

# **Sudan Responses to EPSA Study Questions**

**December 2007**

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# **Sudan EPSA Study (1 days actual work with participants) on 1/12/07**

(1 day preparation and 1 day writing up)

## **Summary**

<b>a. Approximate Timing Used .....</b>	<b>3</b>
<b>b. Key Participants .....</b>	<b>3</b>
<b>c. Methodology used .....</b>	<b>4</b>
<b>d. Key Questions Ecosystems Study - Sudan.....</b>	<b>4</b>
<b>I. The importance of ecosystem services to the poor.....</b>	<b>5</b>
1.1 What ecosystem services (e.g., pasture) are important for livelihood activities (e.g., goat breeding)? .....	5
1.2 What livelihood activities are most important to the poorest stakeholders? .....	6
1.2.1 What is poor.....	6
1.2.2 Livelihood activities important to the poorest stakeholders .....	6
1.3 How does the position of poor stakeholders vary among agro-ecological zones and land use systems? .....	7
1.4 How does lack of access to ecosystem services make people poor? .....	7
1.5 How does being poor affect access to ecosystem services? .....	8
1.6 How do ecosystem services help poor people support themselves in times of crisis? .....	8
<b>2 Trends in ecosystem services and drivers of change or Trends in Benefits people get and changes taking place .....</b>	<b>8</b>
2.1 What trends have you observed in the productivity of ecosystem services over the past 20 years? .....	8
2.2 What do you think has driven these changes? .....	9
2.3 What impacts on poverty have been experienced or are anticipated? What key changes are taking place with existing services... ..	10
2.4 What will determine whether the ecosystem can continue to provide these services? ..	10
<b>3 The valuation of ecosystem services .....</b>	<b>10</b>
3.1 How are ecosystem services valued by stakeholders, in monetary or non-monetary terms? .....	10
3.2 What are the trade-offs when ecosystems are exploited .....	11
3.3 What are the trade-offs when ecosystems are protected by the state? .....	11
3.4 How do poor stakeholders adapt individually to changes in ecosystem services? .....	12
3.5 How do communities adapt to changes in ecosystem services? .....	12
<b>4 Management strategies .....</b>	<b>12</b>
4.1 What management strategies can help maintain ecosystem services?.....	12
4.2 What incentives or disincentives influence poor peoples' investments in sustainable ecosystem services? .....	12
4.3 What policies, institutions, programmes or projects lead to ecosystem services benefiting the poor? .....	13
4.4 How can local adaptations sustain ecosystems and reduce poverty? .....	13
4.5 How can local communities be empowered to manage their ecosystem services sustainably and equitably? .....	13
<b>5. Knowledge and capacity needs for sustainable management of ecosystems .....</b>	<b>14</b>
5.1 What are the knowledge needs according to you? .....	14
5.2 What are capacity needs perceived by You?.....	14
5.3 What are the benefits and the shortcomings of existing and new practices? .....	15
5.4 What are the research needs? .....	15
5.5 What can be done to maximise the impact of scientific research on the policy and practice of NRM? .....	16

## a. Approximate Timing Used

### 8:30 – 10:30

- Introductions
- What is EPSA
- Identifying Key Elements
  - Ecosystems services according to participants
  - Livelihood activities important to poorest stakeholders
  - Main (poor) stakeholder groups
- Start off with question 1

### 10:30 – 11:00

- Fatur (Breakfast)

### 11:30 – 13:30

- Complete 1,2 and start 3

### 13:30 – 14:00

- Tea Break

### 14:00 – 16:30

- Complete questions 3, 4 and 5

## b. Key Participants

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### c. Methodology used

The methodology used was to work together in plenary. The questions were more or less answered in order but so as not to lose any vital information “Fridges” were opened to keep all ideas developed by the different participants. An automatic system of triangulation was used where participants were able to discuss and agree to ideas before noting them.

It was also noted by participants that one day is actually very short. This is especially so with the Sudan which is the largest country in Africa with a wide variety of ecological zones encompassing a variety of problems. It was noted as the 9<sup>th</sup> biggest country in Africa(?) with a population of about 35 million with a north and south which are totally different.

