suitable indicators or provide comments on results matrices. Please contact the Helpdesk for more information. For general information concerning indicators please see Annex I.

## 7. Concluding remark and Issues for the Embassy to consider

This study is based on assessment reports, progress reports and scientific evidence. Providing realistic and feasible suggestions of possible Sida-financed support would require a stronger sense of the circumstances, opportunities and particularities in the country. Therefore, the ideas presented in this section should be seen as a basis for a discussion with Sida, particularly the field staff, on possible ways that the Swedish support could be designed in order to enhance the environmental agenda.

Natural capital like natural resources, ecosystems, ecosystem services and climate is the basis for human existence and activity. People living in poverty are often directly dependent on natural resources and biodiversity such as forests, land and water. At the same time, groups that are already vulnerable suffer particularly from environmental degradation, exploitation, climate change and natural or man-made disaster risks. Changes in the environment and the climate have the greatest impact on the people living in poverty, people whose resilience to such changes is very weak. The main target groups for the Swedish development support to Uganda, identified by the Swedish Government are women, children and marginalised groups. Environmental concerns will be essential to highlight in the new results strategy since the target group (the rights holders) are highly depended on ecosystems such as forests, waters, wetlands and fields, for their livelihoods and they are also the most vulnerable to climate related impacts and environmental hazards. Furthermore, weak institutions,

ineffective environmental legislation, unclear accountability, poor transparency and a lack of public access and participation further exacerbate their situation.

*Issues to consider:*
Environment and climate change is not given as a specific entry points for the strategy in Uganda but is part of the government's thematic priorities. This makes it crucial to integrate environment and climate change perspectives in the results areas in an effective way in order to strengthen results and promote sustainable development. There is no one-size-fits-all solution in terms of mainstreaming environment and climate change issues at the strategy level. However we would like to provide some ideas how environment and climate change aspects relates to proposed entry points and point to possible areas for environmental mainstreaming for Sida to consider.

**Entry point 1** (Förbättrad barna- och mödrahälsa (MDG 4 och 5) inklusive förbättrad tillgång till SRHR)

- Ensuring that the health sector has access to and make use of all relevant information related to disaster risk and projected climate impacts.
- Raise awareness of the importance of preventive health care and the right to a healthy environment within the health system, including hygiene, water and sanitation, treatment of hazardous hospital waste etc.
- Raise awareness of the importance of preventive health care and the right to a healthy environment to stimulate action outside of the health system. This includes the right to information about environmental health risks and disaster risks, measures to reduce water pollution, improve waste management, inclusion of hygiene in education sector etc.
- Promoting new energy or urban transport investments to tackle poor indoor and urban air quality.
- Strengthen existing health infrastructure and human resources, as well as surveillance, early warning, and communication and response systems for climate-sensitive risks and diseases.

**Entry point 2, 3 and 4.**

- Support the development of sustainable agriculture practices, e.g. organic agriculture practices and facilitate for improved market access.
- Promote innovative ICT solutions for agricultural and rural development by e.g. supporting research and development and creating learning opportunities.
- Support interventions that identify approaches to support the adaptation of the public sector to the green economy in view of removing the barriers to the emergence and expansion of greener practices and activities in the private sector.
- Support processes that identify entry points where the public sector can improve the quality of advice and services offered to enterprises (e.g. market prospection), workers (e.g. skills assessment) and the civil society (e.g. communication) to stimulate the green economy.
- In dialog, Sweden can support the development to be in line with the UN Global Compact principles, to ensure that ensure that markets, commerce, technology and finance advance in ways that benefit economies and societies.

**Entry points 5 and 6** (Stärkta möjligheter att hävda sina mänskliga rättigheter med fokus på de medborgerliga och politiska rättigheterna samt HBT-personers åtnjutande av de mänskliga rättigheterna; Ett stärkt livskraftigt och pluralistiskt civilsamhälle, inklusive demokratiseringsaktörer)

- Protecting and enhancing tenure security for poor and marginalized groups including small holder farmers and urban slum dwellers.
- Increasing transparency and procedural rights as participation in decision making related to allocation of natural resources rights (hydropower dams, mineral concessions, land investments etc.) e.g. support the EITI process in Uganda
- Empowering civil society to monitor that legal provisions for investments are met (is fair compensation given, are taxes and fees collected, are social and environmental regulations respected)
- Increasing awareness in society about environment and disaster risk to enhance the resilience of communities. This includes early warning systems and information on opportunities and barriers for women, men and business to reduce risks. It could also include reporting on water pollution levels, dangerous exposure to chemicals etc.
- Increasing the capacity of media to report on human rights and violations. This includes land rights and disputes, investments, revenue transparency, and its impacts on vulnerable groups.

## References


AfDB, OCED, UNDP, UNECA, (2012) *Uganda Economic Outlook 2012*

AfDB, (2012), *African Statistical Yearbook*

AfDB, (2009), *Managing Oil Revenue in Uganda - A Policy Note*

Atukunda, A. (2009), *EIA for Decision-making? A Capacity Building Case for Uganda 'IAIA09 Conference Proceedings', Impact Assessment and Human Well-Being*, IAIA conference, Accra 2009

Government of Uganda, (2007), *National Adaptation Plan for Action Uganda*

Hepworth, N D, 2010. *Climate change vulnerability and adaptation preparedness in Uganda*, Heinrich Böll Foundation, Nairobi, 2010

Hilhorst, T., Porchet, N., (2012) *Uganda Food security and land governance Factsheet*, Royal Tropical Institute for the Neatherlands Ministry of Foreign Affairs

IMF, (2010), *Uganda: Poverty Reduction Strategy Paper*, IMF Country Report No. 10/141

IFAD, (2011) *Weather Index-based Insurance in Agricultural Development A Technical Guide*

IFAD, (2012), *Enabling poor rural people to overcome poverty in Uganda*

Kaufmann D., A. Kraay, and M. Mastruzzi (2010), *The Worldwide Governance Indicators: Methodology and Analytical Issues*. http://info.worldbank.org/governance/wgi/

Manfre, C., and Nordehn, C. (2013) *Exploring the Promise of Information and Communication Technologies for Women Farmers in Kenya*, Cultural Practice, LLC MEAS Case Study No. 4, August 2013

McIntyre, (ed.) McIntyre (ed.) Herren, (ed.) Wakhungu, (ed.), Watson (ed.), (2009) *Agriculture at a crossroads. Synthesis report with executive summary : a synthesis of the global and sub-global*, IAASTD reports. IAASTD, 2009

Ministry of Finance, Planning and Economic Development (MoFPED), (2010), *Millennium Development Goals Report for Uganda 2010 Special theme: Accelerating progress towards improving maternal health*

Nabanoga, G, Namaalwa, J and Ssenyonjo, E (2010) *REDD Working Papers: REDD and sustainable development – perspective from Uganda,* IIED, London.

NEMA, (2010) *The state of the Environment of Uganda 2010*

NEMA, (2006) *Ecosystems, ecosystem services and their linkages toPoverty reduction in Uganda- final report*, prepaired by Centre for Resource Analysis Limited (CRA), Kampala 2006

OECD (2012), *Sustainable agriculture productivity growth and bridging the gap for small-family farms*, Interagency Report to the Mexican G20 Presidency

Poverty Environment Partnership, (2013), *Building an inclusive green economy for all, Opportunity and challenge for overcoming poverty and inequality*, Joint paper March 2013

Ruettinger, L., Taenzler, D., Musana, P., Narcisio, B., (2011) *Water, Crisis and Climate Change in Uganda: A Policy Brief*

Ruhanga, R., Manyindo, J 2010 *Uganda's environment and natural resources: enhancing*

*Parliament's oversight,* UWS and UNEP/GRID-Arendal 2010

Shackleton, C., Shackleton, S. Gambiza, J., Nel, E., Rowntree, K., Urquhart, P., (2008) *Links between Ecosystem Services and Poverty Alleviation: Situation analysis for arid and semi-arid lands in southern Africa* Submitted to: Ecosystem Services and Poverty Reduction Research Programme: DFID, NERC, ESRCTumwesigye, R., Twebaze, P., Makuregye, N., Muyambi, E., (2011) *Key issues in Uganda's energy sector, Pro-Biodiversity Conservationists in Uganda (PROBICOU)* / International Institute for Environment and Development. London.