Concerning access to information it was noted that information exists but people need to take the time to look for it. Many studies have been carried out with different organisations but unfortunately everybody seems to be in the process of collecting information with very little in the way of interventions take place.

### d. Key Questions Ecosystems Study - Sudan

- 1. The importance of ecosystem services to the poor**
- 2. Trends in ecosystem services and drivers of change**
- 3. The valuation of ecosystem services**
- 4. Management strategies**
- 5. Knowledge and capacity needs for sustainable management of ecosystems**

# I. The importance of ecosystem services to the poor

This was redefined in Sudan as What Benefits do people obtain from the Natural Resources

First of all what are the Ecosystem Services? These were brainstormed as being:

- Agriculture
- Pasture
- Water
- Woody Biomass
- Non Timber Forest products
- Tourism
- Fishing
- Wildlife
- Energy products e.g. Wind, Sun and Oil
- Climate (always been variable in the Sahel see coping mechanisms)
- Clean Air
- Carbon sequestration !!! (some debate about this)

## 1.1 What ecosystem services (e.g., pasture) are important for livelihood activities (e.g., goat breeding)?

<b>Ecosystem services</b>	<b>Livelihood activity</b>
<b>Water</b> Water for human and livestock use.	Selling Irrigation Watering of livestock
<b>Agriculture</b>	Subsistence farming
<b>Livestock production</b>	This is very important for both pastoral and sedentary production. Apart from requiring livestock for livelihood activities this is also practiced for the following reasons: <ul style="list-style-type: none"> <li>• Prestige</li> <li>• Banking</li> </ul>
<b>Woody Biomass/NTFP:</b>	Wood cutting Charcoal Making Working in saw mills Transporting wood/charcoal Collection of NTFP
<b>Wild plant, animal products and fish</b> ○	Collection, hunting and fishing
<b>Social relations</b>	Social relations help with providing services and conflict resolution
<b>Knowledge Systems e.g</b> Botanical knowledge Pasture Management	Indigenous knowledge and practice is very important and can be shared between user groups

## 1.2 What livelihood activities are most important to the poorest stakeholders?

### 1.2.1 What is poor

Before answering this question many discussions took place on defining what poor is. Elements considered included :

- Being poor does not just mean a lack of money it rather means a lack of decision making capacity
- We need to separate absolute poverty from society poverty
- People are poor because they are resource poor : living from increasingly poor resources over time
- People will remain poor unless the following elements are addressed : illiteracy, knowledge of rights and lobbying power
- Poverty is a multi dimensional phenomenon: in each context it needs to be understood what it means. This may be different from area to area
- Understanding the poverty level is important: very destitute people automatically become less resistant. This means that even if there is a positive change it is consequently more difficult for them to rebound into a higher (better quality of life) bracket.
- Indicators need to be found for poverty from an Ecosystems perspective. These should be quantity based if at all possible (measurable). Poverty needs to be solved and reduced.

### 1.2.2 Livelihood activities important to the poorest stakeholders

First of All a brainstorming was carried out on who are the main stakeholders we are dealing with... This primarily includes:

- Farmers
- Herders/Pastoralists
- The Poor Labourers
- Fishermen
- Hunters
- Women and children

And then also

- The Private sector
- Federal institutions/Parliamentarians
- International NGO's
- Political Parties
- Local Government
- Civil Society
- Native Administration
- Private sector (e.g. Kenana sugar producers)

**Many activities exist but it was agreed to focus on what was seen as relevant activities.**

<i>Livelihood activities</i>	<i>Why important to poor stakeholders?</i>
Traditional Agriculture	<b>It's the principal activity of most rural people. This activity allows families to feed themselves</b>
Pastoral and Sedentary Animal Rearing	<b>For agriculturalists it a way of diversifying economic activities for risk spreading. For Pastoral people it's a</b>