UNDP-UNEP Poverty-Environment Initiative, (2009), *Making a difference for the poor: Using economic instruments to promote sustainable natural resources use, environmental sustainability and responses to climate change*

UNEP, (2013a) *Our environment – our health, Summary for policymakers*, African Environmental Outlook 3

USAid, (2010), USAid, *Uganda Country Profile, Property rights and resource governance*

World Health Organisation (WHO), (2009) *Country profiles (Uganda, Rwanda, Kenya) of environmental burden of disease*

World Bank (2012), *Little green databook 2012 - Uganda*

World Bank, 2011, *Mobile Applications for Agriculture and Rural Development*, ICT Sector Unit World Bank December 2011

World Bank, (2009), *Uganda Post-Conflict Land Policy and Administration Options The Case of Northern Uganda*, World Bank Report No. 46110-UG

Yaron, G., Moyini Y., Wasike, D., Kabi M., Barungi, M. (2004), *Technical Report: Final: The role of environment in increasing growth and reducing poverty in Uganda*, February 2004

Zorya, S., Kshirsagar, V.,Gautam, M., Odwongo, W. Verbeek, J., Sebudde, R. (2012) *Inclusive growth policy note, Agriculture for inclusive growth in Uganda*, ARD Policy note to World Bank, 2012

Ölund Wingqvist, G. et al, (2012), *The role of governance for improved environmental outcomes Perspectives for developing countries and countries in transition*, Naturvårdsverket, June 2012

## Internet sources

Adaptation Learning Mechanism, UNEP et al (accessed September 2013) http://www.adaptationlearning.net/uganda/profile

Freedomhouse, (2012) Uganda, (accessed September 2013) http://www.freedomhouse.org/report/freedom-net/2012/uganda

IFPRI, (2013), Uganda – Food security portal (accessed March 2013) http://www.foodsecurityportal.org/uganda

IFAD (accessed September 2013) Uganda: Division of labour in agriculture, http://www.ifad.org/gender/learning/role/labour/54.htm

Miljöminister Lena Ek, (accessed March 2013)http://www.regeringen.se/sb/d/15626/a/210216

National Planning Authority (accessed September 2013) http://npa.ug

PEI homepage, *PEI Country fact sheet on Uganda*, (accessed February 2013 http://www.unpei.org/what-we-do/pei-countries/uganda

Preventionweb, (2013), Country disaster statistics – Uganda (accessed March 2013): http://www.preventionweb.net/english/countries/statistics/risk.php?cid=180

UNDP, (2013), Human Development Index Uganda, (accessed March 2013) http://hdr.undp.org/en/statistics/

UNEP, (2013b) Organic agriculture in Uganda (accessed September 2013) http://www.unep.org/greeneconomy/SuccessStories/OrganicagricultureinUganda/tabid/29866/Default.aspx

UNICEF, (2003), Common water and sanitation related diseases (accessed April 2013) http://www.unicef.org/wash/index_wes_related.html

World Bank (accessed September 2013) Uganda Overview http://www.worldbank.org/en/country/uganda/overview

## Annex I – Indicators

Indicators should measure the level of goal attainment, or a certain aspect of goal attainment, it should be objectively verifiable, defined and specific enough to enable a comparison over time. Objectives, whether overall or sector specific, should be measureable so that suitable indicators can be identified and results measured. The person developing the results matrix need to start with the end in mind: What are the desired results and how will progress towards achieving them be measured? What indicators could be appropriate? Will the monitoring of these indicators provide information on results and the level of goal attainment? Development of measurable objectives (relevant for overall objectives as well as for sector objectives) facilitates the process of identifying adequate indicators. In general it is beneficial to utilise a few well balanced indicators rather than too many.

Often it is the case that indicators are not indicators but rather targets or activities. Many indicators need to be more precise. If indicators are too vague, accountability may be negatively affected. It is important to carefully review each indicator and assess if it really measures the stated objective and if it is measureable (e.g. not an activity or target or too vague).

**Questions that might be useful to think of and try to answer when developing or reviewing a results matrix include:**

- Are there objectives for each level (impact, outcome and output) and indicators linked to each level? Is there a logical chain between the output-, outcome- and impact levels?
- Is there a balance between process indicators and state indicators, between quantitative and qualitative indicators?
- Are the indicators really indicators (e.g. "number of studies conducted until 2015") or are they stated as targets (e.g. "at least one study conducted by 2015") or activities (e.g. "conduct a study")
- Are the indicators SMART (specific, measurable, appropriate, relevant and time bound)?
- Will it be possible to measure the indicators? How will the indicators be measured, and by whom?
- Will the indicators provide some kind of information that is relevant to the objectives and the attainment of the goals?
- How will the goal attainment be reported? What information should be included?

*Environmental indicators:*
For Sida's Environmental and Climate Change Indicators Guidance at country and sector level please see the following link:
http://sidaenvironmenthelpdesk.se/wordpress/wp-content/uploads/2013/01/Guidelines-Environment-and-Climate-change-indicators-oct-2010.pdf

*Resilience indicators:*

Please note that the indicators below are suggestions made by the Sida Helpdesk for Environment and Climate Change (Gunilla Ölund Wingqvist and Knud Falk). The indicators should be seen as examples. They are general, and should be more specific and further defined in order to be measurable.

| **Characteristics**[91]<br><br>**A resilient country/ community/individual…** | **Type of capital**[92] | **Indicators: Examples programme/national level**<br>**(also possible to monitor at community level)** | **Indicator: examples community level** |
|---|---|---|---|
| **… is knowledgeable and healthy**<br>(It has the ability to assess, manage and monitor its risks. It can learn new skills and build on past experiences) | Human capital | - Prevalence of underweight children under-five years of age (MDG 1)<br>- Maternal mortality rate (MDG 5)<br>- Literacy rate of 15-24 year-olds, women and men (MDG 2) | - Educational level (household average) (FAO)<br>- Food consumption ratio (Share of food expenditure divided by total expenditure)<br>- Dietary diversity and food frequency score (FAO)<br>- Physical access to health services (FAO) |
| **… is organised**<br><br>(It has the capacity to identify problems, establish priorities and act) | Social capital | - Policies/laws that are incoherent or promotes mal-adaptation/decreases resilience are identified<br>- Structure/governance mechanism for coordinating DRR/CC/IWRM/etc. in place and in use (vertical and/or horizontal coordination)<br>- Adaptive, fair and equitable adaptation plans/programmes/projects developed and implemented<br>- Guidelines in place for land use planning (incl. urban planning) and construction work (critical infrastructure, roads, houses) and taking into account (climate-sensitive) 'hazard zoning' | - No. of hectares allocated to the poorest and women<br>- Number of community members applying models to improve their resilience (*specify* e.g. increase the efficiency of water use, diversify crops, etc.)<br>- Number of citizen groups and other interest groups (among small business owners, fishermen, women, etc.) that have been formed (TRIAMS)<br>- Communities have a functional and representative system of community organisation that takes into account |

[91] Arup/IFRC (2012): http://www.ifrc.org/PageFiles/96986/Final_Characteristics_Report.pdf
[92] Myanga (2007) as summarised in Bahadur *et al*. (2010): http://community.eldis.org/.59e0d267/resilience-renaissance.pdf