	<b>way of life.</b>
Woodcutting and Charcoal Production	<b>Very important for people to help supplement their income. Charcoal prices vary greatly from the source to where it is sold</b>
Petty Trade	<b>It's Basic to many peoples way of life. It's small scale, very often a family business and important way to increase income in the family</b>
NTFP	<b>They add a very important supplement to peoples' income especially in the more Humid zone where many NTFP's are available. They can also add better nutrition but this is less important</b>
Well Digging and sale of water (rural and urban)	<b>Water and well digging allow people to make extra income.</b>
Mining (especially salt e.g Darfur, Red Sea, Kordofan and Blue Nile States)	<b>This is an extra income activity for the family</b>
Hunting/Fishing	<b>Extra income</b>
Casual Labour	<b>Extra income</b>

### ***1.3 How does the position of poor stakeholders vary among agro-ecological zones and land use systems?***

This is a virtually impossible question to answer in the Sudan as there are so many zones and this is a hugely complex issue. What is also important to note here is that Zones and Land-use systems should not be the only way to measure the stakeholders. One also needs to include other factors such as:

- The many different tribes which exist
- The many different languages which are spoken
- The many different cultures which exist
- The variety of attitudes which exist

A quick brainstorming gives us the following main ecological zones in the Sudan :

- Desert
- Semi Desert
- Poor Savannah
- Rich Savannah
- The Nile Ecosystem
- The Wetlands and the Swamp areas
- The Red Sea zone
- The Marine Environments
- The higher mountain areas

### ***1.4 How does lack of access to ecosystem services make people poor?***

When talking about being poor there are certain things which need to be mentioned in order to better understand poverty and basic inequity which exists in Sudan.....

- It should be understood in the context of Sudan that poor people are in general resistant to change this is because they have a mentality which causes them to

wait for outside forces to help them change. There is very little self driven initiative to change from being poor to being richer

- Another factor is that the poor are supply driven and not demand driven. This means that they effectively wait to be told what to buy/to do. This has been a huge mistake of development projects from the 60-90's where they have continued to work with piloted approaches coming from outside. This causes people to stay poor and passive in nature. .... New projects should learn from this huge mistake and should be designed from the start to give people more responsibility with a phasing out idea and "responsibilising" approach from the start.

Taking the above into account many Ecosystems are inaccessible to poorer people for the following reasons:

- They are owned by rich individuals consisting of Government officials, private companies and even certain tribes.
- War has had a result of closing off many ecosystems. Some ecosystems have been able to rest and improve themselves but in many cases use has changed to other groups. This means that many people coming back into recent war zones find that they are no longer able to use the service as they used to. This inevitably causes conflict if it is not properly managed.
- The oil fields in southern Kordofan have had the result of impoverishing many people due to the following reasons:
  - Large Areas are closed off and no longer available for use : concessions
  - The pollution factors (oil residues etc) have ruined many 100's of thousands of Hectares
  - The concessions and pollution have effectively closed off many former livestock routes and pasture areas. This has meant increased pressure on other areas causing increased conflict potential

### ***1.5 How does being poor affect access to ecosystem services?***

Being poor makes it more difficult to have access to Ecosystem services as more powerful people will always come first

### ***1.6 How do ecosystem services help poor people support themselves in times of crisis?***

People, especially in rural areas have nothing but ecosystem services to survive on.

## **2 Trends in ecosystem services and drivers of change or Trends in Benefits people get and changes taking place**

### ***2.1 What trends have you observed in the productivity of ecosystem services over the past 20 years?***

In general poverty is greater in rural areas then it was 20 years ago this is because ecosystems are giving less but also because the population has gone up which

gives a greater pressure on the resources. Another element to note is that we are understanding more and more and more trends as the years go by as our knowledge is increasing. Things that we did not see many years ago we can now better fathom as the reasons are known.