| Characteristics[91]<br><br>A resilient country/ community/individual… | Type of capital[92] | Indicators: Examples programme/national level<br>(also possible to monitor at community level) | Indicator: examples community level |
|---|---|---|---|
| | | - Share of priority activities/development projects/policy gaps that are funded (%)<br>- Planning mechanisms are flexible and adaptive in order to respond to changing risks, changing governance structures and future planning needs (PfR) | the special needs of different at-risk populations/groups (PfR) |
| **… is connected**<br>(It has relationships with external actors who provide a wider supportive environment, and supply goods and services when needed) | Social capital | - Share of population with phone access<br>- Roads / Mobility and transport constraints (ordinal, 1 to 3) (FAO)<br>- Freedom of press<br>- Up-to date, climate-smart agricultural extension services in place, including information dissemination to needy farmers<br>- Effective and adaptive national/province disaster management plans and structures, based on risk assessments and climate projections, are implemented (yes/no; year)<br>- Authorities undertake public awareness activities (including within the formal education system) on the links between climate change and disaster risk reduction and environmental management (PfR)<br>- Share of government budgets allocated for CCA/DRR/etc. (% and numbers) | - Awareness on Early Warning Systems and relevant disaster response plans<br>- Frequency of assistance (no. of times assistance was received in the last year) (FAO)<br>- Proportion of [farmers/households/ local organisations] accessing and using seasonal forecasts to plan for their livelihoods and household safety the coming season (applicable to urban and rural areas alike).<br>- Proportion of farmers who have increased crop diversification and adaptive and ecologically sustainable farming practices (based on skilled extension services and scientific advise) |
| **… has infrastructure and services**<br>(It has strong housing, transport, power, water and sanitation systems. It has the ability to maintain, repair and renovate them) | Physical capital | - Share of (urban and rural) population with access to water and sanitation, and electricity (%)<br>- Share of critical infrastructure (schools, hospitals etc.) built to meet 'disaster-proof' standards (e.g. locally relevant earthquake standards, in safe locations also in future extreme floods scenarios etc.) (%)<br>- EIAs of infrastructure projects are performed | - Proportion of housing designed and/or placed to withstand locally relevant and more variable hazard patterns<br>- Share of low-income households with access to improved water and sanitation facilities/power/etc (% of people in low-income areas/settlements) |

| Characteristics[91]<br><br>A resilient country/ community/individual… | Type of capital[92] | Indicators: Examples programme/national level<br>(also possible to monitor at community level) | Indicator: examples community level |
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| | | – assessing also side effects on vulnerable communities and impacts from the environment (incl. climate change) on the planned infrastructure | |
| **… has economic opportunities**<br>(It has a diverse range of employment opportunities, income and financial services. It is flexible, resourceful and has the capacity to accept uncertainty and respond (proactively) to change) | Economic capital | - GDP/capita<br>- Proportion of (urban/rural; women/men) population living below $1/day (%);<br>- The Gini coefficient<br>- Share of population with access to fair and equitable credit/insurance (urban/rural; men/ women; %)<br>- Access to secure tenure[93] | - Variability in yields or income over a multi-year period<br>- Proportion of households in target area that have diversified their sources of incomes from sustainable livelihoods<br>- Change of Income/agricultural yields or other (ordinal; increased, the same, decreased) |
| **… can manage its natural assets**<br>(It recognises their value and has the ability to protect, enhance and maintain them) | Natural capital | - Environmental Performance Index (Yale and Columbia Universities)<br>- Policy instruments/incentives are identified to promote *specify* (e.g. CCA/ecosystem resilience/low carbon development, etc.)<br>- Effective policy instruments for ecosystems services (in particular for regulatory functions such as flood/erosion control, water retention and biodiversity) are introduced/applied (yes/no; year)<br>- Proportion of total (renewable/non-renewable) water resources used<br>- Estimated deaths & Disability Adjusted Life Year (DALYs) attributable to selected environmental risk factors (WHO) | - Quality of air/water/soil (Bahadur, 2010)<br>- Degree of wetland/forest cover (Bahadur, 2010)<br>- No. of hectares of [coastal or forest etc.] ecosystem under some type of sustainable management system<br>- Increased local awareness on upstream-downstream linkages and effects of water and forest management (community surveys)<br>- Scale of (disaster prone areas) in which community-based watershed management plans have been established and/or reassessed |

[93] **Secure tenure**: Secure tenure is the right of all individuals and groups to effective protection by the State against arbitrary unlawful evictions. People have secure tenure when there is *evidence of documentation* that can be used as proof of secure tenure status or when there is either *de facto or perceived protection against forced evictions* *http://mdgs.un.org/unsd/mdg/Metadata.aspx?IndicatorId=32*

| Characteristics[91]<br><br>A resilient country/ community/individual… | Type of capital[92] | Indicators: Examples programme/national level<br>(also possible to monitor at community level) | Indicator: examples community level |
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| | | | (TRIAMS) |