It should also be noted that Bad management is a major reason why trends have gone down. There are huge resources in the Sudan and in theory they should easily provide for everyone. Given the huge area and the relatively low population it was suggested that at this point in time development requires a high overhead cost to each person. One should aim to reduce this through good management

<b>Key ecosystem services</b>	<b>Trends + or -</b>
<i>Livestock Production</i>	<b>Positive and Negative:</b> Animal numbers are slowly but surely increasing due to improved health. This is giving rise to greater numbers which in turn execute greater pressure on the resources which in turn cause greater ecological disturbance along with greenhouse gasses as well. People should probably think of investing in livestock production in a different way in order to maintain productivity. Not all money should be spent on animal health but this should rather be spent on improving the resources
<i>Gum Arabic production</i>	<b>Negative:</b> Gum Arabic production is possible but this is very often affected by bad government policies which don't favour the farmers. The policies are so bad (monopoly, bad prices) that the farmers may well cut down the tree rather than produce any gum. As a result of this production was 130 million tonnes in 2002 and only 9 million tonnes in 2004
<i>Un planned expansion of mechanised Farming</i>	<b>Negative:</b> bad farming practices. Land taken away from people, increased conflict, An example is Southern Kordofan where over 100,000 Ha have been turned into mechanised farms in recent years. This has inevitably blocked off cattle routes and led to more conflict.
<i>Rangeland areas</i>	<b>Negative:</b> little or no management has resulted in the quality of rangelands decreasing
<i>Water</i>	<b>Negative:</b> Surface water quality is going down. Pollution is increasing on a daily basis
<i>Biodiversity</i>	<b>Negative:</b> This has gone down due to bad management, pollution and greater pressure

## **2.2 What do you think has driven these changes?**

Answered under section 2.1...

### ***2.3 What impacts on poverty have been experienced or are anticipated? What key changes are taking place with existing services...***

All indications are that poverty will increase dramatically in the short term as the rich seem to be getting richer and the poor poorer. There is also a huge tendency towards urbanisation. The only way this could theoretically be reversed is to act on :

- Good governance
- Better Planning
- Ensuring Equity
- Acting on human Rights
- Act on current politics

However, we don't hold too much hope for this...

The medium to long term effects of poverty were discussed and it was agreed that we are looking at a new situation arising where poor people in rural and urban areas will need to find new niches for themselves in order to cope with changing circumstances.

### ***2.4 What will determine whether the ecosystem can continue to provide these services?***

Proper legislation protecting poorer people is required

## **3 The valuation of ecosystem services**

### ***3.1 How are ecosystem services valued by stakeholders, in monetary or non-monetary terms?***

Rather than talking about Ecosystems we need to talk about land. There are certain contradictions here which need to be understood:

- Land officially belongs to the government and most people occupy their land as unregistered occupants.

Despite this fact people still feel it belongs to them resulting in an insecure but de-facto ownership. Elements resulting from this include:

- People will keep people off their land if they can
- "owners" will rent out land
- Native administration (chiefs and Umdas) will apportion land

There are however factors which undermine the above

- Private companies will receive land belonging to people from higher authorities
- Concessions are easily given to outsiders e.g oil concessions

There are some solutions to the above where greater security can be given to the land. This includes:

- Registration of village lands and everything on it
- Registration of community forests or Rabaa Shabia

### 3.2 What are the trade-offs when ecosystems are exploited

<b>Form of exploitation</b>	<b>Gains</b>	<b>Losses</b>
<i>Pastoral to Agricultural</i>	Crop production	Pasture Pastoral livelihoods Non agricultural Space
<i>Unorganised to organised situations</i>	This concerns setting up stock routes in both peaceful and former war areas. The stock routes help re-establish non conflicted movement between sedentary and pastoralist people	Losses can occur if stock routes are not properly placed with the inclusion of all the actors
<i>Fields or Pasture areas to mechanised farming</i>	Immediate Crop Production on a short term basis	Pasture/Private agricultural land Land Fertility over time Species Diversity

### 3.3 What are the trade-offs when ecosystems are protected by the state?

The government needs to study situations properly before deciding to protect/improve ecosystems...the following examples show what happens when situations are not properly analysed.

<b>Form of protection</b>	<b>Gains</b>	<b>Losses</b>
<i>Mechanised farming</i>	Immediate high production of crops	After a few years production normally declines as soil fertility goes down Conflict goes up as land is closed off and people are forced to move in other ways Land is lost to private farmers
<i>Gum Arabic Production from Kitr (Acacia mellifera) forest on Gardud (Heavy compacted clay soils)</i>	None gum arabic doesn't grow on this type of soil.	1000's Ha Kitr forest is cleared Pasture Land Bird life Animal life Etc
<i>Khartoum Green belt to Residential (about 2,000Ha affected)</i>	Land available for construction	Sanitation problems as the trees used to consume waste water Dust as trees protected the town

<b>Form of protection</b>	<b>Gains</b>	<b>Losses</b>
		Greater Odour and mosquitoes from dirty water which is now not consumed by trees
<i>Oil Industry Concessions in Southern Kordofan</i>	<b>Replanting in other areas by the oil companies</b>	Estimated over 3,000,000 (3 million) ha has been closed off and ruined through: -Increased runoff from the industry closing off/flooding whole areas -Water pollution by oil closes off areas -Uprooting of large areas

### ***3.4 How do poor stakeholders adapt individually to changes in ecosystem services?***

This has been discussed under coping mechanisms see section 4.4

### ***3.5 How do communities adapt to changes in ecosystem services?***

This is essentially the same as stakeholders themselves i.e section 4.4

## **4 Management strategies**

Before talking about management strategies it is important to stress that people need to come first... and all decisions need to be taken with this in the back of the mind. Another way of saying this is that "man should be lens through which natural resource management is regarded"

### ***4.1 What management strategies can help maintain ecosystem services?***

Not discussed

### ***4.2 What incentives or disincentives influence poor peoples' investments in sustainable ecosystem services?***

The following incentives influence people to better invest in ecosystem services

**Land ownership**

**Access to credit**

**Peace (security and peace of mind)**

**Involve people in all planning stages**

**Better infrastructure to move products**

**Reduce taxes**

**Ensure transparency of decisions**

**Through demonstration plots/areas show new ideas**

### **4.3 What policies, institutions, programmes or projects lead to ecosystem services benefiting the poor?**

One needs to improve investment policies

Projects need to be designed so that decisions can be taken by poor

### **4.4 How can local adaptations sustain ecosystems and reduce poverty?**

It needs to be remembered that this is different in various zones but...

People control their poverty on an everyday basis with the local adaptations. In actual fact local adaptations can be seen as the crux of the matter in helping to reduce poverty. These local adaptations have been used for many years we call these coping mechanisms. There are very many of these and a quick brainstorming reveals the following :

- People know when to sow and use all sorts of strategies such as dry sowing, different species, different varieties/species together. This traditional adaptability allows for people cope with the adaptability, especially in the Sahel.
- Certain people can predict weather conditions allowing adaptations to be made
- Pastoralists moving and nomadism are systems of adaptability designed over time to cope with variability
- Traditional water-harvesting is used to best use available water: for instance to plant "Tibish" (watermelon)
- Different systems of food conservation exist. This allows availability of food for good and bad times
- Herbal medicines help treat illnesses
- Displacement allows people to cope with war and other disasters. Unfortunatley this has become a way of life for many people
- Seasonal migration allows ecosystems recover and allows for best use of resources as well
- Traditional seed storage for food and seed sowing e.g pits and jars allows people best keep their produce
- Traditional systems of breeding of animals exist to give better quality and resistance of animals
- Different systems of water sanitation exist using local materials and plants in order to ensure clean and drinkable water e.g flocculants

### **4.5 How can local communities be empowered to manage their ecosystem services sustainably and equitably?**

Not answered

## 5. Knowledge and capacity needs for sustainable management of ecosystems

Two major constraints were identified concerning knowledge and capacity needs:

- Decision making people at the top doesn't allow for the consideration of ideas at the grass roots level. Unfortunately, things tend nearly always to be planned from the top and subsequently executed.
- People tend to see things too simply : problems are interrelated we cannot deal with them in isolation

### 5.1 What are the knowledge needs according to you?

<b>Stakeholder group</b>	<b>Knowledge needs</b>
Local Communities	<ul style="list-style-type: none"> <li>• Provide information to local communities on the importance and opportunity of resources along with their rational use and positive/negative impacts of different actions</li> </ul>
Technical Services	<ul style="list-style-type: none"> <li>• Critically review all mechanised farming</li> <li>• Consider alternative uses for current produce taking into account taking into account the socio-economic and environmental aspects for each area</li> <li>• Better discover conflict reasons and positive aspects between sedentary and pastoral people so that more appropriate planning can take place.</li> <li>• Better understand local management practices</li> <li>• Better know grazing capacity and possible improvement measures of grazing lands</li> </ul>
Central Government/Ministries	<ul style="list-style-type: none"> <li>• There needs to be a proper classification of land and land use systems</li> <li>• Legislation needs to be compatible with social norms</li> <li>• Inform policy makers so that they can make informed decisions</li> </ul>

### 5.2 What are capacity needs perceived by You?

Training is required at all levels on a better understanding of the environment, integrated natural resource use and conflict management. Other capacity needs required include..

<b>Stakeholder group</b>	<b>Capacity needs</b>
Technical Services	<ul style="list-style-type: none"> <li>○ <b>Have a better infrastructure at all levels</b></li> <li>○ <b>Better understand local realities such as the existence of livestock routes and water points</b></li> </ul>
Local Elected Government Representatives	<ul style="list-style-type: none"> <li>○ <b>Have a better infrastructure at all levels</b></li> </ul>

<b>Stakeholder group</b>	<b>Capacity needs</b>
Local Administration	○
Civil Society Organisations	<ul style="list-style-type: none"> <li>○ Improve communication and outreach techniques</li> <li>○ Create mechanisms for staying up to date with developments</li> <li>○ Improved internal (horizontal and vertical) communication flow within the services</li> </ul>
Communities	○ Communities need help/training in being better organised

### **5.3 What are the benefits and the shortcomings of existing and new practices?**

<b>Practice</b>	<b>Benefits</b>	<b>Shortcomings</b>
<b>Management</b>		
<b>New Practice: Holistic points of view</b>	Holistic points of view taking into account different sectors are essential	Unfortunately, most often holistic points of view don't exist and as a result there are no integrated policies which arise in confusion. An example of this is the lack of communication between Biological and Social Scientists

### **5.4 What are the research needs?**

<b>Users</b>	<b>Needs</b>
Poor stakeholders	<ul style="list-style-type: none"> <li>• Better understand local needs</li> <li>• We need to plan with local people and not make top down decisions</li> <li>• Understand how the poor value their own systems</li> <li>• Marketing research : how can we better sell/improve/modify local products</li> </ul>
General	<ul style="list-style-type: none"> <li>• Researchers must realise that needs should be identified by communities and not them</li> <li>• Much Research has been done this needs to be used and publicised</li> <li>• There is not enough respect of local knowledge. Researchers must think to base their information on this</li> <li>• Research must be carried out to improve yields, varieties and water efficiency</li> <li>• Research should be carried out into value added products</li> <li>• Research into more efficient storage systems</li> <li>• One should be looking at new possible crops</li> <li>• Research should be carried out on invasive diseases of crops and how to cure them</li> <li>• We need to look at current Land-use patterns. Are they</li> </ul>

<i>Users</i>	<i>Needs</i>
	<p>helping or hindering. We also need to look at land capability, land limitations and land tenure</p> <ul style="list-style-type: none"> <li>• Fragmentation of power existed. There are now land commissions being set up. This is an opportunity if it is well done. Action research is required for this</li> </ul>

### ***5.5 What can be done to maximise the impact of scientific research on the policy and practice of NRM?***

Ways to maximize impact of scientific research include:

- Address actual problems
- Involve local communities in research
- Create changes in attitude towards research
- Improve extension to help better inform people about new ideas
- Get people committed to actually sharing research and not keeping it for themselves